HKE Catalogue - Aldinet

HKE®

Relay Catalogue

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HKE RELAY CATALOGUE 【ENGLISH】

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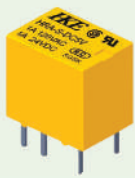
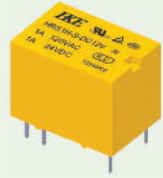
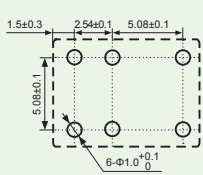
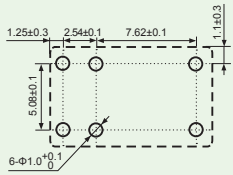
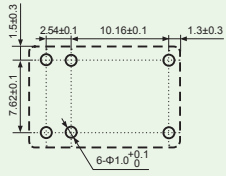
FLASHER

Category	SIGNAL RELAY		
Product Model	**HRA**	**HRB1**	**HRS1**
Relay Picture			
Dimensions L×W×H (mm)	10.2×7.4×10.0	12.3×7.3×10.2	15.6×10.6×11.8
Safety Standards			
Characteristics	▪ Microminiature relay ▪ Light weight ▪ Contact: 1 Form C (SPDT)	▪ Microminiature relay ▪ Light weight ▪ Contact: 1 Form C ▪ High sensitivity 150mW	▪ Microminiature relay ▪ High sensitivity ▪ Contact: 1 Form C ▪ Max. Switching capacity 3A
Contact Form	1C	1C	1C
Contact Rating (Resistive Load)	1A 120VAC/24VDC	1A 125VAC/24VDC 2A 125VAC/24VDC	1A 120VAC/24VDC 3A 120VAC/24VDC
Max. Switching Voltage	120VAC/30VDC	125VAC/30VDC	220VAC/30VDC
Max. Switching Current	2A	2A	3A
Max. Switching Power	120VA,30W	250VA,48W	360VA,72W
Min. Switching Load	5VDC,10mA	5VDC,10mA	5VDC,10mA
Coil Voltage	3～24VDC	3～24VDC	3～24VDC
Coil Power (mW)	330mW,450mW	150mW	200mW,360mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 500VAC,1min ② 500VAC,1min	① 500VAC,1min ② 1,000VAC,1min	① 750VAC,1min ② 1,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000(1A 120VAC/24VDC) 50,000(3A 120VAC/24VDC)
Operating Temperature	-25℃ to +70℃	-40℃ to +70℃	-25℃ to +70℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	1.7g	2.2g	4.0g
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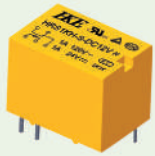
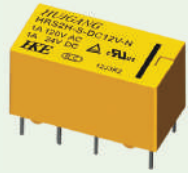
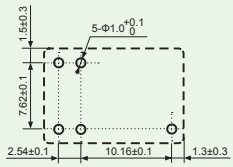
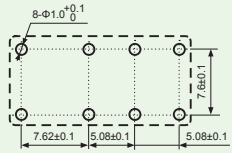
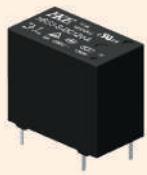
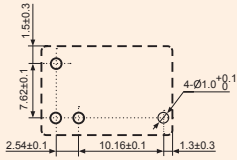
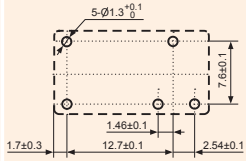
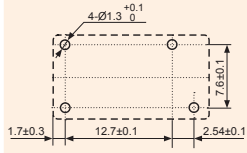
Category	SIGNAL RELAY	
Product Model	**HRS1K**	**HRS2H**
Relay Picture		
Dimensions L×W×H(mm)	15.6×10.6×11.8	20.5×9.9×11.4
Safety Standards	cULus, TÜV, CQC	cULus, TÜV, CQC
Characteristics	▪ Microminiature relay ▪ High sensitivity ▪ Contact: 1 Form C ▪ Dielectric strength of 2500V between coil and contacts	▪ Microminiature relay ▪ High sensitivity ▪ 2 Form C contacts (DPDT)
Contact Form	1C	2C
Contact Rating (Resistive Load)	1A 120VAC/24VDC 3A 120VAC/24VDC	1A 120VAC/24VDC 2A 120VAC/24VDC
Max. Switching Voltage	220VAC/30VDC	125VAC/30VDC
Max. Switching Current	3A	2A
Max. Switching Power	360VA,72W	240VA,48W
Min. Switching Load	5VDC,10mA	5VDC,10mA
Coil Voltage	3～24VDC	3～24VDC
Coil Power (mW)	200mW,360mW	150mW、200mW、360mW、450mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 750VAC,1min ②Standard：1,500VAC, 1 min ②E：2,500VAC, 1 min	① 500VAC,1min ② 1,000VAC,1min
Electrical Life (ops.)	100,000次 (1A 120VAC/24VDC) 50,000次 (3A 120VAC/24VDC)	100,000
Operating Temperature	-25℃ to +70℃	-25℃ to +70℃
Terminal Type	PCB	PCB
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	4.0g	5.0g
Page	**40**	**43**

Category	POWER RELAY		
Product Model	**HRS1KH3**	**HRS3**	**HRS3F**
Relay Picture			
Dimensions L×W×H (mm)	15.6×10.6×11.8	18.6×10.4×15.8	18.2×10.2×15.5
Safety Standards			
Characteristics	▪ Microminiature relay ▪ High sensitivity ▪ Contact: 1 Form A ▪ Switching capacity 3A	▪ Microminiature relay ▪ Max. Switching capacity: 10A ▪ Contact: 1 Form A, 1 Form C	▪ Microminiature relay ▪ 5A switching capacity ▪ Contact: 1 Form A ▪ Reinforced insulation between coil and contact
Contact Form	1A	1A,1C	1A
Contact Rating (Resistive Load)	3A 220VAC/30VDC	A:10A 125VAC,5A 250VAC/28VDC C:NO/NC:5A/3A 250VAC/28VDC	5A 250VAC/30VDC Horsepower : 1/3HP 240VAC(0.45W) 1/4HP 240VAC
Max. Switching Voltage	220VAC/30VDC	250VAC/28VDC	277VAC/30VDC
Max. Switching Current	3A	10A	5A
Max. Switching Power	660VA,90W	1,250VA,280W	1,250VA,150W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	3～24VDC	3～24VDC	5～24VDC
Coil Power (mW)	200mW	200mW,450mW	200mW,450mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 750VAC,1min ②1,000VAC,1min	①1,000VAC,1min ② A: 3,500VAC,1 min ② C: 2,500VAC,1 min	①1,000VAC,1min ②4,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-25℃ to +70℃	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	4.0g	6.0g	6.0g
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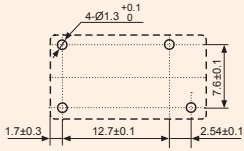
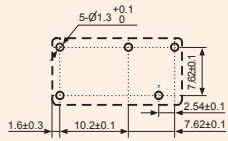
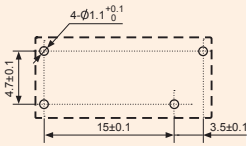
Category	POWER RELAY		
Product Model	**HRS3FN**	**HRS3T**	**AC5**
Relay Picture			
Dimensions L×W×H(mm)	18.2×10.2×15.5	20.9×10.2×15.5	20.4×7.0×15.4
Safety Standards	cULus, TÜV, CQC	cULus, TÜV, CQC	cULus, VDE, CQC
Characteristics	▪ Microminiature relay ▪ 10A switching capacity ▪ Contact: 1 Form A ▪ Reinforced insulation between coil and contact	▪ Microminiature relay ▪ Max. Switching capacity: 10A ▪ Contact: 1 Form A, 1 Form C	Microminiature relay Slim type, 7mm width High mounting density High sensitivity 200mW
Contact Form	1A	1A,1C	1A
Contact Rating (Resistive Load)	10A 250VAC Horsepower:1/3HP 240VAC(0.45W) 1/4HP 240VAC(0.45W)	A:5A 250VAC/28VDC C:NO/NC:5A/3A 250VAC/28VDC	5A 250VAC
Max. Switching Voltage	277VAC/30VDC	250VAC/28VDC	250VAC/30VDC
Max. Switching Current	10A	10A	5A
Max. Switching Power	2,500VA,300W	1,250VA,280W	1,250VA,150W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	5～24VDC	3～48VDC	5～24VDC
Coil Power (mW)	200mW,450mW	200mW,450mW	200mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 4,000VAC,1min	① 1,000VAC,1min ② A: 3,500VAC,1 min ② C: 2,500VAC,1 min	① 750VAC,1min ② 4,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	6.0g	7.0g	3.0g
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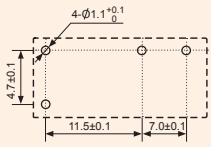
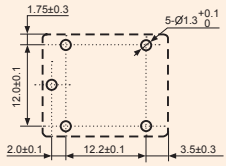
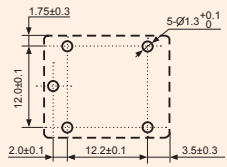
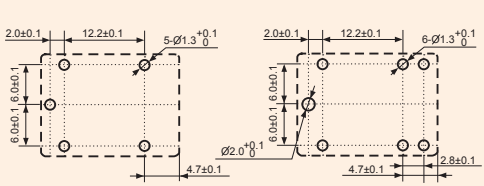
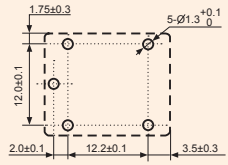
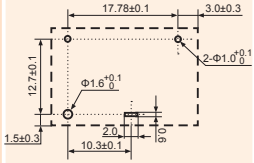
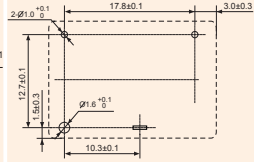
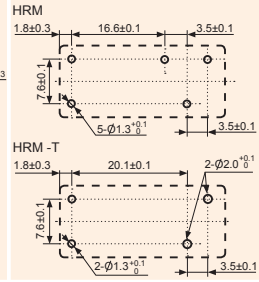
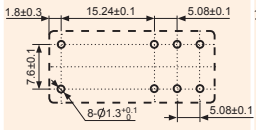
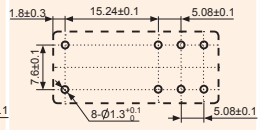
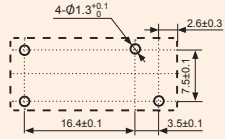
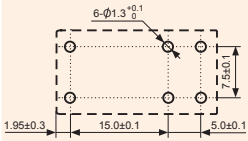
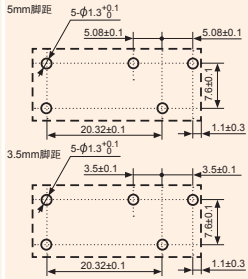
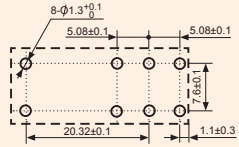
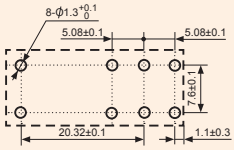
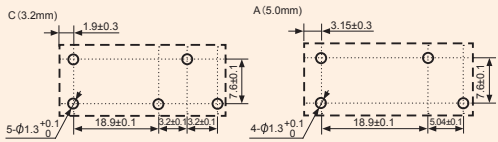
Category	POWER RELAY		
Product Model	**AC5N**	**HRS4**	**HRS4F**
Relay Picture			
Dimensions L×W×H(mm)	20.4×7.0×15.4	19.0×15.5×15.8	19.0×15.5×15.8
Safety Standards	cULus, VDE, CQC	SEV, cULus, TÜV, CQC	cULus, VDE, CQC
Characteristics	▪ Microminiature relay ▪ Slim type, 7mm width High mounting density ▪ High sensitivity 200mW	▪ Miniature relay ▪ Contact: 1 Form A, 1 Form B, 1 Form C ▪ TV-5 rating ▪ UL Class F insulation	▪ Miniature relay ▪ Dielectric strength of 2500V between coil and contacts ▪ Contact: 1 Form A,1 Form C
Contact Form	1A	1A,1B,1C	1A,1C
Contact Rating (Resistive Load)	5A 250VAC	A:15A 125VAC, 10A 250VAC C: NO:10A 250VAC/24VDC NC:6A 250VAC/24VDC TV-5 125VAC	10A 250VAC/30VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/28VDC	250VAC/30VDC
Max. Switching Current	5A	15A	10A
Max. Switching Power	1,250VA,150W	2,500VA,280W	2,500VA,300W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	5～24VDC	3～48VDC	3～48VDC
Coil Power (mW)	200mW	360mW,450mW	360mW,450mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 750VAC,1min ② 4,000VAC,1min	① 750VAC,1min ② 1,500VAC,1min	① 1,000VAC,1min ② 2,500VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	3.0g	10.0g	11.0g
Page	63	65	69

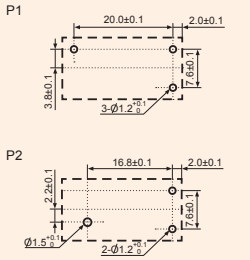
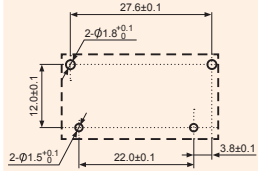
Category	POWER RELAY	
Product Model	**HRS4N**	**HRS4T**
Relay Picture		
Dimensions L×W×H(mm)	21.0×16.0×20.8	20.0×16.3×20.2
Safety Standards		
Characteristics	▪ Max.20A switching capability ▪ High temperature load: 17A 277VAC at 105℃ ▪ Available for single pin and double pins terminal ▪ Compliance to standard EN 60335-1 ▪ Compliance to RoHS Directive ▪ UL Insulation system: F Class	▪ Miniature relay ▪ Contact: 1 Form A, 1 Form B, 1 Form C ▪ UL Class F insulation
Contact Form	1A,1B,1C	1A,1B,1C
Contact Rating (Resistive Load)	A: 20A 125VAC 17A 277VAC TV-8 125VAC C:NO:17A 277VAC NC:7A 277VAC	10A 250VAC/24VDC
Max. Switching Voltage	400VAC/28VDC	250VAC/28VDC
Max. Switching Current	20A(A),17A(C)	15A
Max. Switching Power	4,700VA	2,500VA,280W
Min. Switching Load	5VDC,100mA	5VDC,100mA
Coil Voltage	3～48VDC	3～48VDC
Coil Power (mW)	360mW	360mW,450mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 2,500VAC,1min	① 1,000VAC,1min ② 1,500VAC,1min
Electrical Life (ops.)	100,000	100,000
Operating Temperature	-40℃ to +105℃	-40℃ to +85℃
Terminal Type	PCB	PCB
Terminal Layout (Bottom View) (mm)	Single pin version / Double pin version 	
Weight (Approximately)	14.0g	12.0g
Page	72	75

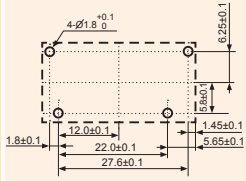
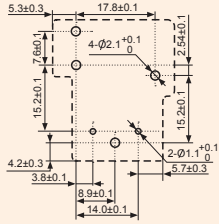
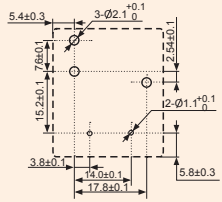
Category	POWER RELAY		
Product Model	**V6**	**V6T**	**HRM**
Relay Picture			
Dimensions L×W×H (mm)	23.0×16.1×10.2	23.0×16.1×10.2	29.0×12.6×20.8
Safety Standards			
Characteristics	▪ Low profile, flat type relay ▪ Max. Switching capacity: 15A ▪ Tungsten lamp load: 10A 125VAC ▪ High sensitivity 200mW	▪ Low profile, flat type relay ▪ Max. Switching capacity: 16A ▪ Lever type(Manual Operation) ▪ High sensitivity 200mW	▪ General purpose power relay ▪ TV-5 rating ▪ Creepage distance: 8mm
Contact Form	1A	1A	1A,1C
Contact Rating (Resistive Load)	15A125VAC 10A 250VAC/24VDC	16A 250VAC 16A 30VDC	10A 250VAC/30VDC, TV-5 Inductive: 5A 240VAC (COSΦ=0.4) 16A 250VAC(For T type)
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	16A	16A	16A
Max. Switching Power	4,000VA,480W	4,000VA,480W	2,500VA,300W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	3～48VDC	3～48VDC	3～48VDC
Coil Power (mW)	200mW	200mW	540mW,720mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 750VAC,1min ② 2,500VAC,1min	① 750VAC,1min ② 2,500VAC,1min	① 1,000VAC,1min ② 4,000VAC,1min
Electrical Life (ops.)	100,000	50,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃	-30～+55℃(720mW) -30～+70℃(540mW)
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	9.00g	10.00g	13.00g
Page	**79**	**82**	**84**

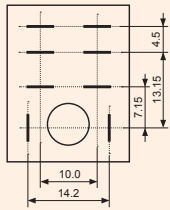
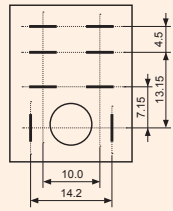
Category	POWER RELAY		
Product Model	**HRM1**	**HRM2**	**HRM3**
Relay Picture			
Dimensions L×W×H(mm)	29.0×12.6×20.8	29.0×12.6×20.8	Sealed: 24.6×10.6×25.0 Unsealed: 24.0×10.0×25.0
Safety Standards			
Characteristics	▪ Slim type ▪ Contact: 2 Form A, 2 Form C ▪ Dielectric strength of 4000V between coil and contacts ▪ Creepage distance: 8mm	▪ General purpose power relay ▪ Contact: 1 Form A, 1 Form C ▪ Dielectric strength of 4000V between coil and contacts ▪ 16A contact current ▪ Creepage distance: 8mm	▪ Available in sealed and unsealed versions ▪ High sensitivity type with power consumption of 250mW ▪ 1 form A contact configuration ▪ Comply with TV-5 standards required for TV and audio power supplies
Contact Form	2A,2C	1A,1C	1A
Contact Rating (Resistive Load)	5A 250VAC/24VDC, TV-5 Inductive Load 5A 250VAC/24VDC (COSΦ=0.4,L/R=7ms)	16A 250VAC/30VDC, TV-8 Inductive Load 8A 250VAC/30VDC (COSΦ=0.4,L/R=7ms)	10A 250VAC/30VDC,TV-5
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	5A	16A	10A
Max. Switching Power	1,250VA,150W	4,000VA,480W	2,500VA,300W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	3～48VDC	3～48VDC	3～48VDC
Coil Power (mW)	540mW,720mW	540mW,720mW	150mW,250mW,540mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 4,000VAC,1min	① 1,000VAC,1min ② 4,000VAC,1min	① 1,000VAC,1min ② 4,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-30～+55℃(720mW) -30～+70℃(540mW)	-30～+55℃(720mW) -30～+70℃(540mW)	-40℃ to+70℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	13.0g	13.0g	10.0g
Page	**88**	**92**	**96**

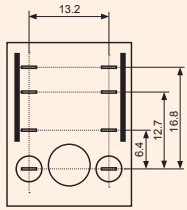
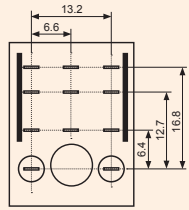
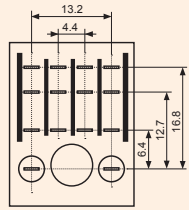
Category	POWER RELAY		
Product Model	**HRM4**	**HCP1**	**HCP2**
Relay Picture			
Dimensions L×W×H(mm)	Sealed: 24.4×12.9×24.8 Unsealed: 23.5×12.0×24.8	29.0×12.6×15.8	29.0×12.6×15.8
Safety Standards			
Characteristics	▪ Small size ▪ Sealed and unsealed versions ▪ 5A contact current ▪ 2 form A contact configuration ▪ Creepage distance: 6mm ▪ Cross bar or rivet contacts	▪ Low profile,height 15.8mm ▪ Switching capacity 12A ▪ Contact: 1 Form A, 1 Form C ▪ Sensitivity 400mW ▪ Insulation: 5KV Creepage:10mm	▪ Low profile, height 15.8mm ▪ Switching capacity 8A ▪ Contact: 2 Form A, 2 Form C ▪ Sensitivity 400mW ▪ Insulation: 5KV Creepage:10mm
Contact Form	2A	1A,1C	2A,2C
Contact Rating (Resistive Load)	5A 250VAC/30VDC,TV-5 3A 125VAC/30VDC(SP)	12A 250VAC/30VDC Inductive load 5A 250VAC Cosφ=0.4	8A 250VAC/30VDC Inductive load 4A 250VAC Cosφ=0.4
Max. Switching Voltage	250VAC/30VDC	440VAC/120VDC	440VAC/120VDC
Max. Switching Current	5A	12A	8A
Max. Switching Power	1,250VA,150W	3,000VA,360W	2,000VA,240W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	3～48VDC	5～48VDC	5～48VDC
Coil Power (mW)	250mW,540mW	400mW	400mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 4,000VAC,1min	① 1,000VAC,1min ② 5,000VAC,1min	① 1,000VAC,1min ② 5,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-30℃ to +70℃	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	13.0g	13.00g	13.0g
Page	**100**	**104**	**108**

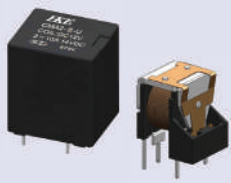
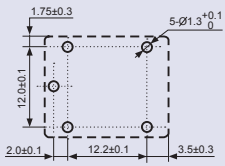
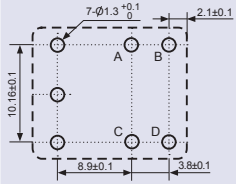
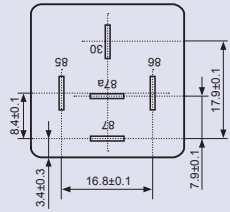
Category	POWER RELAY	
Product Model	**HCP3**	**HCP4**
Relay Picture		
Dimensions L×W×H(mm)	29.0×12.6×15.8	28.4×10.0×12.7
Safety Standards	cULus, TÜV, CQC, VDE	cULus, VDE, CQC
Characteristics	▪ Low profile, height 15.8mm ▪ Switching capacity 16A ▪ Contact: 1 Form A, 1 Form C ▪ Sensitivity 400mW ▪ Insulation: 5KV Creepage:10mm	▪ Slim type, width 10.0mm ▪ Contact: 1 Form A, 1 Form C ▪ High sensitivity 220mw ▪ High isolation, Insulation distance 8mm
Contact Form	1A,1C	1A,1C
Contact Rating (Resistive Load)	16A 250VAC/30VDC Inductive load 8A 250VAC Cosφ=0.4	8A 250VAC/30VDC
Max. Switching Voltage	440VAC/120VDC	440VAC/30VDC
Max. Switching Current	16A	10A
Max. Switching Power	4,000VA,480W	2,000VA,240W
Min. Switching Load	5VDC,100mA	5VDC,100mA
Coil Voltage	3～48VDC	5 ～48VDC
Coil Power (mW)	250m,400mW	0.22W～0.29W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 5,000VAC,1min	① 1,000VAC,1min ② 5,000VAC,1min
Electrical Life (ops.)	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB	PCB
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	13.0g	8.00g
Page	**111**	**114**

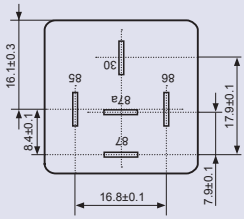
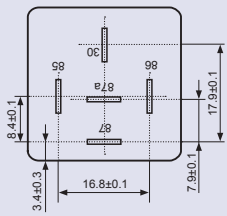
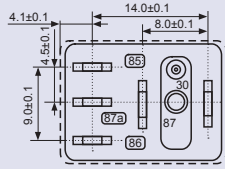
Category	POWER RELAY	
Product Model	**F5**	**F6**
Relay Picture		
Dimensions L×W×H (mm)	24.2×12.3×20.1	30.5×16.0×20.1
Safety Standards		
Characteristics	■ Compact and small in size ■ Switching capacity: 20A ■ Dielectric strength of 5000V between coil and contacts ■ Available in PCB or quick connect terminals ■ Ideal for switching magnetron and heater loads in microwave oven	■ Miniature relay with high switching contact capacity, 20A/250VAC and 25A/250VAC ■ Low profile, height 16mm ■ Dielectric strength of 5000V between coil and contacts ■ Ideal for switching compressor and inverter loads ■ Available in both PCB and quick connect terminals ■ Applications: Air conditioners, refrigerators, OA equipment, etc
Contact Form	1A	1A
Contact Rating (Resistive Load)	16A 250VAC, 20A 125VAC	F6:25A 250VAC F6-P:20A 250VAC 20 FLA/80 LRA 120VAC
Max. Switching Voltage	250VAC/30VDC	250VAC
Max. Switching Current	20A	25A
Max. Switching Power	4,000VA/480W	6,250VA
Min. Switching Load	5VDC,100mA	5VDC,100mA
Coil Voltage	3～48VDC	5～24VDC
Coil Power (mW)	500mW,400mW	900mW
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 5,000VAC,1min	① 1,500VAC,1min ② 5,000VAC,1min
Electrical Life (ops.)	100,000(16A 250VAC)	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB，Quick connect	PCB，Quick connect
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	10.00	18.0g
Page	**117**	**121**

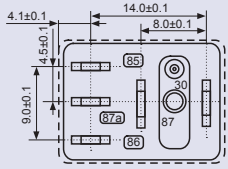
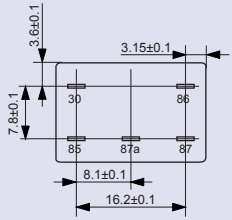
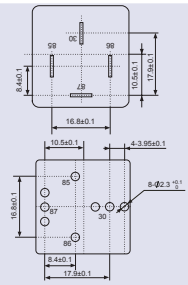
Category	POWER RELAY		
Product Model	**CMP6**	**CMP7**	**CMP8**
Relay Picture			
Dimensions L×W×H(mm)	QC:30.4×15.9×23.4 P:30.4×15.9×26.4	31.8×27.4×20.0	Exposed：31.8×27.4×19.8 Concealed：31.8×27.4×27.7
Safety Standards			
Characteristics	▪ Switching capacity: 20A ▪ PCB or quick connect terminals	▪ Switching capacity: 40A ▪ PCB terminal ▪ Class F insulation	▪ Switching capacity 30A ▪ Dielectric strength of 2500V between coil and contacts ▪ PCB or quick connection terminals ▪ Available in exposed or concealed terminals
Contact Form	1A	1A,1C	1A,1C
Contact Rating (Resistive Load)	20A 250VAC/30VDC Inrush Current：80A Break Current：20A	A ：30A 250VAC/24VDC AT：40A 250VAC/24VDC C：NO：20A 250VAC/24VDC NC：15A 250VAC/24VDC CT：NO：40A 250VAC/24VDC NC：30A 250VAC/24VDC	A：30A 250VAC/24VDC C：NO：20A 250VAC/24VDC NC：15A 250VAC/24VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/28VDC	250VAC/28VDC
Max. Switching Current	20A	40A(T) 30A	30A
Max. Switching Power	5,000VA,600W	7,500VA,560W	7,500VA,560W
Min. Switching Load	5VDC,100mA	5VDC,100mA	5VDC,100mA
Coil Voltage	5～24VDC	5～48VDC	5～48VDC
Coil Power (mW)	900mW	900mW	900mW
DielectricStrength： ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 4,500VAC,1min	① 1,500VAC,1min ② 2,500VAC,1min	① 1,500VAC,1min ② 2,500VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-20℃ to +55℃	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB，Quick connect	PCB	PCB，Quick connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	21.0g	27.0g	29.0g
Page	**124**	**127**	**132**

Category	POWER RELAY	
Product Model	**LH**	
Relay Picture		
Dimensions L×W×H (mm)	27.6×21.6 ×35.0	
Safety Standards	c UL us	
Characteristics	▪ Switching capacity: 15A ▪ Contact: 1 Form, 2 Form ▪ Transparent cover ▪ AC/DC Coil	
Contact Form	1A, 1B, 1C	2A, 2B, 2C
Contact Rating (Resistive Load)	15A 220VAC/28VDC	10A 220VAC/28VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	15A	10A
Max. Switching Power	3300VA/420W	2200VA/280W
Min. Switching Load	—	—
Coil Voltage	5～110VDC,6～240VAC	5～110VDC,6～240VAC
Coil Power (mW)	900mW, 1100mW, 1200mVA	900mW, 1100mW, 1200mVA
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 1,500VAC,1min	① 1,000VAC,1min ② 1,500VAC,1min
Electrical Life (ops.)	100,000	100,000
Operating Temperature	-40℃ to +70℃	--40℃ to +70℃
Terminal Type	PCB，Quick connect	PCB，Quick connect
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	PCB: 37g ,Quick connect: 37g	
Page	137	

Category	POWER RELAY		
Product Model	LT		
Relay Picture			
Dimensions L×W×H(mm)	27.6×21.6×35.0		
Safety Standards			
Characteristics	▪ Dimensions: 27.6×21.6×35.0(mm) ▪ Available in various types mounting terminals ▪ Contact form : 2A, 2B, 2C; 3A, 3B, 3C; 4A, 4B, 4C ▪ Transparent cover ▪ AC/DC Coil		
Contact Form	2A, 2B, 2C	3A, 3B, 3C	4A, 4B, 4C
Contact Rating (Resistive Load)	5A 220VAC/28VDC 7A 220VAC/28VDC	5A 220VAC/28VDC 7A 220VAC/28VDC	3A 220VAC/28VDC 5A 220VAC/28VDC
Max. Switching Voltage	250VAC/30VDC	250VAC/30VDC	250VAC/30VDC
Max. Switching Current	5A, 7A	5A, 7A	3A, 5A
Max. Switching Power	5A: 1100VA/140W 7A: 1540VA/196W	5A: 1100VA/140W 7A: 1540VA/196W	3A: 660VA/84W 5A: 1100VA/140W
Min. Switching Load	—	—	—
Coil Voltage	5～110VDC,6～240VAC	5～110VDC,6～240VAC	5～110VDC,6～240VAC
Coil Power (mW)	900mW, 1100mW,1200mVA		
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 1,000VAC,1min ② 5,000VAC,1min	① 1,000VAC,1min ② 5,000VAC,1min	① 1,000VAC,1min ② 5,000VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +70℃	-40℃ to +70℃	-40℃ to +70℃
Terminal Type	PCB，Quick connect	PCB，Quick connect	PCB，Quick connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	PCB: 37g ,Quick connect: 37g		
Page	140		

Category	AUTOMOTIVE RELAY		
Product Model	**CMA1**	**CMA2**	**CMA31**
Relay Picture			
Dimensions L×W×H (mm)	19.0×15.5×15.8	Sealed: 17.3×14.8×19.5 Open: 15.7×12.7×17.7	27.8×27.8×24.6
Characteristics	▪ Miniature automotive relay ▪ High Switching capacity 20A ▪ Available in 3 contact configurations, 1 Form A, B and C ▪ Applications: car alarm, central locking system, power windows,seat control, etc	▪ Miniature automotive relay ▪ Available in both open frame and plastic sealed package ▪ Numerous contact arrangements ▪ High switching capacity 20A	▪ Heavy duty general purpose automotive relay ▪ Switching capacity 40A ▪ Available in 2 mounting options, socket or bracket mount ▪ Applications: air compressor, heater, fan motor, blower fan, defogger, etc
Contact Form	1A,1B,1C	1A,1C,1U,1V,1W	1A,1B,1C
Contact Rating (Resistive Load)	15A 14VDC(B、C) 20A 14VDC(A)	A:15A 14VDC C:NO/NC:15A/10A 14VDC W:NO/NC:2×7A/2×5A 14VDC U:2×10A 14VDC V:2×7A 14VDC	12VDC: 40A 14VDC (A) 30A 14VDC (B) 30A 14VDC (C) 24VDC: 20A 28VDC (A) 10A 28VDC (B) NO/NC:20A/10A 28VDC(C)
Max. Switching Voltage	75VDC	75VDC	75VDC
Max. Switching Current	20A	20A	40A
Max. Switching Power	280W	280W	420W(C) ,560W(A)
Coil Voltage	6～24VDC	3～24VDC	6～24VDC
Coil Power (W)	0.8W,0.36mW	1.1W	1.6W,1.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 750VAC,1min ② 1,000VAC,1min	① 550VAC,1min ②1,000VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB	PCB	Quick Connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	10.0g	sealed :12.0g,open:8.0g	Bracket : 37.0g Without Bracket: 32.0g
Page	**146**	**149**	**152**

Category	AUTOMOTIVE RELAY		
Product Model	**CMA31(A1/B1)**	**CMA32**	**4133**
Relay Picture			
Dimensions L×W×H(mm)	27.9×27.9×25.0	27.8×27.8×24.6	20.4×15.1×22.0
Characteristics	▪ Automotive relay ▪ Switching capacity : 40A ▪ Contact: 1 Form A,1 Form B	▪ Heavy duty general purpose automotive relay ▪ Available in 2 mounting options, with bracket or without bracket ▪ Two contact configurations, 1 Form A and 2 Form A	▪ Miniature heavy duty general purpose automotive relay ▪ Switching capacity 35A ▪ 1 Form A and C contact configurations ▪ Operating ambient temperature: 125℃ ▪ Applications: air compressor, heater, fan motor, blower fan, defogger, etc
Contact Form	1A,1B	1A,1U	1A,1C
Contact Rating (Resistive Load)	12VDC:40A 14VDC(A1) 30A 14VDC(B1) 24VDC:20A 28VDC(A1) 10A 28VDC(B1)	12VDC: 30A 14VDC(A) 2×20A 14VDC(U) 24VDC: 10A 28VDC(A) 2×10A 28VDC(U)	12VDC:NO:35A 14VDC NC:20A 14VDC 24VDC:NO:15A 28VDC NC: 8A 28VDC
Max. Switching Voltage	75VDC	75VDC	28VDC
Max. Switching Current	40A	30A	35A
Max. Switching Power	420W	420W	490W(12V),420W(24V)
Coil Voltage	12～24VDC	12～24VDC	12～24VDC
Coil Power (W)	1.6W	1.6W,1.8W	1.5W,1.7W,1.8W,2.0W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	50,000	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃	-40℃ to +125℃
Terminal Type	Quick Connect	Quick Connect	Quick Connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	Bracket : 26.0g Without Bracket: 23.0g	Bracket : 37.0g Without Bracket: 32.0g	18.0g
Page	**155**	**157**	**160**

Category	AUTOMOTIVE RELAY		
Product Model	**4133W**	**CMA34**	**CMA35**
Relay Picture			
Dimensions L×W×H (mm)	20.4×15.1×23.0	22.5×15.0×25.0	26.0×26.0×24.8
Characteristics	▪ Miniature heavy duty general purpose automotive relay ▪ Switching capacity 30A ▪ 1 Form A and C contact configurations ▪ Operating ambient temperature: 125℃ ▪ Applications: air compressor, heater, fan motor, blower fan, defogger, etc	▪ Microminiature automotive relay ▪ 125℃ of operating ambient temperature ▪ 2.8mm of Flat quick connection terminal ▪ Compliance to Rohs、ELV Directive	▪ Heavy duty general purpose automotive relay ▪ 70A of contact switching capacity ▪ 125℃ of working temperature ▪ Normal open contact configuration ▪ Availlable for Plastic sealed and unsealed type ▪ Quick Connect Terminals and PCB Terminals
Contact Form	1A,1C	1A,1C	1A
Contact Rating (Resistive Load)	12VDC:NO:30A 14VDC NC:20A 14VDC 24VDC:NO:15A 28VDC NC: 8A 28VDC	12VDC:NO:35A 14VDC NC:20A 14VDC 24VDC:NO:20A 28VDC NC:10A 28VDC	6V,12VDC: 70A 14VDC 24VDC: 40A 28VDC
Max. Switching Voltage	28VDC	40VDC	50VDC
Max. Switching Current	30A	Make(NO):150A. Break(NO):35A	70A
Max. Switching Power	490W(12V),420W(24V)	490W(12V),560W(24V)	1120W
Coil Voltage	12～24VDC	12～24VDC	6～24VDC
Coil Power (W)	1.5W,1.7W,1.8W,2.0W	1.2W, 1.4W,1.6W	1.6W, 1.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +125℃	-40℃ to +125℃	-40℃ to +125℃
Terminal Type	Quick connect	Quick connect	Quick connect,PCB
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	18.0g	20.0g	38.0g
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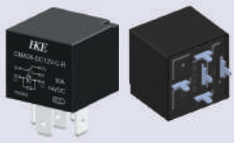
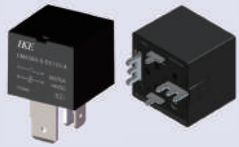
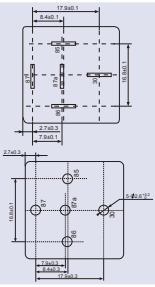
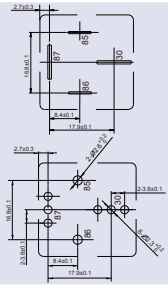
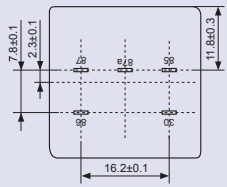
Category	AUTOMOTIVE RELAY		
Product Model	**CMA36**	**CMA36N**	**CMA39**
Relay Picture			
Dimensions L×W×H(mm)	26.0×26.0×22.7	26.6×26.0×22.7	28.0×28.0×25.0
Characteristics	▪ 50A of switching capacity ▪ 125℃ of operating ambient temperature ▪ SPST and SPDT contact form ▪ Compliance to Rohs ELV Directive ▪ Availlable for Plastic sealed and unsealed type	▪ General purpose automotive relay ▪ 70A of switching capability ▪ Contact:1 Form A ▪ Availlable for Plastic sealed and unsealed type ▪ Quick Connect Terminals and PCB Terminals ▪ 125℃ of operating ambient temperature	▪ 2.8mm of quick flat connection terminal ▪ Contact: 1 Form A , 1 Form C ▪ 125℃ of working temperature ▪ Available for Sealed type or bayonet-type ▪ Compliance for Rohs and ELV directive
Contact Form	1A,1C	1A	1A,1C
Contact Rating (Resistive Load)	Standard: NO:40A/14VDC,NC:30A/14VDC NO:20A/28VDC,NC:10A/28VDC T: NO:50A/14VDC,NC:30A/14VDC NO:30A/28VDC,NC:10A/28VDC	Resistive: NO:70A/14VDC NO:40A/28VDC Inductive: Make150A/14VDC break50A/14VDC Lamp: Surge200A/14VDC break40A/14VDC	NO: 35A 14VDC NC: 20A 14VDC
Max. Switching Voltage	28VDC	Refer to 'Max.switching power curve'	30VDC
Max. Switching Current	Make: 150A (NO,surge) Break: 50A (steady-state)	Make(NO,lamp)200A Break (steady state) 70A (res, 13.5V)	Make:150A(lamp),Break:35A
Max. Switching Power	640W	640W	490W
Coil Voltage	12～24VDC	12～24VDC	12～24VDC
Coil Power (W)	1.6W,1.8W,2.0W,2.2W	1.6W,1.8W,2.0W	1.6W,1.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +125℃	-40℃ to +125℃	-40℃ to +125℃
Terminal Type	Quick connect,PCB	Quick connect,PCB	Quick connect
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	35.0g	38.0g	35.0g
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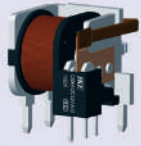
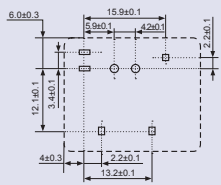
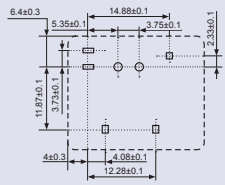
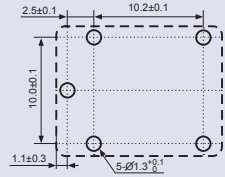
Category	AUTOMOTIVE RELAY		
Product Model	**CMA4**		**CMA51**
Relay Picture			
Dimensions L×W×H (mm)	Sealed: 25.8×20.6×21.0	Open: 18.0×23.4×17.9	15.6×12.2×13.7
Characteristics	▪ General purpose automotive relay ▪ Available in open frame and plastic sealed packages ▪ High contact capacity 40A ▪ USA or European footprints		▪ Compact microminiature general purpose automotive relay ▪ High inrush capability: 60A ▪ Contains no lead and features cadmium-free contacts ensuring environment-friendly use ▪ Applications: car alarm, power window, central locking system, seat adjustment control, etc
Contact Form	1A,1C	1A,1C	1A,1B,1C
Contact Rating (Resistive Load)	30A 14VDC (C) 40A 14VDC (A)	30A 14VDC (C) 40A 14VDC (A)	A: 20A 14VDC B、C: 15A 14VDC
Max. Switching Voltage	75VDC	75VDC	30VDC
Max. Switching Current	40A	40A	35A
Max. Switching Power	560W	560W	280W
Coil Voltage	6～24VDC	6～24VDC	6～24VDC
Coil Power (W)	1.6W	1.6W	0.6W,0.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)	European footprint: 	USA footprint: 	
Weight (Approximately)	Sealed: 21.0g	Open: 15.0g	6.0g
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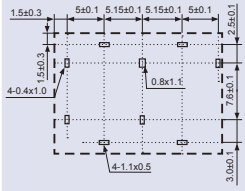
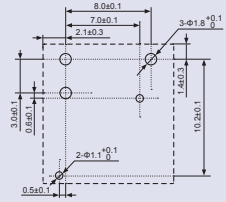
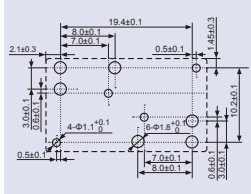
Category	AUTOMOTIVE RELAY		
Product Model	**CMA512**	**CMA53/CMA532**	
Relay Picture			
Dimensions L×W×H(mm)	23.2×16.0×14.1	CMA53: 13.0×12.0×10.0	CMA532:23.6×13.0×10.0
Characteristics	▪ Miniature automotive twin relay ▪ High inrush capability: 60A ▪ Contains no lead and features cadmium-free contacts ensuring environment-friendly use ▪ Applications: car alarm, power window, central locking system, seat adjustment control, etc	▪ Small and compact ▪ Available in single and twin relay CMA53 - single relay CMA532 - twin relay ▪ High contact capacity 30A ▪ Low noise operation ▪ Contains no lead and features cadmium-free contacts ensuring environment-friendly use ▪ Applications: car alarm, power window, central locking system, seat adjustment control, sunroof motor control, wiper, etc	
Contact Form	2×1C	1A, 1C	2×1A, 2×1C
Contact Rating (Resistive Load)	15A 14VDC	NO/NC:20A/15A 14VDC	NO/NC:20A/15A 14VDC
Max. Switching Voltage	30VDC	16VDC	16VDC
Max. Switching Current	35A	30A	30A
Max. Switching Power	280W	280W	280W
Coil Voltage	6～24VDC	6～24VDC	6～24VDC
Coil Power (W)	0.6W	0.55W,0.8W	0.55W,0.8W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +105℃	-40℃ to +105℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)		CMA53 	CMA532 
Weight (Approximately)	12.0g	CMA53:4.0g	CMA532:8.0g
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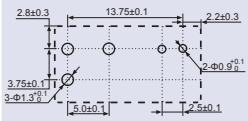
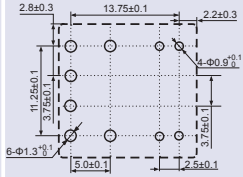
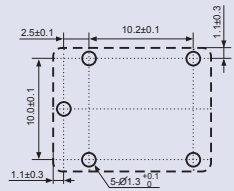
Category	AUTOMOTIVE RELAY		
Product Model	**CMA54/CMA542**		**CMA55**
Relay Picture			
Dimensions L×W×H(mm)	CMA54:17.5×9.2×13.2	CMA542:17.5×16.9×13.2	15.6×12.2×13.7
Characteristics	▪ Small and compact ▪ Available in single and twin relay CMA54 - single relay, CMA542 - twin relay CMA54 dimensions: 17.5×9.2×13.2(mm) CMA542 dimensions: 17.5×16.9×13.2(mm) ▪ High contact capacity 25A ▪ Low noise operation ▪ Contains no lead and features cadmium-free contacts ensuring environment-friendly use ▪ Applications: car alarm, power window, central locking system, seat adjustment control, sunroof motor control, wiper, etc		▪ Microminiature automotive relay ▪ Double make contact ▪ Applications:car alarm, reverse sensor, etc
Contact Form	1C	2×1C	2A
Contact Rating (Resistive Load)	20A14VDC	2×20A 14VDC	2×6A 13.5VDC
Max. Switching Voltage	40VDC	40VDC	14VDC
Max. Switching Current	25A	2×25A	2×10A
Max. Switching Power	280W	2×280W	2×81W
Coil Voltage	12VDC	12VDC	6～24VDC
Coil Power (W)	0.56W	0.56W	1.0W
DielectricStrength: ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃	-40℃ to +85℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)	CMA54 	CMA542 	
Weight (Approximately)	CMA54:5.0g	CMA542:10.0g	6.0g
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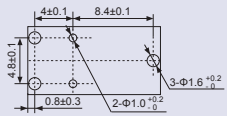
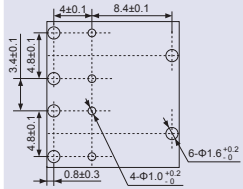
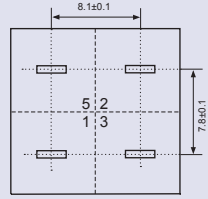
Category	AUTOMOTIVE RELAY		
Product Model	**CMA56/CMA562**		**CMA57**
Relay Picture			
Dimensions L×W×H(mm)	CMA56：14×7.2×13.7 CMA56T：14×7.2×14.2	CMA562： 14×15.4×13.7 CMA562T： 14×15.4×14.2	15.6×15.2×16.5
Characteristics	▪ Miniature automotive relay ▪ 25A of Motor Load ▪ Single relay or twin relay		▪ 125℃ of operating ambient temperature ▪ 2.8mm of Flat quick connection terminal ▪ Compliance to Rohs、ELV Directive
Contact Form	1C	2×1C	1A
Contact Rating (Resistive Load)	Motor:25A(Inrush) 14VDC Resistance:20A 14VDC	Motor:2×25A(Inrush) 14VDC Resistance:2×20A 14VDC	20A 14VDC
Max. Switching Voltage	16VDC	16VDC	16VDC
Max. Switching Current	30A	2×30A	Make:100A Break:30A
Max. Switching Power	350W	2×350W	320W
Coil Voltage	6～24VDC	6～24VDC	12VDC
Coil Power (W)	0.64W,0.8W	0.64W,0.8W	0.95W,1.1W
DielectricStrength： ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000	100,000
Operating Temperature	-40℃ to +105℃ (Standard) -40℃ to +125℃ (Reflow)	-40℃ to +105℃ (Standard) -40℃ to +125℃ (Reflow)	-40℃ to +125℃
Terminal Type	PCB	PCB	PCB
Terminal Layout (Bottom View) (mm)	CMA56 	CMA562 	
Weight (Approximately)	CMA56:4.0g	CMA562:8.0g	10.0g
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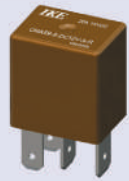
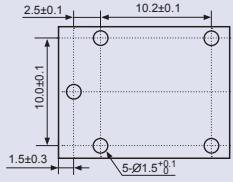
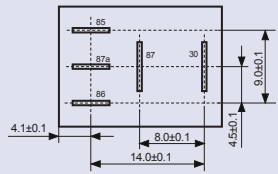
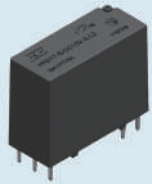
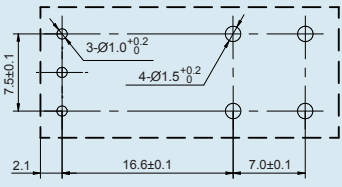
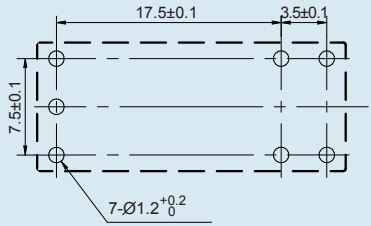
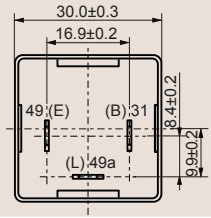
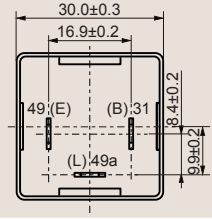
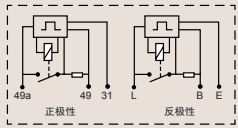
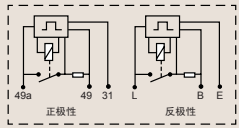
Category	AUTOMOTIVE RELAY	
Product Model	**CMA58**	**CMA59**
Relay Picture		
Dimensions L×W×H(mm)	17.0×13.0×16.0	20.4×15.1×22.0
Characteristics	▪ Reduction of 20dB sound pressure ▪ Saving Space ▪ Plastic Cover Sealed ▪ Compliance to Rohs、ELV Directive	▪ Automative Mute Relay ▪ 100,000operations for 25A 14VDC (Locked rotor current) ▪ Quick-Flat connection terminal ▪ sound pressure≤50dB ▪ Compliance to RoHS and ELV
Contact Form	1C	1A,1C
Contact Rating (Resistive Load)	NO/NC:20A/10A 14VDC	A(Resistive)：20A 14VDC C(Resistive)：NO:20A 14VDC NC:10A 14VDC Motor：25A(peak) 14VDC
Max. Switching Voltage	16VDC	16VDC
Max. Switching Current	20A	30A
Max. Switching Power	320W	480W
Coil Voltage	12VDC	12VDC
Coil Power (W)	0.64W	0.64W,0.85W
DielectricStrength： ① Open Contacts ② Coil and Contacts	① 550VAC,1min ② 550VAC,1min	① 550VAC,1min ② 550VAC,1min
Electrical Life (ops.)	100,000	100,000
Operating Temperature	-40℃ to +85℃	-40℃ to +125℃
Terminal Type	PCB	Quick connect
Terminal Layout (Bottom View) (mm)		
Weight (Approximately)	6.5g	11.6g
Page	**208**	**211**

Category	MAGNETIC LATCHING RELAY		
Product Model	**HKE16**	**HKE17**	
Relay Picture			
Dimensions L×W×H(mm)	29.0×12.7×16.0	24.0×10.0×18.8	
Safety Standards	cULus	—	
Characteristics	▪ DPST 16A Magetic latching relay ▪ Max.Surge Current 350A/2ms ▪ Energy-saving and Environmental Friendly product(RoHS Compliant)	▪ Magnetic Latching Relay ▪ SPST 16A Magetic latching relay ▪ Max.Surge Current 100A/2ms ▪ Comply to IEC 60335-1:household and similar electrical appliances-safety ▪ Impulse voltage is 12000V,Dielectric strength is 5000V	
Contact Form	2A	1A	
Contact Rating (Resistive Load)	16A 250VAC,5×10^4(Res) 20A 250VAC,2×10^4(Res) 1.5HP 250VAC,3×10^4(HP) 8A 220VAC,cosφ0.4,3×10^4 3300W 277VAC,2×10^4(Electronic Ballast)	Standard：8A 250VAC T：16A 277VAC	
Max. Switching Voltage	277VAC	250VAC	277VAC
Max. Switching Current	20A	8A	16A
Max. Switching Power	5000VA	2000VA	4432VA
Coil Voltage	3～48VDC	3～24VDC	
Coil Power (W)	0.6W,0.8W,1.2W	0.2W,0.4W,0.6W,1.0W	
DielectricStrength： ① Open Contacts ② Coil and Contacts	① 1,000VAC,50/60Hz,1min ② 4,000VAC,50/60Hz,1min	① 1,000VAC,50/60Hz,1min ② 5,000VAC,50/60Hz,1min	
Electrical Life (ops.)	Refer to 'contact load'	Refer to P215	
Operating Temperature	-40℃ to +85℃	-40℃ to +85℃(8A) -40℃ to +70℃(8A～16A)	
Terminal Type	PCB	PCB	
Terminal Layout (Bottom View) (mm)			
Weight (Approximately)	12.0g	8.0g	
Page	**214**	**217**	

Category	FLASHER	
Product Model	**CMAF01**	**CMAF01L**
Relay Picture		
Dimensions L×W×H(mm)	30.0×30.0×40.0	30.0×30.0×30.0
Characteristics	■ Special integrate circuit,stable reliable performance ■ Use of special high performance contacts, ultra-long electrical endurance ■ Surface mounting technology,advanced technology ■ Solid base design,stable structure ■ Protection IP50 ■ Steering light of the automobile control, Hazard warning flash lamp control	■ Special integrate circuit,stable reliable performance ■ Use of special high performance contacts, ultra-long electrical endurance ■ Surface mounting technology,advanced technology ■ Solid base design,stable structure ■ Protection IP50 ■ Steering light of the automobile control, Hazard warning flash lamp control
Norminal Load	2×21W+5W Turning Mode 2×(2×21W+5W) Hazard warning mode 21W+5W Failure mode	2×21W+5W Turning Mode 2×(2×21W+5W) Hazard warning mode 21W+5W Failure mode
Norminal Voltage	12VDC,24VDC	12VDC
Flash Frequency	(6～110)ops/min	(6～110)ops/min
Lamp Failure Flash Frequency	(140～230)ops/min	(140～230)ops/min
Duty cycle	30%～70%	30%～70%
Electrical Endurance	12V:1000h(Turning15s on / 15s off) 360h(hazard warning continuously) 24V:400h(Turning15s on / 15s off) 200h(hazard warning continuously)	1000h(Turning15s on / 15s off) 360h(hazard warning continuously)
Ambient temperature	-40℃～85℃	-40℃～85℃
Terminal Layout (Bottom View) (mm)		
Wiring Diagram (Bottom View)		
Weight (Approximately)	40g	30g
Page	**221**	**221**

HRA

SIGNAL RELAY

Features

- Microminiature relay
  Dimensions: 10.2×7.4×10.0 (mm)
- Light weight
- Contact: 1 Form C (SPDT)

Safety Approval

NO.1063017 c US NO.E164730

Relay Picture

ORDERING INFORMATION

HRA [H] - [S] - [DC12V]

Model	Coil Sensitivity	Enclosure	Coil Voltage
	H - High Sensitivity (330mW) Blank - Standard (450mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V DC9V, DC12V, DC24V

Remarks: 1. Available in 1 Form C only
2. HRAH-S-DC24V: Coil Power 380mW

SPECIFICATION

CONTACT DATA

Contact Form		1 Form C
Contact Material		AuAg overlay
Contact Rating		1A 120VAC/24VDC
Contact Resistance		Max. 50mΩ (6VDC 0.1A)
Load	Max. Switching Voltage	120VAC/30VDC
	Max. Switching Current	2A
	Max. Switching Power	120VA, 30W
	Min. Switching Load	5VDC, 10mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	330mW, 450mW

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	500VAC, 1min
	Between coil and contacts	500VAC, 1min
Operate Time		Max. 6ms
Release Time		Max. 4ms
Operating Temperature		-25℃ to +70℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 1.7g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	C	0.45W/0.33W	3-24VDC	1A 120VAC/24VDC	Ambient Temperature: 40℃
CSA 1063017(LR 106040)	C	0.45W/0.33W	3-24VDC	1A 120VAC/24VDC	Ambient Temperature: normal

Specifications subject to change without notice

HRA

SIGNAL RELAY

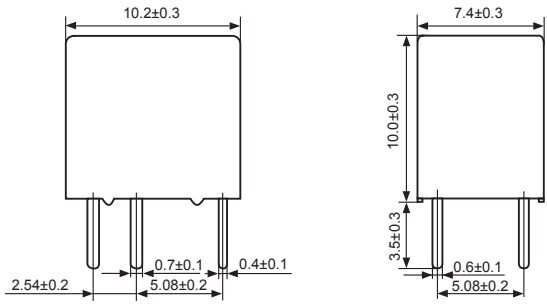
COIL DATA

Ambient Temperature: 23℃

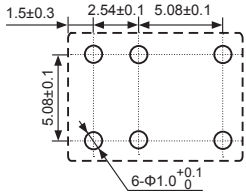
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRA-S-DC3V	3	20	2.1	0.3	450
HRA-S-DC5V	5	55	3.5	0.5	
HRA-S-DC6V	6	80	4.2	0.6	
HRA-S-DC9V	9	180	6.3	0.9	
HRA-S-DC12V	12	320	8.4	1.2	
HRA-S-DC24V	24	1280	16.8	2.4	
HRAH-S-DC3V	3	28	2.1	0.3	330
HRAH-S-DC5V	5	75	3.5	0.5	
HRAH-S-DC6V	6	110	4.2	0.6	
HRAH-S-DC9V	9	245	6.3	0.9	
HRAH-S-DC12V	12	440	8.4	1.2	
HRAH-S-DC24V	24	1515	16.8	2.4	380

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

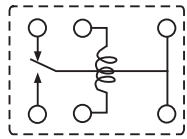
Outline



Mounting Hole Layout
(Bottom View)

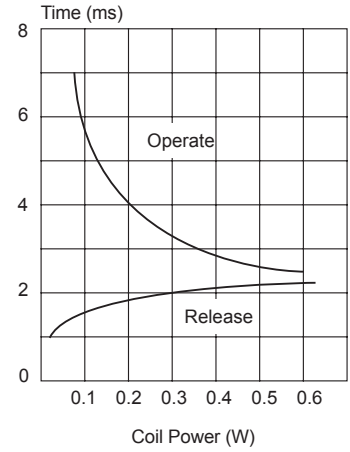


Wiring Diagram
(Bottom View)

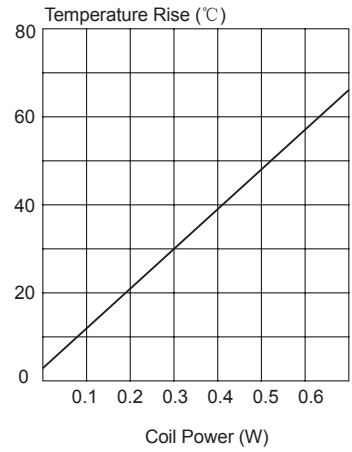


REFERENCE DATA

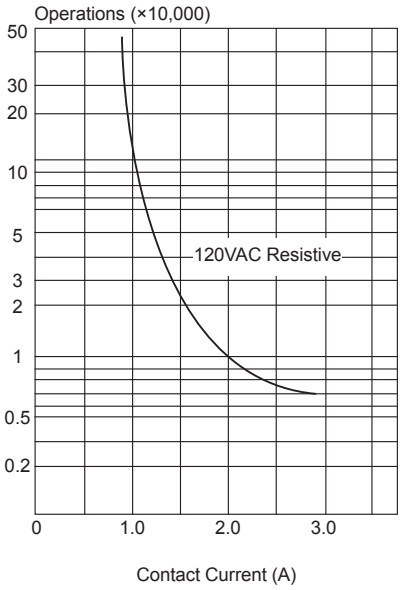
Time Curve



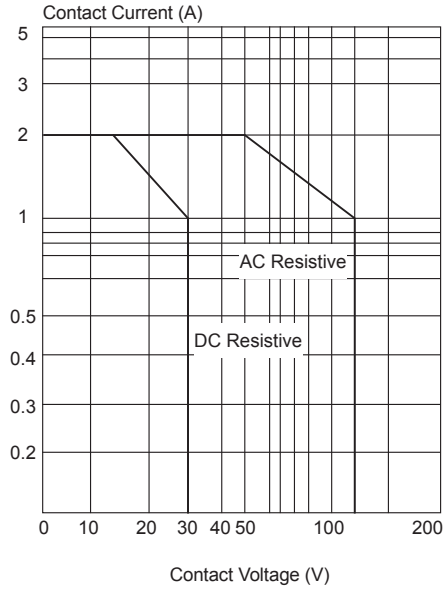
Coil Temperature Rise



Life Curve



Maximum Switching Power



HRB1

SIGNAL RELAY

Features

- Microminiature relay
  Dimensions: 12.3×7.3×10.2 (mm)
- Light weight
- Contact: 1 Form C
- High sensitivity 150mW

Safety Approval

NO.1369391 cUL us NO.E164730

Relay Picture

ORDERING INFORMATION

HRB1 – S – DC12V

Model	Enclosure	Coil Voltage
	S - Plastic Sealed Type	DC3V, DC5V, DC6V DC9V, DC12V, DC24V

Remarks: 1. Available in 1 Form C only
2. HRB1-S-DC(3-12)V Coil Power: 150mW, HRB1-S-DC24V Coil Power: 175mW

SPECIFICATION

CONTACT DATA

Contact Form		1 Form C
Contact Material		AuAg overlay
Contact Rating		1A 125VAC/24VDC 2A 125VAC/24VDC
Contact Resistance		Max. 50mΩ (6VDC 0.1A)
Load	Max. Switching Voltage	125VAC/30VDC
	Max. Switching Current	2A
	Max. Switching Power	250VA, 48W
	Min. Switching Load	5VDC, 10mA
Life	Electrical	100,000 operations
	Mechanical	5,000,000 operations

COIL DATA

Nominal Coil Power	150mW

GENERAL DATA

Insulation Resistance		Min. 1,000MΩ 500VDC
Dielectric Strength	Between open contacts	500VAC, 1min
	Between coil and contacts	1,000VAC, 1min
Operate Time		Max. 5ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +70℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 2.2g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	C	0.15W	3-24VDC	1A 125VAC/24VDC	Ambient Temperature: 70℃
	C	0.15W	3-24VDC	2A 125VAC/24VDC	Ambient Temperature: 70℃
CSA 1369391(LR 109368)	C	0.15W	3-24VDC	1A 125VAC/24VDC	Ambient Temperature: normal

Specifications subject to change without notice

HRB1

SIGNAL RELAY

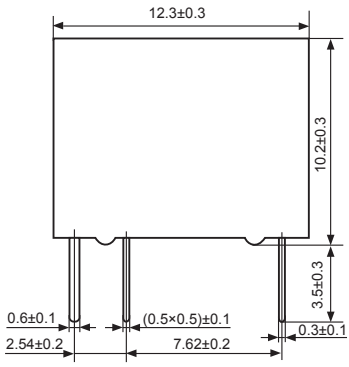
COIL DATA

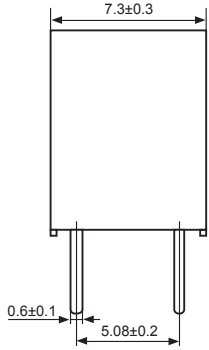
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRB1-S-DC3V	3	60	2.25	0.30	150
HRB1-S-DC5V	5	167	3.75	0.50	
HRB1-S-DC6V	6	240	4.5	0.60	
HRB1-S-DC9V	9	540	6.75	0.90	
HRB1-S-DC12V	12	960	9.0	1.20	
HRB1-S-DC24V	24	3291	18.0	2.40	175

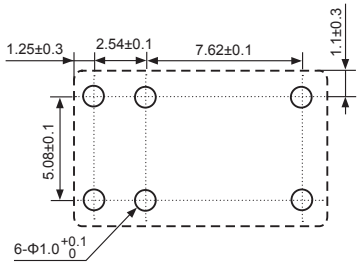
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline

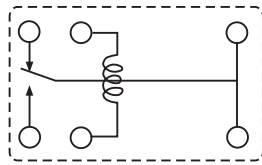




Mounting Hole Layout
(Bottom View)

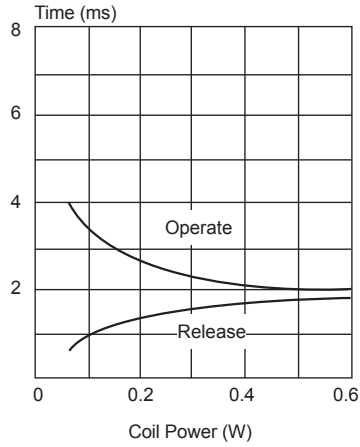


Wiring Diagram
(Bottom View)

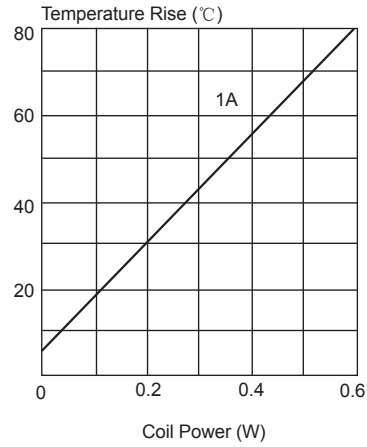


REFERENCE DATA

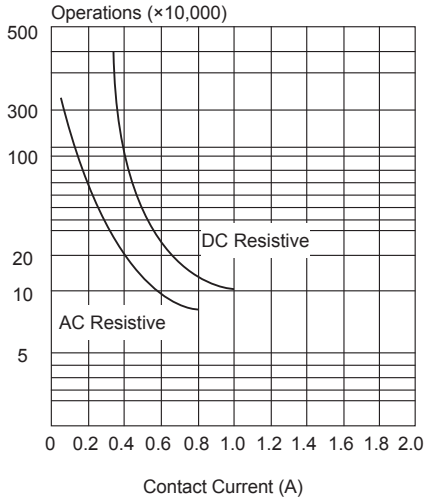
Time Curve



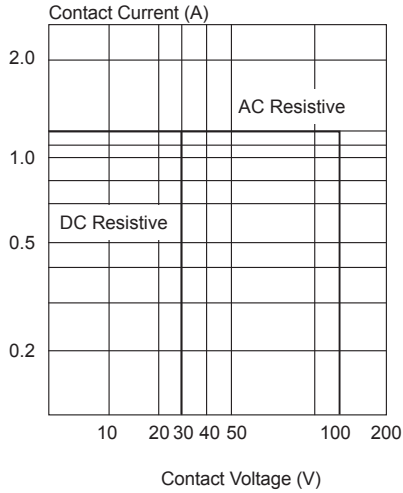
Coil Temperature Rise



Life Curves



Maximum Switching Power



HRS1

SIGNAL RELAY

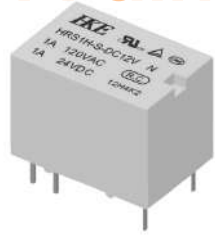
Features

- Microminiature relay
  Dimensions: 15.6×10.6×11.8 (mm)
- High sensitivity
- Contact: 1 Form C
- Max. Switching capacity 3A

Safety Approval

cULus NO.E164730 CQC NO.CQC12002086133
NO.50103498

Relay Picture



ORDERING INFORMATION

HRS1 [H] - [S] - [DC12V]

Model	Coil Sensitivity	Enclosure	Coil Voltage
	H - High Sensitivity (200mW) Blank - Standard (360mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V DC9V, DC12V, DC24V

Remarks: 1. Available in 1 Form C only 2. Contact rating: 1A, 3A

SPECIFICATION

CONTACT DATA

Contact Form		1 Form C
Contact Material		AuAg overlay
Contact Rating		1A 120VAC/24VDC 3A 120VAC/24VDC
Contact Resistance		Max. 50mΩ (6VDC 0.1A)
Load	Max. Switching Voltage	220VAC/30VDC
	Max. Switching Current	3A
	Max. Switching Power	360VA, 72W
	Min. Switching Load	5VDC, 10mA
Life	Electrical	100,000 operations (1A 120VAC/24VDC) 50,000 operations (3A 120VAC/24VDC)
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW, 360mW

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1min
	Between coil and contacts	1,000VAC, 1min
Operate Time		Max. 5ms
Release Time		Max. 5ms
Operating Temperature		-25℃ to +70℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 4.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	C	0.20W/0.36W	3-24VDC	1A 120VAC/24VDC	–
				3A 120VAC/24VDC	
TUV 50103498	C	0.20W/0.36W	3-24VDC	1A 120VAC/24VDC	Ambient Temperature: 70℃
				3A 250VAC	Ambient Temperature: -25℃～25℃
CQC 12002086133	C	0.20W/0.36W	3-24VDC	1A 120VAC	Ambient Temperature: -40℃～70℃
				3A 250VAC/24VDC	Ambient Temperature: -25℃～25℃

Specifications subject to change without notice

HRS1

SIGNAL RELAY

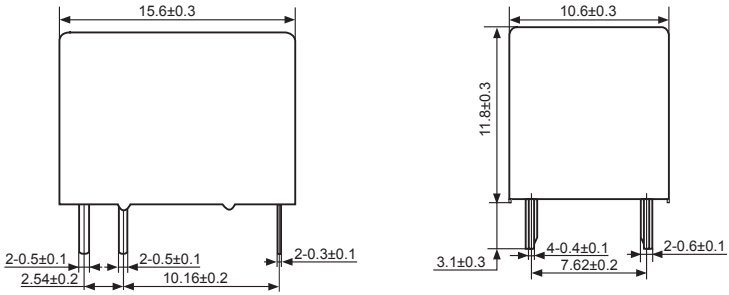
COIL DATA

Ambient Temperature: 23℃

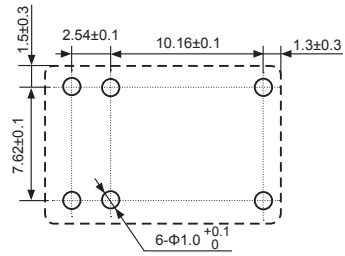
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS1-S-DC3V	3	25	2.1	0.3	360
HRS1-S-DC5V	5	70	3.5	0.5	
HRS1-S-DC6V	6	100	4.2	0.6	
HRS1-S-DC9V	9	225	6.3	0.9	
HRS1-S-DC12V	12	400	8.4	1.2	
HRS1-S-DC24V	24	1600	16.8	2.4	
HRS1H-S-DC3V	3	45	2.25	0.3	200
HRS1H-S-DC5V	5	125	3.75	0.5	
HRS1H-S-DC6V	6	180	4.5	0.6	
HRS1H-S-DC9V	9	405	6.75	0.9	
HRS1H-S-DC12V	12	720	9.0	1.2	
HRS1H-S-DC24V	24	2880	18.0	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

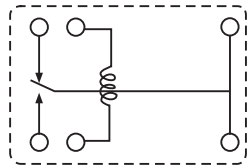
Outline



Mounting Hole Layout
(Bottom View)

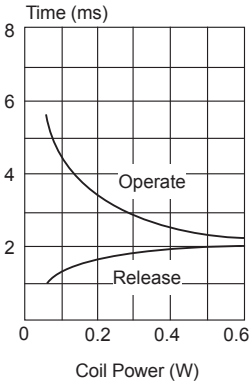


Wiring Diagram
(Bottom View)

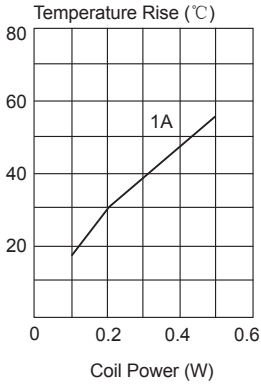


REFERENCE DATA

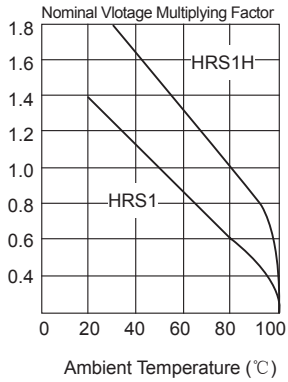
Time Curve



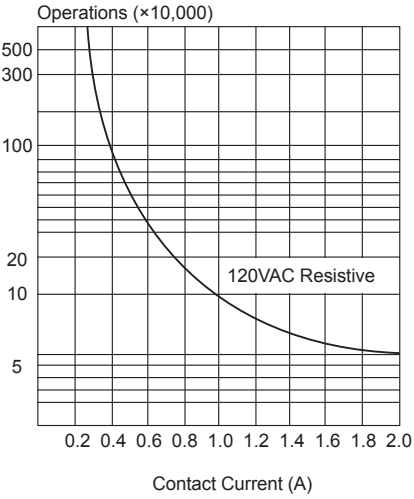
Coil Temperature Rise



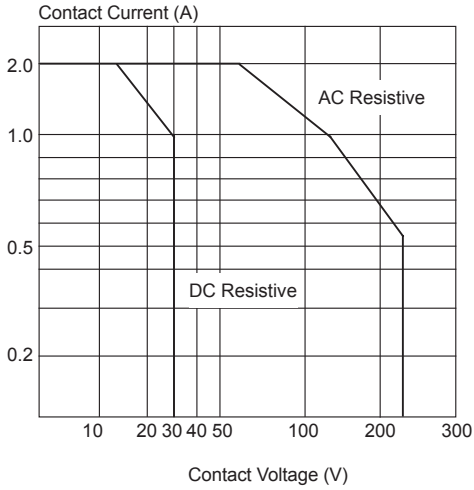
Operate Range



Life Curve



Maximum Switching Power



HRS1K

SIGNAL RELAY

Features

- Microminiature relay
  Dimensions: 15.6×10.6×11.8 (mm)
- High sensitivity
- Contact: 1 Form C
- Dielectric strength of 2500V between coil and contacts

Safety Approval

cULus NO.E164730 cqc NO.CQC12002086133
NO.R 50103498

Relay Picture

ORDERING INFORMATION

HRS1K [H] - [S] - [DC12V] [E]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Dielectric Strength
	H - High Sensitivity (200mW) Blank - Standard (360mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V DC9V, DC12V, DC24V	E - 2,500VAC/1min between coil and contacts Blank - 1,500VAC/1min between coil and contacts

Remarks: 1. Available in 1 Form C only 2. Contact rating: 1A, 3A

SPECIFICATION

CONTACT DATA

Contact Form		1 Form C
Contact Material		AuAg overlay
Contact Rating		1A 120VAC/24VDC 3A 120VAC/24VDC
Contact Resistance		Max. 50mΩ (6VDC 0.1A)
Load	Max. Switching Voltage	220VAC/30VDC
	Max. Switching Current	3A
	Max. Switching Power	360VA, 72W
	Min. Switching Load	5VDC, 10mA
Life	Electrical	100,000 operations (1A 120VAC/24VDC) 50,000 operations (3A 120VAC/24VDC)
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW, 360mW

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1min
	Between coil and contacts	Standard: 1,500VAC, 1 min E: 2,500VAC, 1 min
Operate Time		Max. 5ms
Release Time		Max. 5ms
Operating Temperature		-25℃ to +70℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 4.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	C	0.20W/0.36W	3-24VDC	1A 120VAC/24VDC	Ambient Temperature: 70℃
TUV R 50103498	C	0.20W/0.36W	3-24VDC	1A 120VAC/24VDC	Ambient Temperature: 70℃
				3A 250VAC	Ambient Temperature: -25℃～25℃
CQC 12002086133	C	0.20W/0.36W	3-24VDC	1A 120VAC	Ambient Temperature: -40℃～70℃

Specifications subject to change without notice

HRS1K

SIGNAL RELAY

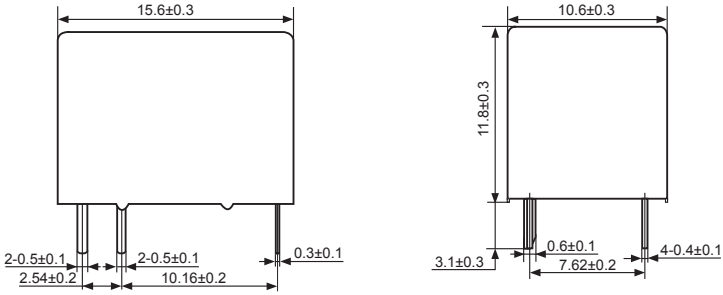
COIL DATA

Ambient Temperature: 23℃

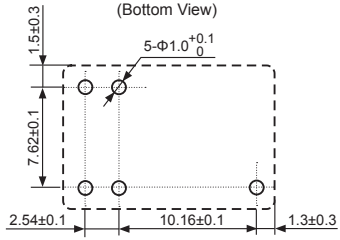
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS1K-S-DC3V	3	25	2.1	0.3	360
HRS1K-S-DC5V	5	70	3.5	0.5	
HRS1K-S-DC6V	6	100	4.2	0.6	
HRS1K-S-DC9V	9	225	6.3	0.9	
HRS1K-S-DC12V	12	400	8.4	1.2	
HRS1K-S-DC24V	24	1600	16.8	2.4	
HRS1KH-S-DC3V	3	45	2.25	0.3	200
HRS1KH-S-DC5V	5	125	3.75	0.5	
HRS1KH-S-DC6V	6	180	4.5	0.6	
HRS1KH-S-DC9V	9	405	6.75	0.9	
HRS1KH-S-DC12V	12	720	9.0	1.2	
HRS1KH-S-DC24V	24	2880	18.0	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

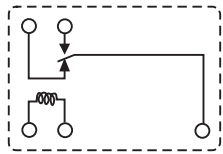
Outline



Mounting Hole Layout
(Bottom View)

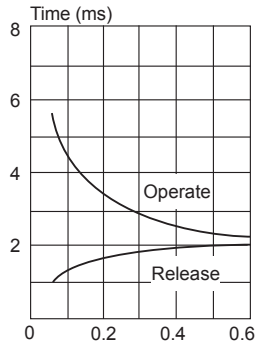


Wiring Diagram
(Bottom View)

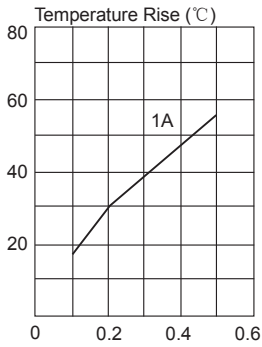


REFERENCE DATA

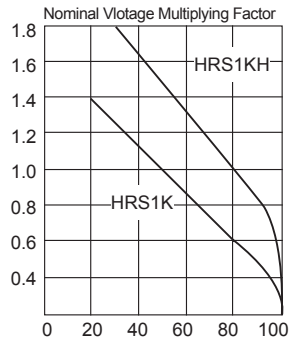
Time Curve



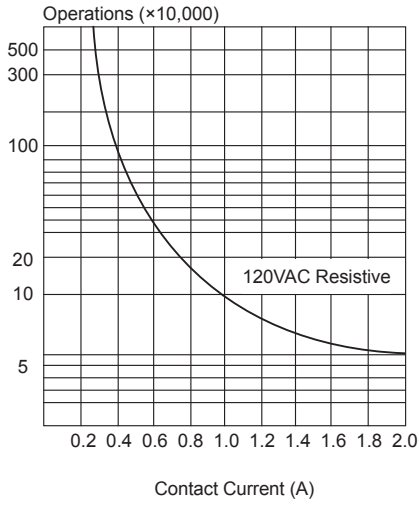
Coil Temperature Rise



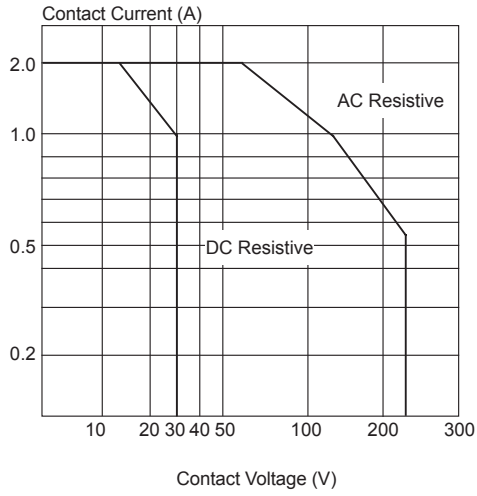
Operate Range



Life Curve



Maximum Switching Power



HRS2H

SIGNAL RELAY

Features

- Microminiature relay
  Dimensions: 20.3×9.9×11.4 (mm)
- High sensitivity
- 2 Form C contacts(DPDT)

Safety Approval

cULus NO.E164730 cqc NO.CQC13002092811

NO.50097843

Relay Picture

ORDERING INFORMATION

HRS2H – [S] – [DC12V] – [T]

Model	Enclosure	Coil Voltage	Coil Sensitivity
	S - Plastic Sealed Type	DC3V, DC5V, DC6V DC9V, DC12V, DC24V	Blank: 450mW T - High Sensitivity (150mW) N - Sensitivity (200mW) B - Standard 360mW (48VDC：400mW)

Remarks: 1. Available in 2 Form C only 2. Contact rating: 1A, 2A

SPECIFICATION

CONTACT DATA

Contact Form		2 Form C
Contact Material		AuAg overlay
Contact Rating		1A 120VAC/24VDC 2A 120VAC/24VDC
Contact Resistance		Max. 50mΩ (6VDC 0.1A)
Load	Max. Switching Voltage	125VAC/30VDC
	Max. Switching Current	2A
	Max. Switching Power	240VA, 48W
	Min. Switching Load	5VDC, 10mA
Life	Electrical	100,000 operations
	Mechanical	15,000,000 operations

COIL DATA

Nominal Coil Power	150mW, 200mW, 360mW, 450mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	500VAC, 1min
	Between coil and contacts	1,000VAC, 1min
Operate Time		Max. 7ms
Release Time		Max. 3ms
Operating Temperature		-25℃ to +70℃
Humidity		35～95%RH, +40℃
Surge Strength		1,500VAC, 10x160 μs
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 5.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	C	0.15W/0.20W/0.36W	3-48VDC	1A 120VAC/24VDC 2A 120VAC/24VDC	Ambient Temperature: 85℃
	C	0.45W	3-48VDC	1A 120VAC/24VDC	
TUV 50097843	C	0.15W/0.20W	3-24VDC	1A 120VAC/24VDC	Ambient Temperature: 70℃
	C	0.40W/0.45W	48VDC	1A 120VAC/24VDC	
CQC 13002092811	C	0.15W/0.20W	3-24VDC	1A 120VAC/24VDC	Ambient Temperature: 70℃

Specifications subject to change without notice

ISO9001、ISO/TS16949、ISO14001 Approved

HRS2H

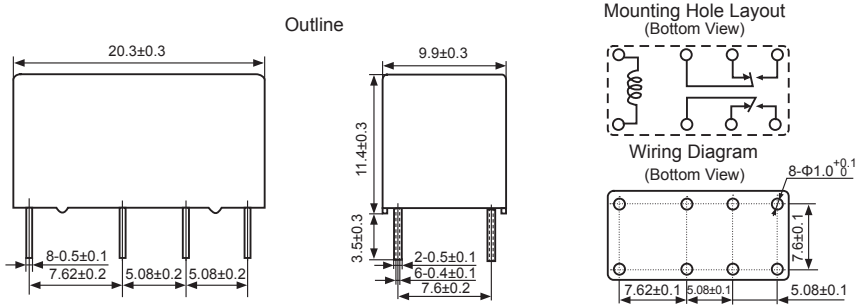
SIGNAL RELAY

COIL DATA

Ambient Temperature: 23℃

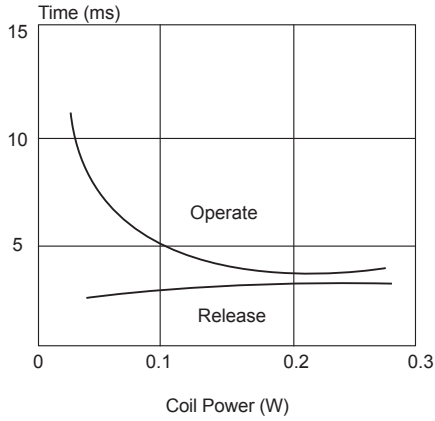
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS2H-S-DC3V-N	3	45	2.25	0.3	200
HRS2H-S-DC5V-N	5	125	3.75	0.5	
HRS2H-S-DC6V-N	6	180	4.5	0.6	
HRS2H-S-DC9V-N	9	405	6.75	0.9	
HRS2H-S-DC12V-N	12	720	9.0	1.2	
HRS2H-S-DC24V-N	24	2880	18.0	2.4	
HRS2H-S-DC3V-T	3	60	2.25	0.3	150
HRS2H-S-DC5V-T	5	166	3.75	0.5	
HRS2H-S-DC6V-T	6	240	4.5	0.6	
HRS2H-S-DC9V-T	9	540	6.75	0.9	
HRS2H-S-DC12V-T	12	960	9.0	1.2	
HRS2H-S-DC24V-T	24	3840	18.0	2.4	
HRS2H-S-DC3V-B	3	25	2.25	0.3	360
HRS2H-S-DC5V-B	5	69.4	3.75	0.5	
HRS2H-S-DC6V-B	6	100	4.5	0.6	
HRS2H-S-DC9V-B	9	225	6.75	0.9	
HRS2H-S-DC12V-B	12	400	9.0	1.2	
HRS2H-S-DC24V-B	24	1600	18.0	2.4	
HRS2H-S-DC48V-B	48	5760	36.0	4.8	400
HRS2H-S-DC3V	3	20	2.25	0.3	450
HRS2H-S-DC5V	5	55.6	3.75	0.5	
HRS2H-S-DC6V	6	80	4.5	0.6	
HRS2H-S-DC9V	9	180	6.75	0.9	
HRS2H-S-DC12V	12	320	9.0	1.2	
HRS2H-S-DC24V	24	1280	18.0	2.4	
HRS2H-S-DC48V	48	5120	36.0	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

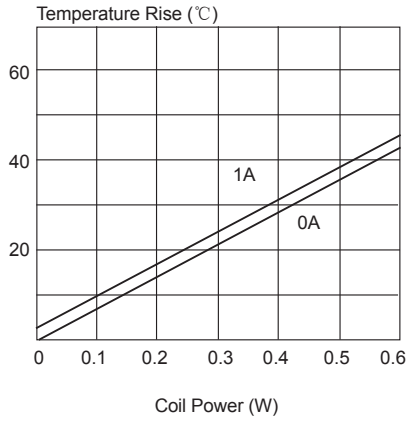


REFERENCE DATA

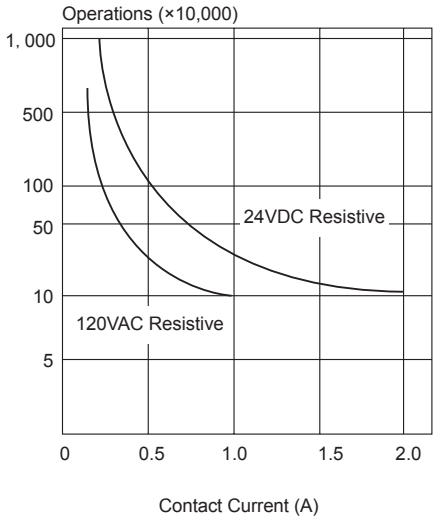
Time Curve



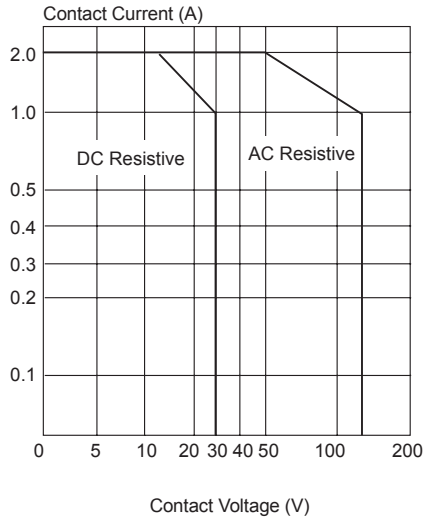
Coil Temperature Rise



Life Curves



Maximum Switching Power



HRS1KH3

POWER RELAY

Features

- Microminiature relay
  Dimensions: 15.6×10.6×11.8 (mm)
- High sensitivity: 200mW
- Contact: 1 Form A
- Switching capacity 3A

Safety Approval

NO.1426410 NO.CQC12002086133

NO.E164730

Relay Picture

ORDERING INFORMATION

HRS1KH3 - [S] - [DC12V]

Model	Enclosure	Coil Voltage
	S - Plastic Sealed Type	DC3V, DC5V, DC6V DC9V, DC12V, DC24V

Remarks: 1. Available in 1 Form A only 2. Coil Power 200mW

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		3A 220VAC/30VDC
Contact Resistance		Max. 50mΩ (6VDC 1A)
Load	Max. Switching Voltage	220VAC/30VDC
	Max. Switching Current	3A
	Max. Switching Power	660VA, 90W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1min
	Between coil and contacts	1,000VAC, 1min
Operate Time		Max. 6ms
Release Time		Max. 5ms
Operating Temperature		-25℃ to +70℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 4.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating
UL E164730	A	0.2W	3-24VDC	3A 220VAC/30VDC
CSA 1426410	A	0.2W	3-24VDC	3A 220VAC/30VDC
CQC 12002086133	A	0.2W	3-24VDC	3A 220VAC

Specifications subject to change without notice

HRS1KH3

POWER RELAY

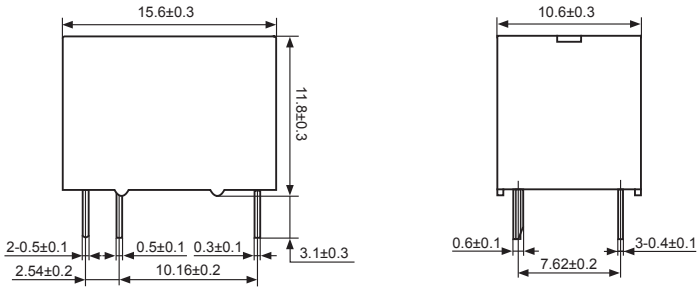
COIL DATA

Ambient Temperature: 23℃

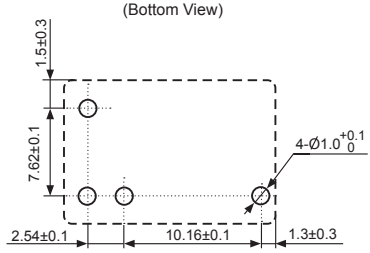
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS1KH3-S-DC3V	3	45	2.25	0.30	200
HRS1KH3-S-DC5V	5	125	3.75	0.50	
HRS1KH3-S-DC6V	6	180	4.5	0.60	
HRS1KH3-S-DC9V	9	405	6.75	0.90	
HRS1KH3-S-DC12V	12	720	9.0	1.20	
HRS1KH3-S-DC24V	24	2880	18.0	2.40	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

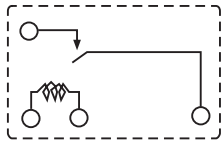
Outline



Mounting Hole Layout
(Bottom View)

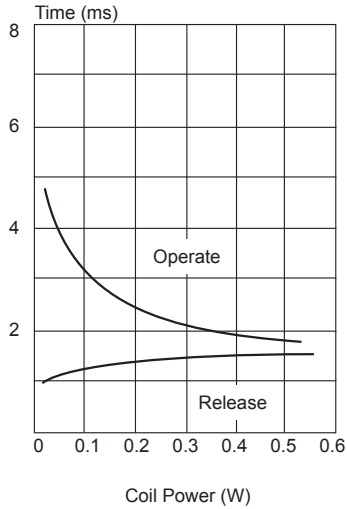


Wiring Diagram
(Bottom View)

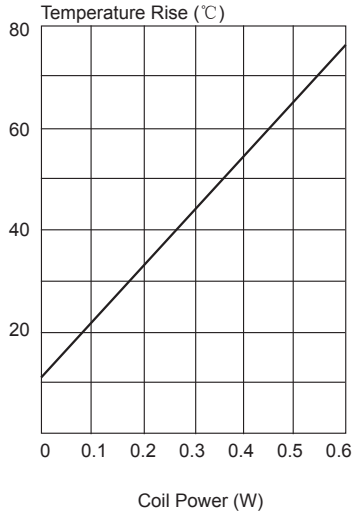


REFERENCE DATA

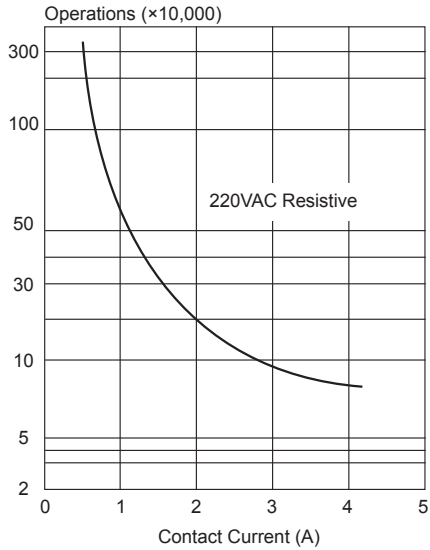
Time Curve



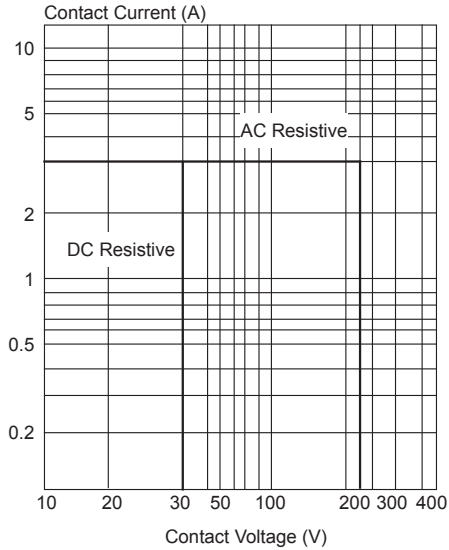
Coil Temperature Rise



Life Curve



Maximum Switching Power



HRS3

POWER RELAY

Features

- Microminiature relay
  Dimensions: 18.6×10.4×15.8(mm)
- Max.Switching capacity: 10A
- Contact: 1 Form A, 1 Form C

Safety Approval

NO.1063016(LR 109368) NO.50116132

c US NO.E164730 NO.E322395

NO.CQC08002027611

Relay Picture

ORDERING INFORMATION

HRS3 [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (200mW) Blank - Standard (450mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V DC9V, DC12V, DC24V	A - 1 Form A C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		A: 10A 125VAC, 5A 250VAC/28VDC C: NO/NC: 5A/3A 250VAC/28VDC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/28VDC
	Max. Switching Current	10A
	Max. Switching Power	1,250VA, 280W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW, 450mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	A: 3,500VAC, 1 min C: 2,500VAC, 1 min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 6.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
TUV 50116132	A/C	0.45W/0.2W	3-24VDC	NO/NC:5/3A 250VAC	Ambient Temperature: 85℃
	A	0.45W/0.2W	3-24VDC	5(1)A 250VAC	Ambient Temperature: 85℃
	A	0.45W/0.2W	3-24VDC	5(2.5)A 250VAC	Ambient Temperature: 85℃
CQC 08002027611 (GB/T 21711.1-2008)	A	0.45W/0.2W	3-24VDC	5A 250VAC	Ambient Temperature: 85℃
	C	0.45W/0.2W	3-24VDC	NO/NC: 5/3A 250VAC	Ambient Temperature: 85℃

HRS3

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.45W/0.2W	3-24VDC	10A 28VDC	Ambient Temperature: 80℃
	A	0.45W/0.2W	3-24VDC	Tungsten filament lamp load: 8A 125VAC	Ambient Temperature: 80℃
	A	0.45W	3-24VDC	10A 125VAC	Ambient Temperature: 70℃
				5A 250VAC	Ambient Temperature: 70℃
				10A 277VAC	—
	C	0.45W	3-24VDC	NO/NC:10/3A 125VAC	Ambient Temperature: 70℃
				NO/NC:5/3A 250VAC	
UL E322395	A	0.45W	3-24VDC	1/10HP 120VAC	NLDX Category (N.O.Contact side)
				1/6HP 240VAC	
CSA 1063016(LR 109368)	A	0.45W/0.2W	3-24VDC	10A 28VDC	—
Explosion-proof Certificate CNEx16.3130U	A	0.45W	12VDC	5A 250VAC	Mark: Ex nC IIC Gc
				10A 125VAC	

Specifications subject to change without notice

COIL DATA

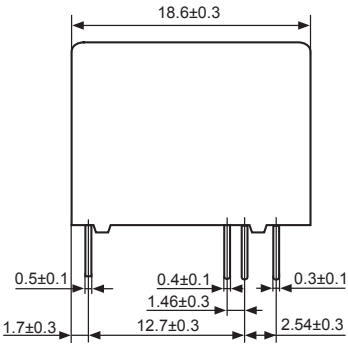
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC		Release Voltage ≥VDC	Coil Power mW
			A	C		
HRS3-S-DC3V	3	20	2.1	2.1	0.3	450
HRS3-S-DC5V	5	55	3.5	3.5	0.5	
HRS3-S-DC6V	6	80	4.2	4.2	0.6	
HRS3-S-DC9V	9	180	6.3	6.3	0.9	
HRS3-S-DC12V	12	320	8.4	8.4	1.2	
HRS3-S-DC24V	24	1280	16.8	16.8	2.4	
HRS3H-S-DC3V	3	45	2.1	2.25	0.3	200
HRS3H-S-DC5V	5	125	3.5	3.75	0.5	
HRS3H-S-DC6V	6	180	4.2	4.5	0.6	
HRS3H-S-DC9V	9	405	6.3	6.75	0.9	
HRS3H-S-DC12V	12	720	8.4	9.0	1.2	
HRS3H-S-DC24V	24	2880	16.8	18.0	2.4	

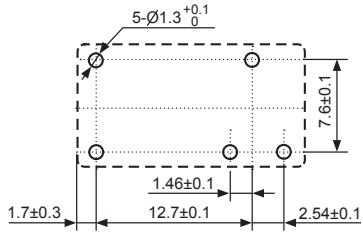
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form C

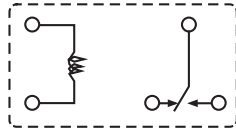
Outline



Mounting Hole Layout
(Bottom View)

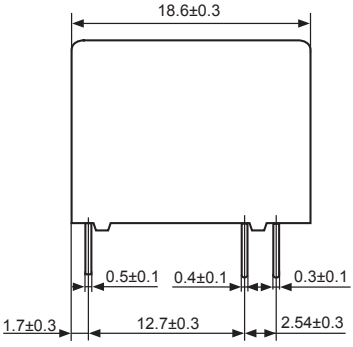


Wiring Diagram
(Bottom View)

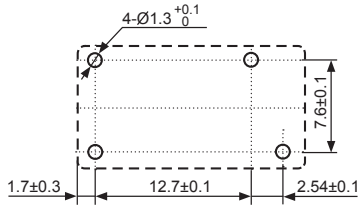


1 Form A

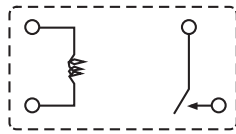
Outline



Mounting Hole Layout
(Bottom View)

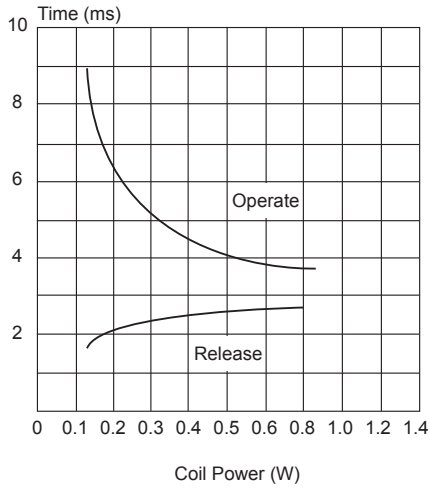


Wiring Diagram
(Bottom View)

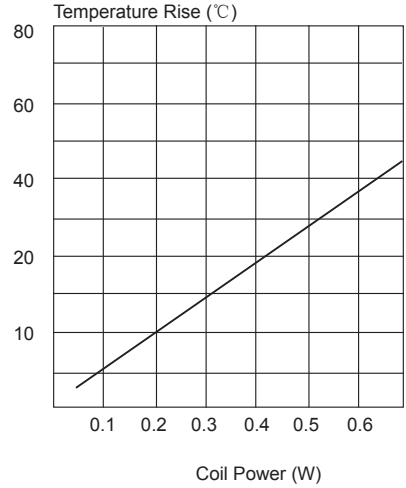


REFERENCE DATA

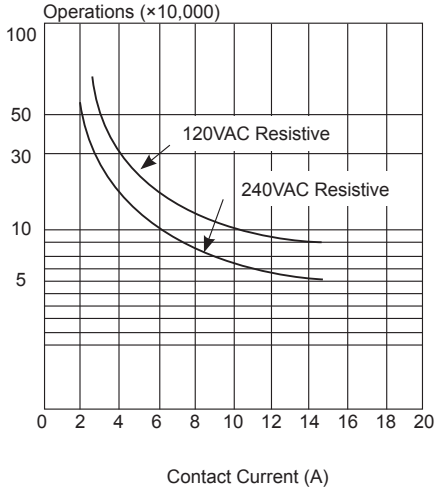
Time Curve



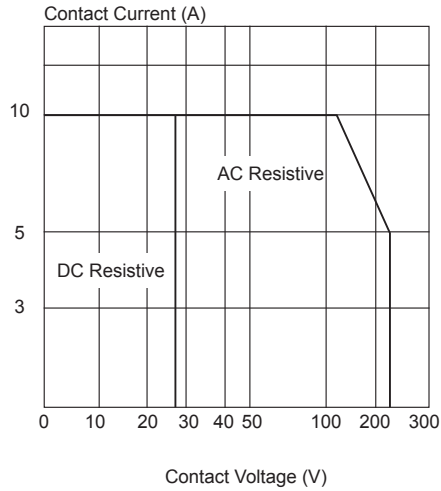
Coil Temperature Rise



Life Curves



Maximum Switching Power



HRS3F

POWER RELAY

Features

- Microminiature relay
  Dimensions: 18.2×10.2×15.5(mm)
- 5A switching capacity
- Contact: 1 Form A
- Reinforced insulation between coil and contact

Safety Approval

cqc NO.CQC12002076143

NO.50223752 c UL us NO.E164730

Relay Picture

ORDERING INFORMATION

HRS3F [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (200mW) Blank - Standard (450mW)	S - Plastic Sealed Type	DC5V, DC6V DC9V, DC12V, DC24V	A - 1 Form A

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		Resistive: 5A 250VAC/30VDC Horsepower: 1/3HP 240VAC(450mW) 1/4HP 240VAC
Contact Resistance		Max. 100mΩ(6VDC 1A)
Load	Max. Switching Voltage	277VAC/30VDC
	Max. Switching Current	5A
	Max. Switching Power	1250VA,150W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	1,000,000 operations

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 6.0g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	200mW, 450mW

HRS3F

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
TUV 50223752	A	0.45W/0.2W	3-24VDC	5A 250VAC	Class F Insulation Ambient Temperature: 85℃
CQC 12002076143	A	0.45W/0.2W	3-24VDC	5A 250VAC	Class F Insulation Ambient Temperature: 85℃
UL E164730	A	0.45W/0.2W	5-24VDC	5A 250VAC	Ambient Temperature: 85℃
				1/4HP 240VAC	Ambient Temperature: 65℃
		0.45W	5-24VDC	1/3HP 240VAC	Ambient Temperature: 65℃
Explosion-proof Certificate CNEx16.3129U	A	0.45W	12VDC	5A 250VAC	Mark: Ex nC IIC Gc

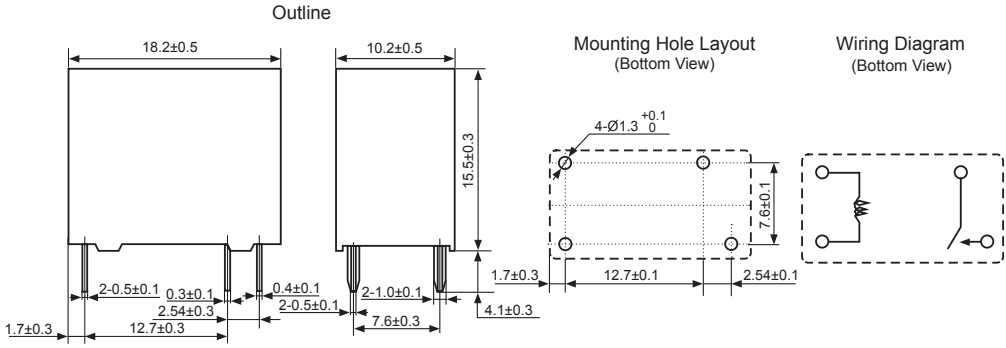
Specifications subject to change without notice

COIL DATA

Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS3F-S-DC5V-A	5	55.6	3.5	0.5	450
HRS3F-S-DC6V-A	6	80	4.2	0.6	
HRS3F-S-DC9V-A	9	180	6.3	0.9	
HRS3F-S-DC12V-A	12	320	8.4	1.2	
HRS3F-S-DC24V-A	24	1280	16.8	2.4	
HRS3FH-S-DC5V-A	5	125	3.75	0.5	200
HRS3FH-S-DC6V-A	6	180	4.5	0.6	
HRS3FH-S-DC9V-A	9	405	6.75	0.9	
HRS3FH-S-DC12V-A	12	720	9.0	1.2	
HRS3FH-S-DC24V-A	24	2880	18.0	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)



HRS3FN

POWER RELAY

Features

- Microminiature relay
  Dimensions: 18.2×10.2×15.5(mm)
- 10A switching capacity
- Contact: 1 Form A
- Reinforced insulation between coil and contact

Safety Approval

cqc NO.CQC12002076143

NO.50223752 c UL us NO.E164730

Relay Picture

ORDERING INFORMATION

HRS3FN [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (200mW) Blank - Standard (450mW)	S - Plastic Sealed Type	DC5V, DC6V DC9V, DC12V, DC24V	A - 1 Form A

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		Resistive: 10A 250VAC Horsepower: 1/3HP 240VAC(450mW) 1/4HP 240VAC(450mW)
Contact Resistance		Max. 100mΩ(6VDC 1A)
Load	Max. Switching Voltage	277VAC/30VDC
	Max. Switching Current	10A
	Max. Switching Power	2500VA,300W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	1,000,000 operations

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 6.0g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	200mW, 450mW

HRS3FN

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
TUV 50223752	A	0.45W/0.2W	3-24VDC	10A 250VAC	Class F Insulation Ambient Temperature: 85℃
CQC 12002076143	A	0.45W/0.2W	3-24VDC	10A 250VAC	Class F Insulation Ambient Temperature: 85℃
UL E164730	A	0.45W/0.2W	5-24VDC	10A 250VAC	Ambient Temperature: 85℃
		0.45W	5-24VDC	1/3HP 240VAC	Ambient Temperature: 65℃
		0.45W/0.2W	5-24VDC	1/4HP 240VAC	Ambient Temperature: 65℃
Explosion-proof Certificate CNEx16.3129U	A	0.45W	12VDC	10A 250VAC	Mark: Ex nC IIC Gc

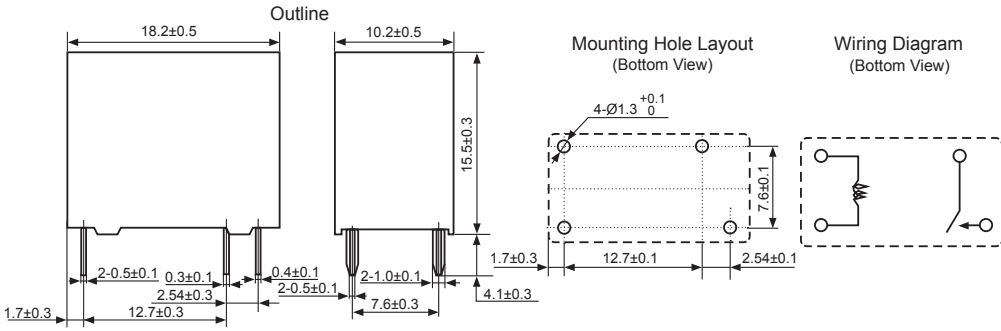
Specifications subject to change without notice

COIL DATA

Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS3FN-S-DC5V-A	5	55.6	3.5	0.5	450
HRS3FN-S-DC6V-A	6	80	4.2	0.6	
HRS3FN-S-DC9V-A	9	180	6.3	0.9	
HRS3FN-S-DC12V-A	12	320	8.4	1.2	
HRS3FN-S-DC24V-A	24	1280	16.8	2.4	
HRS3FNH-S-DC5V-A	5	125	3.75	0.5	200
HRS3FNH-S-DC6V-A	6	180	4.5	0.6	
HRS3FNH-S-DC9V-A	9	405	6.75	0.9	
HRS3FNH-S-DC12V-A	12	720	9.0	1.2	
HRS3FNH-S-DC24V-A	24	2880	18.0	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)



HRS3T

POWER RELAY

Features

- Microminiature relay
  Dimensions:20.9×10.2×15.5(mm)
- Max. Switching capacity: 10A
- Contact: 1 Form A, 1 Form C

Safety Approval

NO.50116134 cqc NO.CQC02001001297

c UL us NO.E164730

Relay Picture

ORDERING INFORMATION

HRS3T [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (200mW) Blank - Standard (450mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V, DC9V DC12V, DC24V, DC48V	A - 1 Form A C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		A: 5A 250VAC/28VDC C: NO/NC: 5A/3A 250VAC/28VDC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/28VDC
	Max. Switching Current	10A
	Max. Switching Power	1,250VA, 280W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW, 450mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	A: 3,500VAC, 1 min C: 2,500VAC, 1 min
Operate Time		Max. 8ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 7.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
TUV 50116134	A/C	0.45W/0.2W	3 - 48VDC	NO/NC: 5/3A 250VAC	Ambient Temperature: 85℃
	A	0.45W/0.2W	3 - 48VDC	5 (1) A 250VAC	Ambient Temperature: 85℃
				5 (2.5) A 250VAC	Ambient Temperature: 85℃
UL E164730	A/C	0.45W/0.2W	3 - 24VDC	NO/NC: 5/3A 250VAC	Class F Insulation Ambient Temperature: 85℃
CQC02001001297	C	0.45W/0.2W	3 - 48VDC	NO/NC: 5/3A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

HRS3T

POWER RELAY

COIL DATA

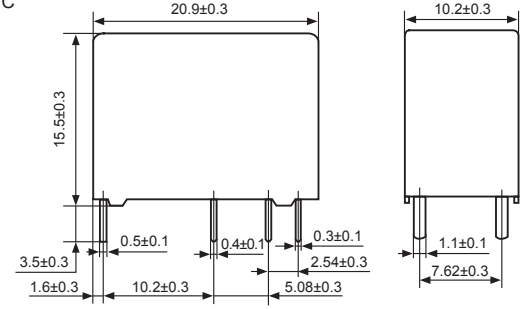
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS3T-S-DC3V	3	20	2.25	0.3	450
HRS3T-S-DC5V	5	55	3.75	0.5	
HRS3T-S-DC6V	6	80	4.5	0.6	
HRS3T-S-DC9V	9	180	6.75	0.9	
HRS3T-S-DC12V	12	320	9.0	1.2	
HRS3T-S-DC24V	24	1280	18.0	2.4	
HRS3T-S-DC48V	48	5120	36.0	4.8	
HRS3TH-S-DC3V	3	45	2.25	0.3	200
HRS3TH-S-DC5V	5	125	3.75	0.5	
HRS3TH-S-DC6V	6	180	4.5	0.6	
HRS3TH-S-DC9V	9	405	6.75	0.9	
HRS3TH-S-DC12V	12	720	9.0	1.2	
HRS3TH-S-DC24V	24	2880	18.0	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

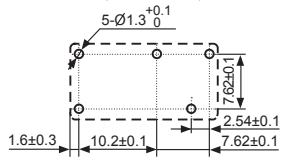
1 Form C

Outline



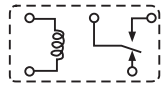
Mounting Hole Layout

(Bottom View)



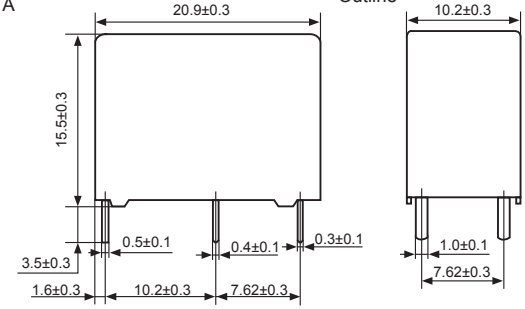
Wiring Diagram

(Bottom View)



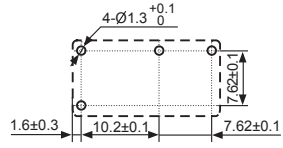
1 Form A

Outline



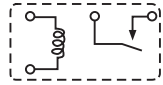
Mounting Hole Layout

(Bottom View)



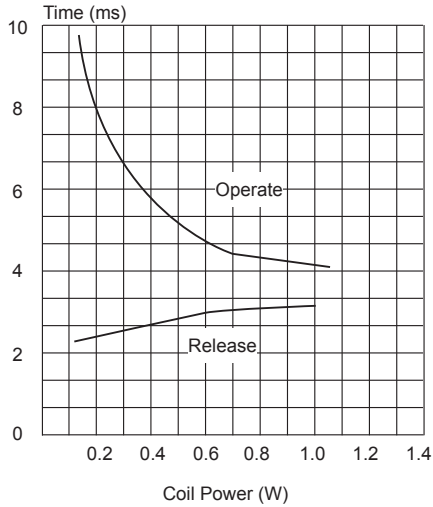
Wiring Diagram

(Bottom View)

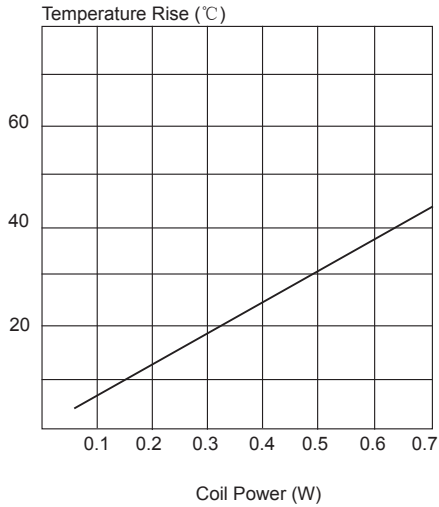


REFERENCE DATA

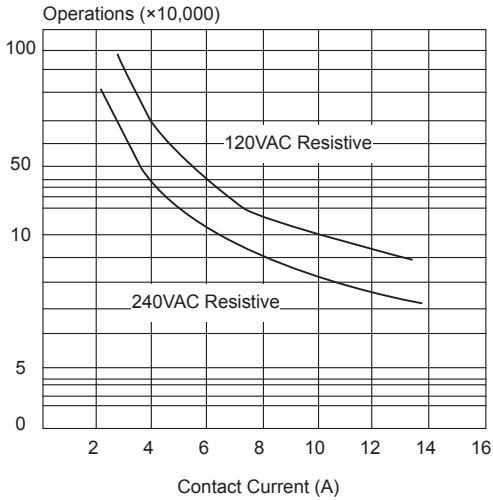
Time Curve



Coil Temperature Rise



Life Curves



AC5

POWER RELAY

Features

- Microminiature relay
  Dimensions: 20.4×7.0×15.4(mm)
- Slim type, 7mm width
  High mounting density
- High sensitivity 200mW

Safety Approval

NO.40024200 c UL us NO.E164730

cqc NO.CQC09002030809

Relay Picture

ORDERING INFORMATION

AC5 – S – DC12V

Model	Enclosure	Coil Voltage
	S - Plastic Sealed Type	DC5V, DC6V, DC9V DC12V, DC18V, DC24V

Remarks: 1.Available in 1 Form A only 2. Coil Power: 200mW

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		5A 250VAC
Contact Resistance		Max. 100mΩ (24VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	5A
	Max. Switching Power	1250VA, 150W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +85℃
Humidity		5～85%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 3.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.2W	3 - 24VDC	5A 250VAC	Ambient Temperature: 95℃
VDE 40024200	A	0.2W	3 - 24VDC	5A 250VAC	Ambient Temperature: 85℃
CQC 09002030809 (GB/T 21711.1-2008)	A	0.2W	3 - 24VDC	5A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

COIL DATA

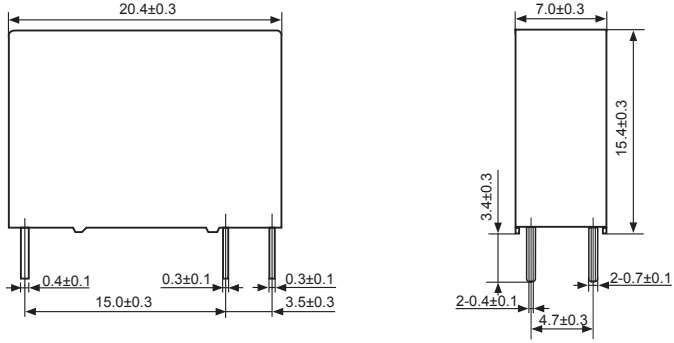
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
AC5-S-DC5V	5	125	3.75	0.5	200
AC5-S-DC6V	6	180	4.5	0.6	
AC5-S-DC9V	9	405	6.75	0.9	
AC5-S-DC12V	12	720	9.0	1.2	
AC5-S-DC18V	18	1620	13.5	1.8	
AC5-S-DC24V	24	2880	18.0	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

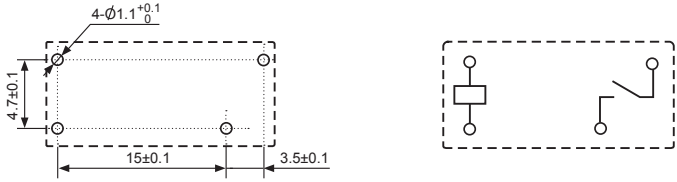
AC5

Outline



Mounting Hole Layout
(Bottom View)

Wiring Diagram
(Bottom View)



AC5N

POWER RELAY

Features

- Microminiature relay
  Dimensions: 20.4×7.0×15.4(mm)
- Slim type, 7mm width
  High mounting density
- High sensitivity 200mW

Safety Approval

NO.40024200 cULus NO.E164730

CQC NO.CQC09002030809

Relay Picture

ORDERING INFORMATION

AC5N – [S] – [DC12V]

Model	Enclosure	Coil Voltage
	S - Plastic Sealed Type	DC5V, DC6V, DC9V DC12V, DC18V, DC24V

Remarks: 1.Available in 1 Form A only 2. Coil Power: 200mW

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		5A 250VAC
Contact Resistance		Max. 100mΩ (24VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	5A
	Max. Switching Power	1250VA, 150W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +85℃
Humidity		5～85%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 3.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.2W	3 - 24VDC	5A 250VAC	Ambient Temperature: 95℃
VDE 40024200	A	0.2W	3 - 24VDC	5A 250VAC	Ambient Temperature: 85℃
CQC 09002030809 (GB/T 21711.1-2008)	A	0.2W	3 - 24VDC	5A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

AC5N

POWER RELAY

COIL DATA

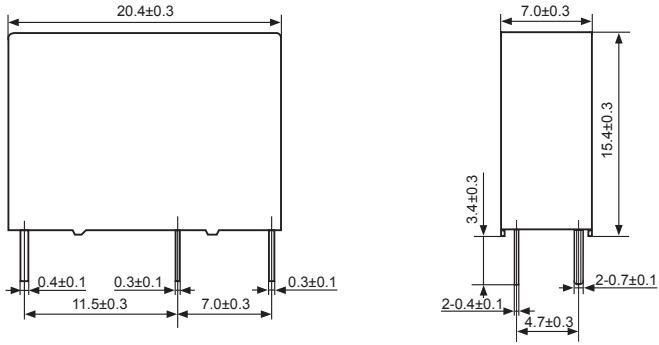
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
AC5N-S-DC5V	5	125	3.75	0.5	200
AC5N-S-DC6V	6	180	4.5	0.6	
AC5N-S-DC9V	9	405	6.75	0.9	
AC5N-S-DC12V	12	720	9.0	1.2	
AC5N-S-DC18V	18	1620	13.5	1.8	
AC5N-S-DC24V	24	2880	18.0	2.4	

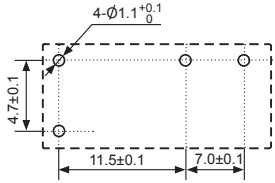
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

AC5N

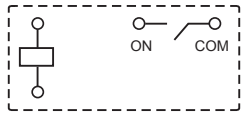
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



HRS4

POWER RELAY

Features

- Miniature relay
  Dimensions: 19.0×15.5×15.8(mm)
- Contact: 1 Form A, 1 Form B, 1 Form C
- TV-5 rating
- UL Class F insulation

Safety Approval

NO.1063016(LR 109368) NO.50116136
NO.E164730 NO.E322395 NO.CQC08002027614

Relay Picture

ORDERING INFORMATION

HRS4 [H] – [S] – [DC12V] – [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (360mW) Blank - Standard (450mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V, DC9V, DC12V, DC24V, DC48V	A - 1 Form A B - 1 Form B C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form B, 1 Form C
Contact Material		Ag Alloy
Contact Rating		A: 15A 125VAC, 10A 250VAC C: NO: 10A 250VAC/24VDC NC: 6A 250VAC/24VDC TV-5 125VAC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/28VDC
	Max. Switching Current	15A
	Max. Switching Power	2,500VA, 280W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1 min
	Between coil and contacts	1,500VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 10.0g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	360mW, 450mW

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CQC 08002027614 (GB/T 21711.1-2008)	A	0.36W/0.45W	3-48VDC	10A 250VAC	Ambient Temperature: 85℃
				15A 250VAC	Ambient Temperature: 65℃
				16A 250VAC	Ambient Temperature: 40℃
	B	0.36W/0.45W	3-48VDC	6A 250VAC	Ambient Temperature: 85℃
	C	0.36W/0.45W	3-48VDC	NO/NC:10A/6A 250VAC	Ambient Temperature: 85℃

ISO9001、ISO/TS16949、ISO14001 Approved

HRS4

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
TUV 50116136	A/B/C	0.36W/0.45W	3-48VDC	NO/NC:10A/6A 250VAC	Ambient Temperature: 105℃
TUV50116136 (EN 60730-1)				NO:10A(2)A 250VAC NC:6(1)A 250VAC	Ambient Temperature: 105℃
TUV 50116136-005	A	0.36W	3-48VDC	15A 250VAC	Ambient Temperature: 65℃
UL E164730	A	0.36W/0.45W	3-48VDC	15A 125VAC	Class F Insulation Ambient Temperature: 65℃
		0.36W	3-48VDC	16A 125VAC	Class F Insulation Ambient Temperature: 105℃
	C	0.36W/0.45W	3-48VDC	10A 120VAC/28VDC	Class F Insulation Ambient Temperature: 105℃
				10A 277VAC	Class F Insulation Ambient Temperature: 105℃
				TV-5 125VAC	Class F Insulation Ambient Temperature: 105℃
				10A 250VAC	Ambient Temperature: 105℃
UL E322395	A/C	0.36W/0.45W	3-48VDC	1/2HP 120VAC	NLDX Category (N.O.Contact side)
				1/2HP 240VAC	
CSA 1063016 (LR 109368)	A/C	0.36W/0.45W	3-48VDC	10A 120VAC/24VDC	—
Explosion-proof Certificate CNEx16.3131U	A	0.36W	12VDC	10A 250VAC	Mark: Ex nC IIC Gc

Specifications subject to change without notice

COIL DATA

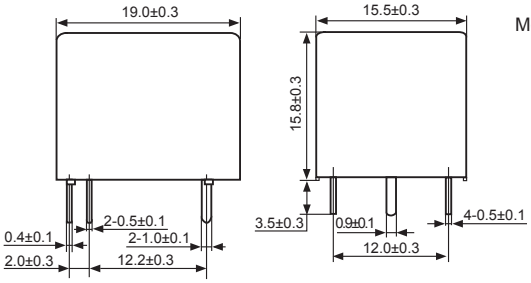
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS4-S-DC3V	3	20	2.1	0.3	450
HRS4-S-DC5V	5	55	3.5	0.5	
HRS4-S-DC6V	6	80	4.2	0.6	
HRS4-S-DC9V	9	180	6.3	0.9	
HRS4-S-DC12V	12	320	8.4	1.2	
HRS4-S-DC24V	24	1280	16.8	2.4	
HRS4-S-DC48V	48	5120	33.6	4.8	
HRS4H-S-DC3V	3	25	2.1	0.3	360
HRS4H-S-DC5V	5	70	3.5	0.5	
HRS4H-S-DC6V	6	100	4.2	0.6	
HRS4H-S-DC9V	9	225	6.3	0.9	
HRS4H-S-DC12V	12	400	8.4	1.2	
HRS4H-S-DC24V	24	1600	16.8	2.4	
HRS4H-S-DC48V	48	6400	33.6	4.8	

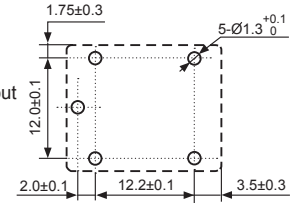
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form C

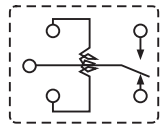
Outline



Mounting Hole Layout
(Bottom View)

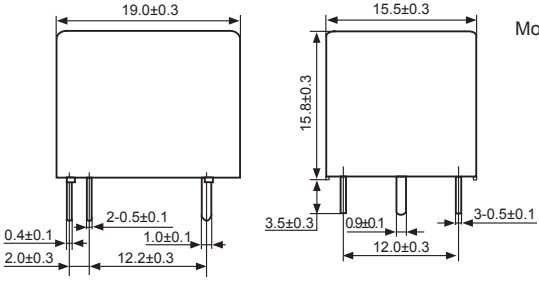


Wiring Diagram
(Bottom View)

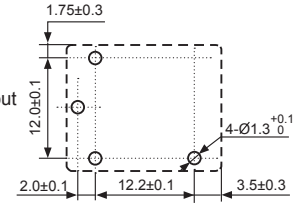


1 Form B

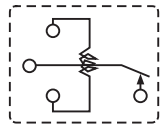
Outline



Mounting Hole Layout
(Bottom View)

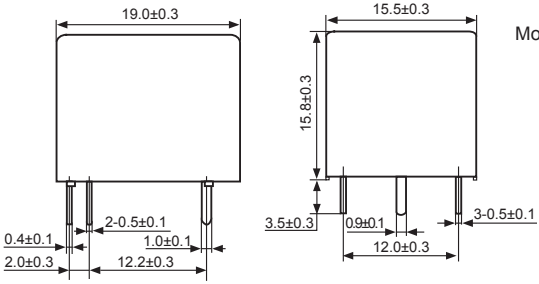


Wiring Diagram
(Bottom View)

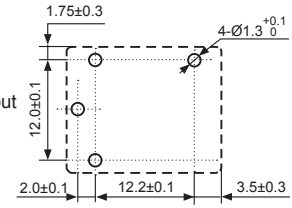


1 Form A

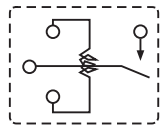
Outline



Mounting Hole Layout
(Bottom View)

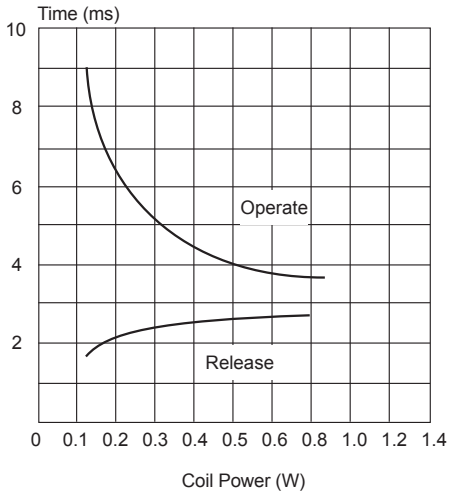


Wiring Diagram
(Bottom View)

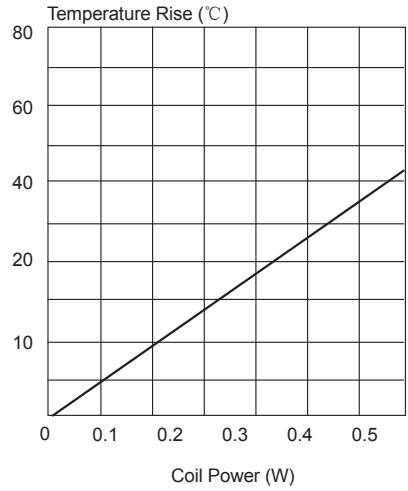


REFERENCE DATA

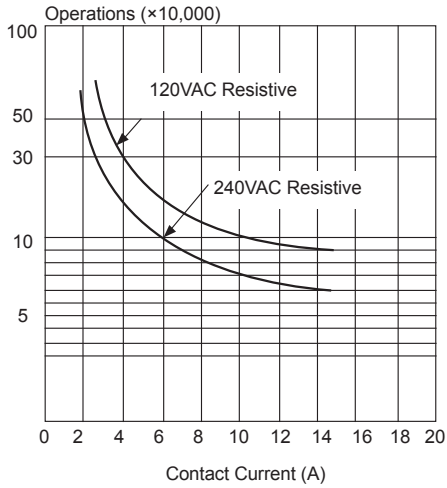
Time Curve



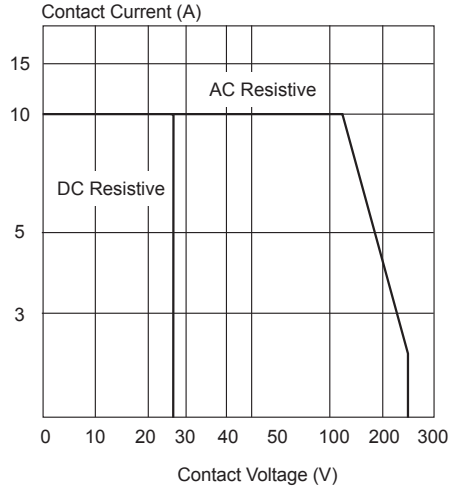
Coil Temperature Rise



Life Curves



Maximum Switching Power



HRS4F

POWER RELAY

Features

- Miniature relay
  Dimensions: 19.0×15.5×15.8(mm)
- Dielectric strength of 2500V
  between coil and contacts
- Contact: 1 Form A, 1 Form C

Safety Approval

NO.40025308 NO.CQC08002027614

NO.E164730

Relay Picture

ORDERING INFORMATION

HRS4F [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (360mW) Blank - Standard (450mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V, DC9V DC12V, DC24V, DC48V	A - 1 Form A C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		10A 250VAC/30VDC
Contact Resistance		Max. 100mΩ (24VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	10A
	Max. Switching Power	2500VA, 300W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations 10A/250VAC - NO Contact
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	360mW, 450mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	2,500VAC, 1min
	Inrush voltage	6,000VAC between coil and contacts (1.2/50μs)
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 11.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CQC 08002027614 (GB/T 21711.1-2008)	A/C	0.36W/0.45W	3V, 5V, 6V, 9V, 12V, 18V, 24V, 36V, 48V	10A 250VAC	Ambient Temperature: 85℃
VDE 40025308	A/C	0.36W/0.45W	3V, 5V, 6V, 9V, 12V, 18V, 24V, 36V, 48V, 60V	10A 250VAC	Class F Insulation Ambient Temperature: 85℃
UL E164730	A/C	0.36W/0.45W	3-60VDC	10A 250VAC/30VDC	Class F Insulation Ambient Temperature: 85℃

Specifications subject to change without notice

HRS4F

POWER RELAY

COIL DATA

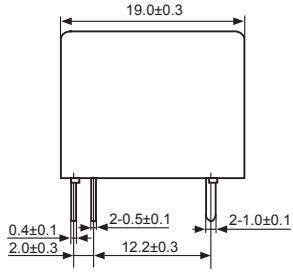
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS4F-S-DC3V	3	20	2.1	0.3	450
HRS4F-S-DC5V	5	55	3.5	0.5	
HRS4F-S-DC6V	6	80	4.2	0.6	
HRS4F-S-DC9V	9	180	6.3	0.9	
HRS4F-S-DC12V	12	320	8.4	1.2	
HRS4F-S-DC24V	24	1280	16.8	2.4	
HRS4F-S-DC48V	48	5120	33.6	4.8	
HRS4FH-S-DC3V	3	25	2.1	0.3	360
HRS4FH-S-DC5V	5	70	3.5	0.5	
HRS4FH-S-DC6V	6	100	4.2	0.6	
HRS4FH-S-DC9V	9	225	6.3	0.9	
HRS4FH-S-DC12V	12	400	8.4	1.2	
HRS4FH-S-DC24V	24	1600	16.8	2.4	
HRS4FH-S-DC48V	48	6400	33.6	4.8	

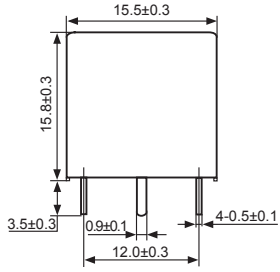
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form C

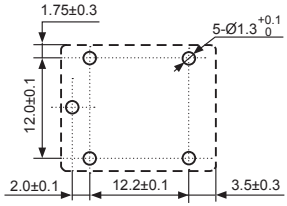
Outline

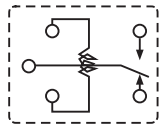


Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)

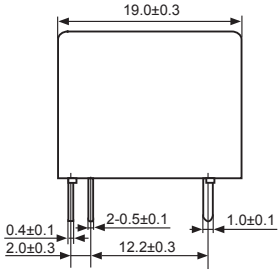




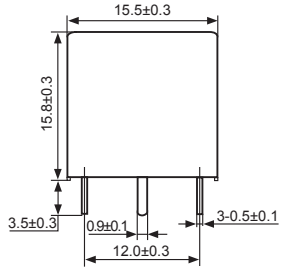
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form A

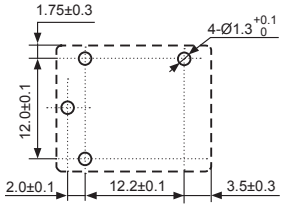
Outline

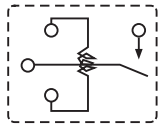


Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)





HRS4N

POWER RELAY

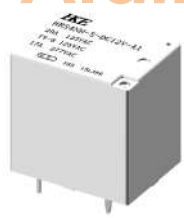
Features

- Max.20A switching capability
- High temperature load: 17A 277VAC at 105℃
- Available for single pin and double pins terminal
- Compliance to standard EN 60335-1
- Compliance to RoHS Directive
- UL Insulation system: F Class

Safety Approval

cqc NO.CQC16002155729 50367249

Relay Picture



ORDERING INFORMATION

HRS4N H – S – DC12V – A1

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (360mW)	S - Plastic Sealed Type	DC3V,DC5V,DC6V,DC9V, DC12V,DC18V,DC24V, DC36V,DC48V	A1 - Normal Open, Single pin B1 - Normal Closed, Single pin C1 - Changeover, Single pin A2 - Normal Open, Double pin B2 - Normal Closed, Double pin C2 - Changeover, Double pin

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form B, 1 Form C
Contact Material		Ag Alloy
Contact Rating		1 Form A: 20A 125VAC 17A 277VAC TV-8 125VAC 1 Form C: NO:17A 277VAC NC:7A 277VAC
Contact Resistance		Max.100mΩ(1A 24VDC)
Load	Max. Switching Voltage	400VAC
	Max. Switching Current	20A(A),17A(C)
	Max. Switching Power	4700VA
Life	Electrical	1 Form A: 100,000 operations 1 Form C: 50,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	360mW

GENERAL DATA

Insulation Resistance		Min.1000MΩ 500VDC
Dielectric Strength	Between open contacts	1000VAC,50/60Hz,1 min
	Between coil and contacts	2500VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.5ms
Operating Temperature		-40℃ to +85℃(Single pin) -40℃ to +105℃(Double pin)
Humidity		5～90%RH
Shock Resistance	Endurance	1,000m/s^2(10g)
	Misoperation	100m/s^2(100g)
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 14.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CQC 16002155729 (GB/T 21711.1-2008)	A1	0.36W	3V,5V,6V, 9V,12V,18V, 24V, 36V,48V	17A 277VAC	Ambient Temperature: 85℃
	A1/A2	0.36W		20A 125VAC	Ambient Temperature: 40℃
	B1	0.36W		10A 277VAC	Ambient Temperature: 85℃
	A2	0.36W		17A 277VAC	Ambient Temperature: 105℃
	B2	0.36W		10A 277VAC	Ambient Temperature: 105℃

HRS4N

POWER RELAY

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
TUV 50367249	A1	0.36W	3V,5V,6V, 9V,12V,18V, 24V, 36V,48V	17A 277VAC	Class F Insulation Ambient Temperature: 85℃
	A2	0.36W		17A 277VAC	Class F Insulation Ambient Temperature: 105℃
	A1/A2	0.36W		20A 125VAC	Class F Insulation Ambient Temperature: 40℃

Specifications subject to change without notice

COIL DATA

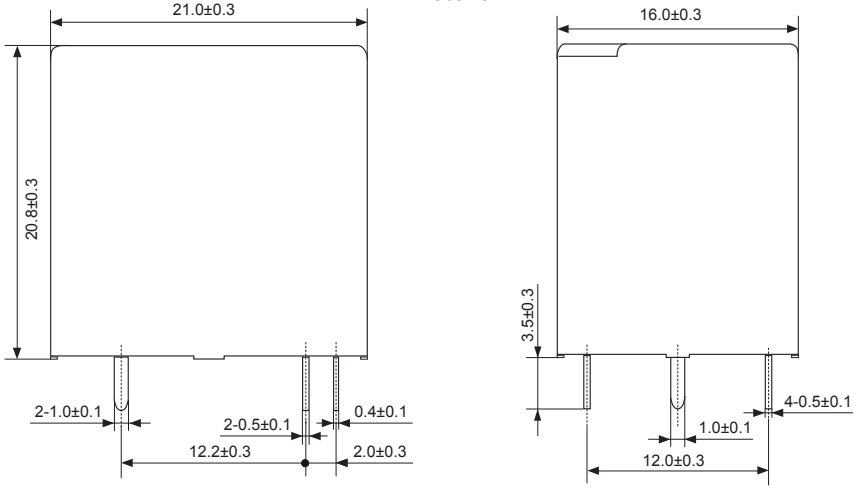
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Max. Allowable Voltage ≥VDC	Coil Power mW
HRS4NH-S-DC3V	3	25	2.25	0.3	3.9	360
HRS4NH-S-DC5V	5	70	3.75	0.5	6.5	
HRS4NH-S-DC6V	6	100	4.50	0.6	7.8	
HRS4NH-S-DC9V	9	225	6.75	0.9	11.7	
HRS4NH-S-DC12V	12	400	9.00	1.2	15.6	
HRS4NH-S-DC18V	18	900	13.50	1.8	23.4	
HRS4NH-S-DC24V	24	1600	18.00	2.4	31.2	
HRS4NH-S-DC48V	48	6400	36.00	4.8	62.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

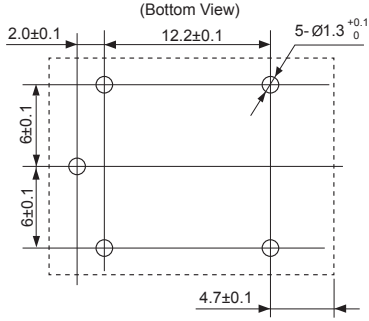
Single pin version

Outline

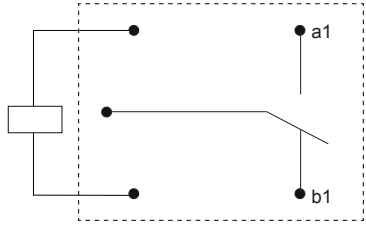


OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Mounting Hole Layout
(Bottom View)

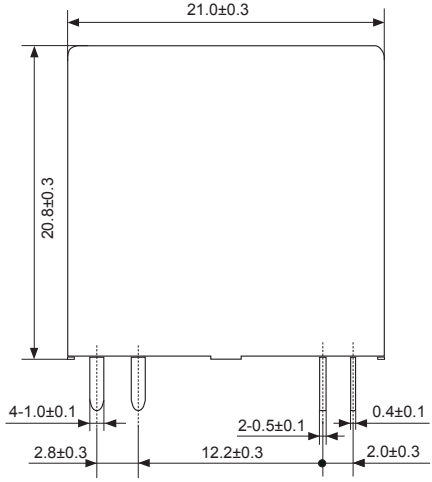


Wiring Diagram
(Bottom View)

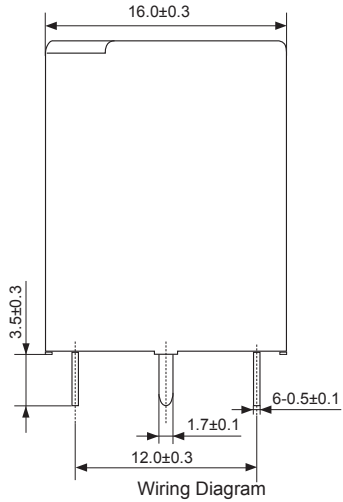


Remark: A1:Without B1 terminal
B1:Without A1 terminal
C1: With all terminals

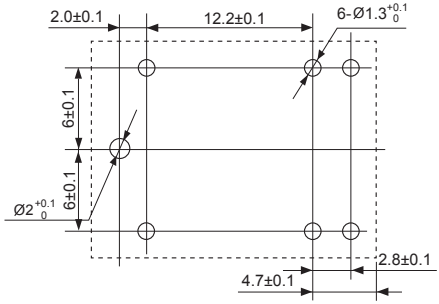
Double pin version



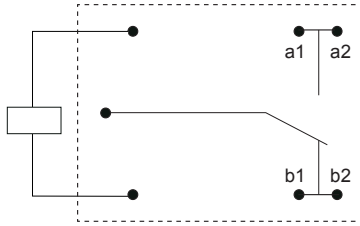
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



Remark: A2:Without B1,B2 terminas
B2:Without A1,A2 terminals
C2: With all terminals

HRS4T

POWER RELAY

Features

- Miniature relay
  Dimensions: 20.0×16.3×20.2(mm)
- Contact: 1 Form A, 1 Form B, 1 Form C
- UL Class F insulation

Safety Approval

cULus NO.E164730 NO.50116136

CQC NO.CQC08002027614

Relay Picture

ORDERING INFORMATION

HRS4T H – S – DC12V – A

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (360mW) Blank - Standard (450mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V, DC9V, DC12V, DC24V, DC48V	A - 1 Form A B - 1 Form B C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form B, 1 Form C
Contact Material		Ag Alloy
Contact Rating		10A 250VAC/24VDC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/28VDC
	Max. Switching Current	15A
	Max. Switching Power	2,500VA, 280W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations (NO contact)
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	360mW, 450mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1 min
	Between coil and contacts	1,500VAC, 1 min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 12.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CQC 08002027614 (GB/T 21711.1-2008)	A	0.36W/0.45W	3 - 48VDC	10A 250VAC	Ambient Temperature: 85℃
	B	0.36W/0.45W	3 - 48VDC	6A 250VAC	
	C	0.36W/0.45W	3 - 48VDC	NO/NC: 10A/6A 250VAC	
UL E164730	A/C	0.36W/0.45W	3 - 48VDC	10A 250VAC/30VDC	Class F Insulation Ambient Temperature: 85℃
TUV 50116136	A/B/C	0.36W/0.45W	3 - 48VDC	10A 250VAC/24VDC	Ambient Temperature: 85℃
TUV50116136(EN 60730-1)	A/B/C			10(2)A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

ISO9001、ISO/TS16949、ISO14001 Approved

HRS4T

POWER RELAY

COIL DATA

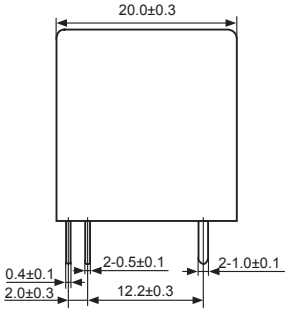
Ambient Temperature: 23℃

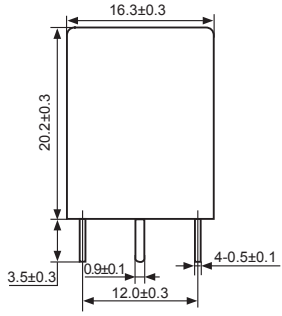
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRS4T-S-DC3V	3	20	2.1	0.3	450
HRS4T-S-DC5V	5	55	3.5	0.5	
HRS4T-S-DC6V	6	80	4.2	0.6	
HRS4T-S-DC9V	9	180	6.3	0.9	
HRS4T-S-DC12V	12	320	8.4	1.2	
HRS4T-S-DC24V	24	1280	16.8	2.4	
HRS4T-S-DC48V	48	5120	33.6	4.8	
HRS4TH-S-DC3V	3	25	2.1	0.3	360
HRS4TH-S-DC5V	5	70	3.5	0.5	
HRS4TH-S-DC6V	6	100	4.2	0.6	
HRS4TH-S-DC9V	9	225	6.3	0.9	
HRS4TH-S-DC12V	12	400	8.4	1.2	
HRS4TH-S-DC24V	24	1600	16.8	2.4	
HRS4TH-S-DC48V	48	6400	33.6	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

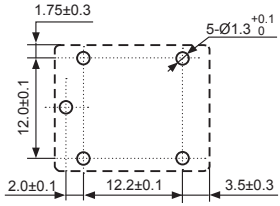
1 Form C

Outline

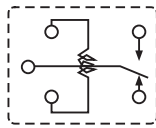




Mounting Hole Layout
(Bottom View)



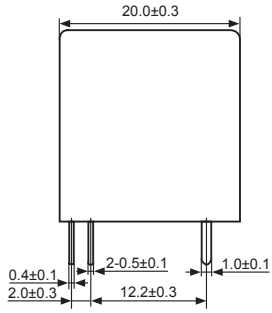
Wiring Diagram
(Bottom View)

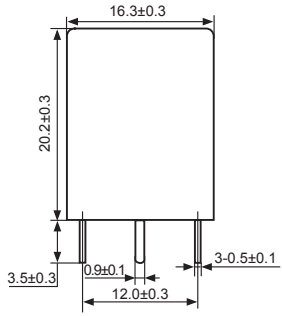


OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

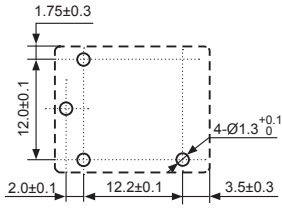
1 Form B

Outline

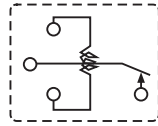




Mounting Hole Layout
(Bottom View)

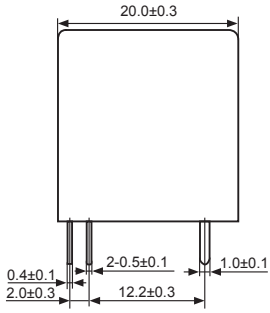


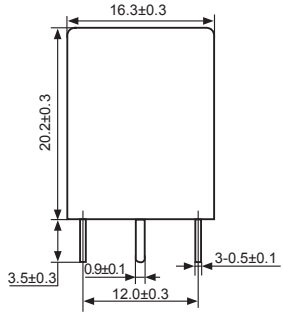
Wiring Diagram
(Bottom View)



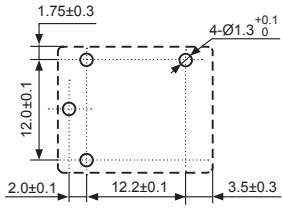
1 Form A

Outline

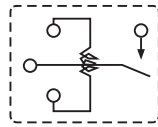




Mounting Hole Layout
(Bottom View)

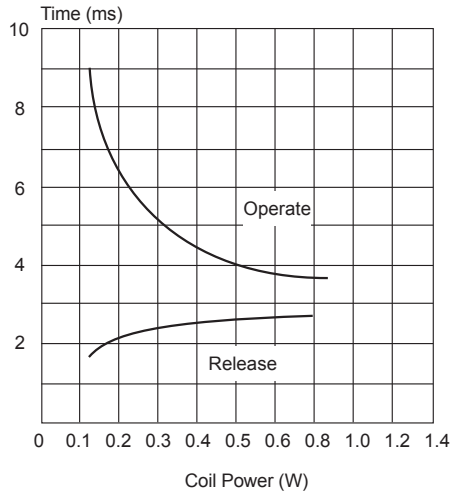


Wiring Diagram
(Bottom View)

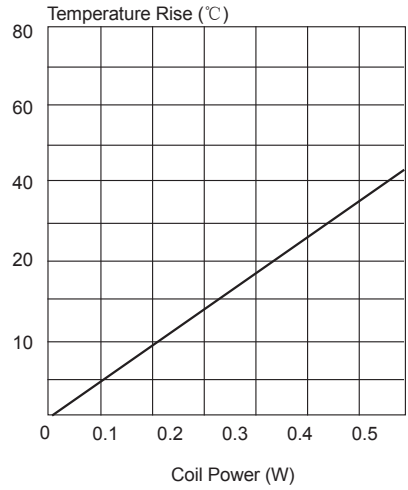


REFERENCE DATA

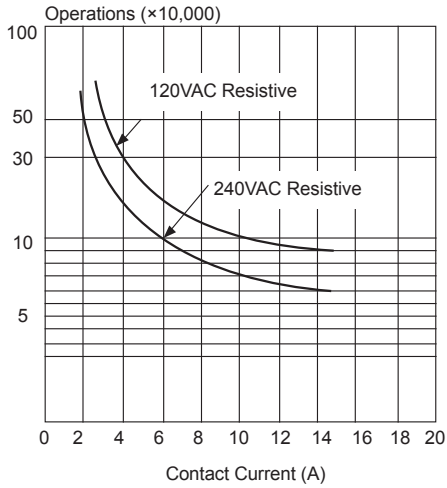
Time Curve



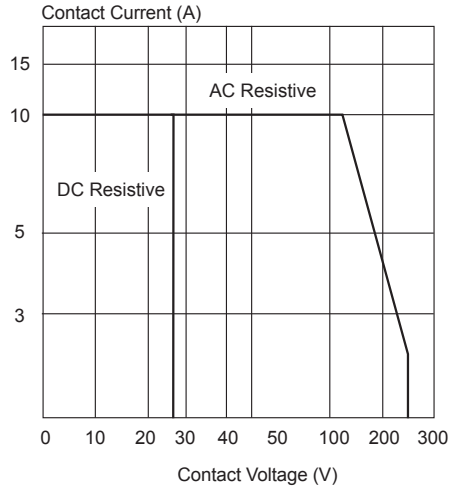
Coil Temperature Rise



Life Curves



Maximum Switching Power



V6

POWER RELAY

Features

- Low profile, flat type relay
  Dimensions: 23.0×16.1×10.2(mm)
- Max. Switching capacity: 15A
- Tungsten lamp load: 10A 125VAC
- High sensitivity 200mW

Safety Approval

NO.1460119 NO.CQC08002027612
NO.50116138 NO.E164730
NO.E322395

Relay Picture

ORDERING INFORMATION

V6 – S – DC12V

Model	Enclosure	Coil Voltage
	S - Plastic Sealed Type	DC3V, DC5V, DC6V, DC9V, DC12V, DC24V, DC48V

Remarks: 1. Available in 1 Form A only 2. Coil voltage 3 to 24VDC - Coil power: 200mw, 48VDC: 250mw

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		15A125VAC 10A 250VAC/24VDC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	16A
	Max. Switching Power	4,000VA, 480W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1min
	Between coil and contacts	2,500VAC, 1min
Operate Time		Max. 15ms
Release Time		Max. 8ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 9.00g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.2W	3 - 48VDC	10A 250VAC	Class F Insulation Ambient Temperature: 105℃
				13A 125VAC	
				Tungsten lamp load:10A 125VAC	Class F Insulation Ambient Temperature: 85℃
				15A 125VAC	
				TV-5 125VAC	
UL E322395	A	0.2W	3 - 48VDC	1/2HP 120VAC	Ambient Temperature: 85℃

ISO9001、ISO/TS16949、ISO14001 Approved

V6

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CSA 1460119	A	0.2W	3 - 48VDC	10A 250VAC	—
				Tungsten lamp load: 10A 125VAC	Ambient Temperature: normal
TUV 50116138-0001	A	0.2W	3 - 48VDC	16A 250VAC	Ambient Temperature: 85℃
				10A 30VDC	Ambient Temperature: 85℃
TUV 50116138-0002 (EN60730-1)	A	0.2W	3 - 48VDC	16(3)A 250VAC	Ambient Temperature: 85℃
CQC 08002027612 (GB/T 21711.1-2008)	A	0.2W	3 - 48VDC	16A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

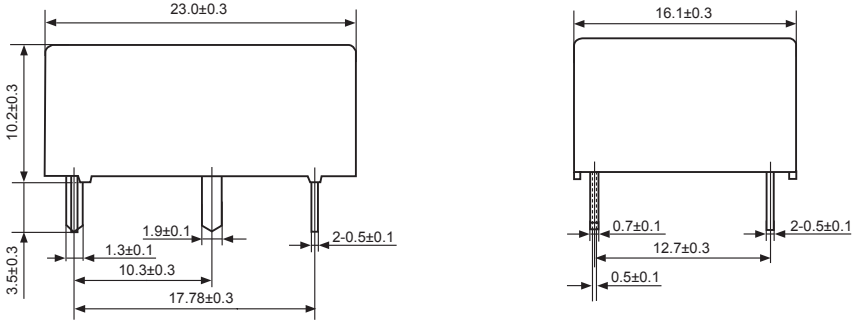
COIL DATA

Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
V6-S-DC3V	3	45	2.25	0.30	200
V6-S-DC5V	5	125	3.75	0.50	
V6-S-DC6V	6	180	4.5	0.60	
V6-S-DC9V	9	405	6.75	0.90	
V6-S-DC12V	12	720	9.0	1.20	
V6-S-DC24V	24	2880	18.0	2.40	
V6-S-DC48V	48	9216	36.0	4.80	250

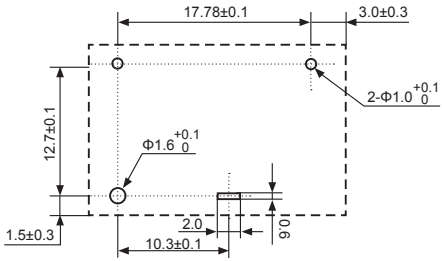
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline

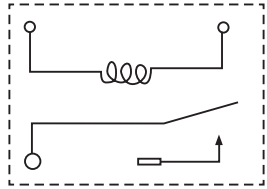


OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Mounting Hole Layout
(Bottom View)

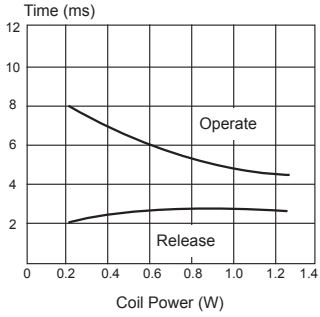


Wiring Diagram
(Bottom View)

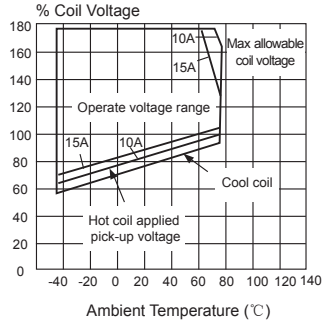


REFERENCE DATA

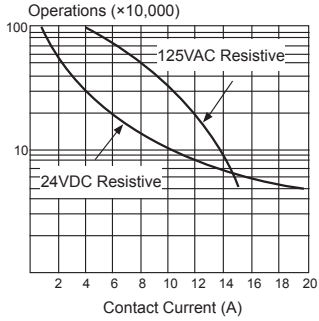
Time Curve



Operating Range



Life Curves



V6T

POWER RELAY

Features

- Low profile, flat type relay
  Dimensions: 23.0×16.1×10.2(mm)
- Max. Switching capacity: 16A
- Lever type(Manual Operation)
- High sensitivity 200mW

Safety Approval

cULus NO.E164730

Relay Picture

ORDERING INFORMATION

V6T – [S] – [DC12V]

Model	Enclosure	Coil Voltage
	S - Plastic Sealed Type	DC3V,DC5V,DC6V,DC9V, DC12V,DC24V,DC48V

Remarks: 1. Available in 1 Form A only
2. Coil voltage 3 to 24VDC - Coil power: 200mw, 48VDC: 250mw
3.Lever type

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		Resistive: 16A 250VAC 16A 30VDC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	16A
	Max. Switching Power	4,000VA, 480W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	50,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	200mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1min
	Between coil and contacts	2,500VAC, 1min
Operate Time		Max. 15ms
Release Time		Max. 8ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 10.00g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.2W	3-48VDC	16A 250VAC 16A 30VDC	Class F Insulation Ambient Temperature: 85℃

Specifications subject to change without notice

V6T

POWER RELAY

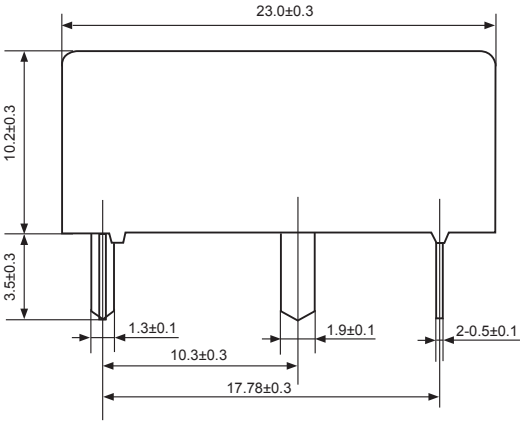
COIL DATA

Ambient Temperature: 23℃

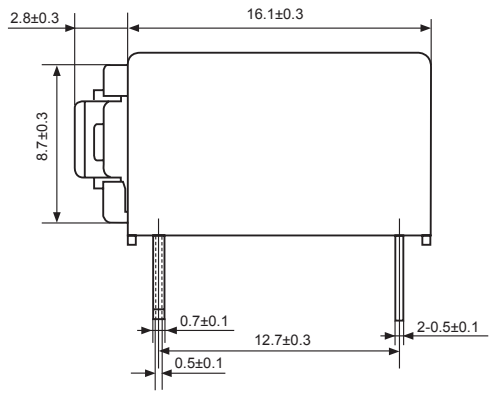
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
V6T-S-DC3V	3	45	2.25	0.30	200
V6T-S-DC5V	5	125	3.75	0.50	
V6T-S-DC6V	6	180	4.50	0.60	
V6T-S-DC9V	9	405	6.75	0.90	
V6T-S-DC12V	12	720	9.00	1.20	
V6T-S-DC24V	24	2880	18.0	2.40	
V6T-S-DC48V	48	9216	36.0	4.80	250

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

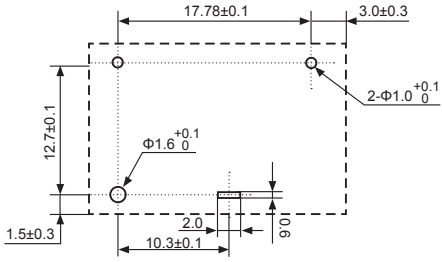
Outline

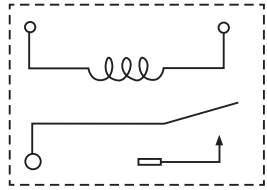


Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)





HRM

POWER RELAY

Features

- General purpose power relay
  Dimensions: 29.0×12.6×20.8(mm)
- TV-5 rating
- Creepage distance: 8mm

Safety Approval

NO.50125647 NO.CQC09002035018
NO.E164730 NO.1063016(LR 109368)
NO.40023201

Relay Picture

ORDERING INFORMATION

HRM H - S - DC12V - A - T

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form	Contact Rating
	H - High Sensitivity (540mW) Blank - Standard (720mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V, DC9V, DC12V, DC24V, DC48V	A - 1 Form A C - 1 Form C	Blank: 10A 250VAC T: 16A 250VAC (T - 1 Form A only)

Remark: T - High capacity, available only in 1 Form A

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		Resistive: 10A 250VAC/30VDC TV Rating: TV-5 Inductive: 5A 240VAC(COSΦ=0.4) Resistive: 16A 250VAC(T)
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	16A
	Max. Switching Power	2,500VA, 300W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
		50,000 operations (COSΦ=0.4, L/R=7ms)
	Mechanical	10,000,000 operations

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Operate Time		Max. 15ms
Release Time		Max. 8ms
Operating Temperature		-30～+55℃ (720mW)
		-30～+70℃ (540mW)
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 13.00g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	540mW, 720mW

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.72W/0.54W	3 - 48VDC	10A 250VAC	Ambient Temperature: 40℃
				TV-5 250VAC	Ambient Temperature: 40℃

HRM
POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CSA 1063016 (LR 109368)	A	0.72W/0.54W	3 - 48VDC	10A 250VAC	—
VDE 40023201	A	0.72W	3 - 48VDC	10A 250VAC	Ambient Temperature: 55℃
	A	0.54W	3 - 48VDC	10A 250VAC	Ambient Temperature: 70℃
TUV 50125647-0001	A/C	0.72W/0.54W	3 - 48VDC	10A 250VAC Inductive: 5A 250VAC	Ambient Temperature: 85℃
TUV 50125647-0002 (EN 60730-1)	A/C	0.72W/0.54W	3 - 48VDC	10(2)A 250VAC 10(5)A 250VAC	Ambient Temperature: 85℃
CQC09002035018 (GB/T 21711.1-2008)	A/C	0.72W/0.54W	3 - 48VDC	10A 250VAC	Class F Insulation Ambient Temperature: 85℃

Specifications subject to change without notice

COIL DATA

Ambient Temperature: 23℃

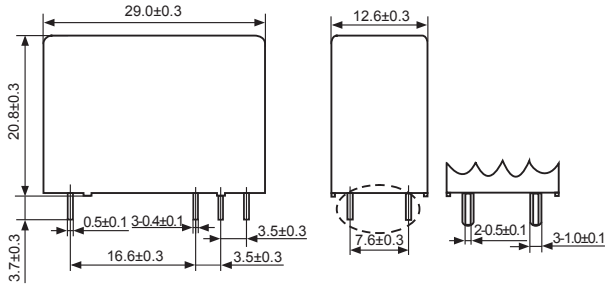
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRM-S-DC3V	3	12.5	2.25	0.3	720
HRM-S-DC5V	5	35	3.75	0.5	
HRM-S-DC6V	6	50	4.50	0.6	
HRM-S-DC9V	9	112.5	6.75	0.9	
HRM-S-DC12V	12	200	9.0	1.2	
HRM-S-DC24V	24	800	18.0	2.4	
HRM-S-DC48V	48	3200	36.0	4.8	
HRMH-S-DC3V	3	17	2.25	0.3	540
HRMH-S-DC5V	5	46	3.75	0.5	
HRMH-S-DC6V	6	67	4.50	0.6	
HRMH-S-DC9V	9	150	6.75	0.9	
HRMH-S-DC12V	12	267	9.0	1.2	
HRMH-S-DC24V	24	1067	18.0	2.4	
HRMH-S-DC48V	48	4267	36.0	4.8	

HRM
POWER RELAY

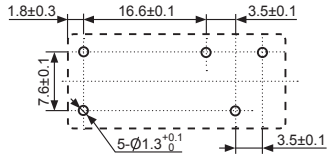
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

HRM C

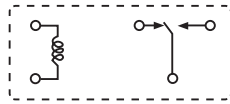
Outline



Mounting Hole Layout
(Bottom View)

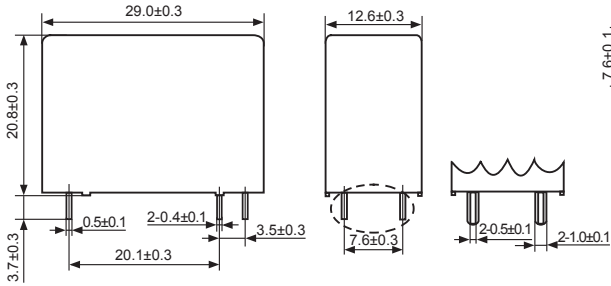


Wiring Diagram
(Bottom View)

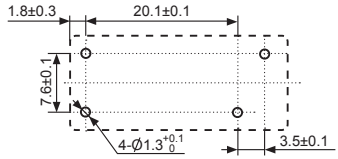


HRM A

Outline



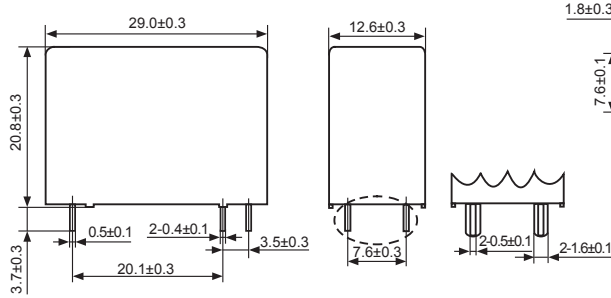
Mounting Hole Layout
(Bottom View)



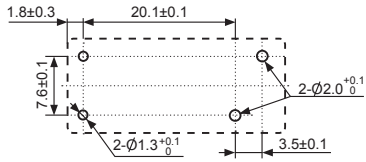
Wiring Diagram
(Bottom View)

HRM -T

Outline



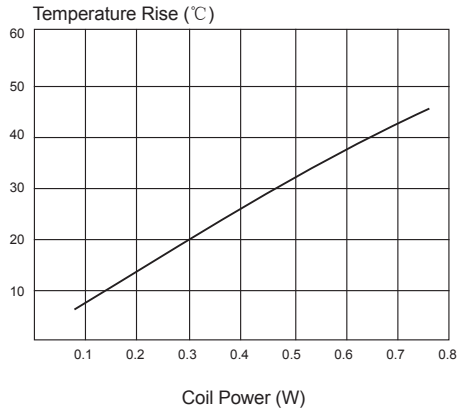
Mounting Hole Layout
(Bottom View)



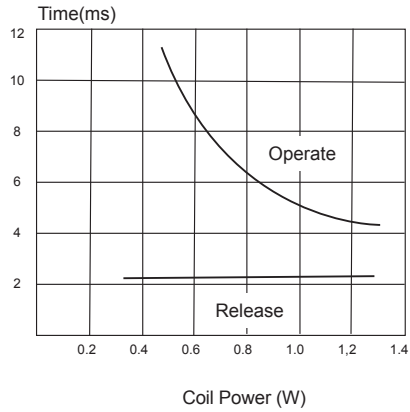
Wiring Diagram
(Bottom View)

REFERENCE DATA

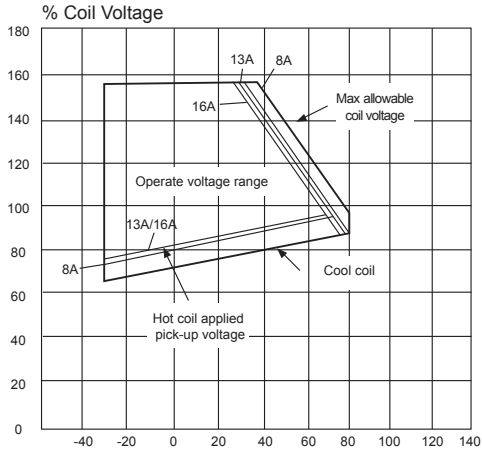
Coil Temperature Rise



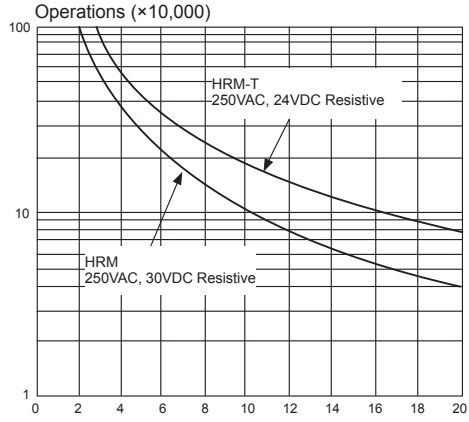
Time Curve



Operating Range



Life Curves



HRM1

功率继电器

Features

- General purpose power relay
  Dimensions: 29.0×12.6×20.8(mm)
- Contact: 2 Form A, 2 Form C
- Dielectric strength of 4000V between coil and contacts
- Creepage distance: 8mm

Safety Approval

c UL us NO.E164730 cqc NO.CQC09002035018
NO.50134947 SP NO.1063015(LR 106040)

Relay Picture

ORDERING INFORMATION

HRM1 [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (540mW) Blank - Standard (720mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V, DC9V DC12V, DC24V, DC48V	A - 2 Form A C - 2 Form C

SPECIFICATION

CONTACT DATA

Contact Form		2 Form A, 2 Form C
Contact Material		Ag Alloy
Contact Rating		Resistive: 5A 250VAC/24VDC TV Rating: TV-5 Inductive: 5A 250VAC/24VDC (COSΦ=0.4, L/R=7ms)
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	5A
	Max. Switching Power	1,250VA, 150W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
		20,000 operations (COSΦ=0.4, L/R=7ms)
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	540mW, 720mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Operate Time		Max. 15ms
Release Time		Max. 8ms
Operating Temperature		-30～+55℃ (720mW)
		-30～+70℃ (540mW)
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 13.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.72W/0.54W	3-48VDC	TV-5	Ambient Temperature: 40℃
	A/C	0.72W/0.54W	3-48VDC	5A 120VAC	Ambient Temperature: 40℃
	A	0.72W/0.54W	3-48VDC	12A 24VDC	Ambient Temperature: 40℃

HRM1

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CSA 1063015(LR 106040)	A/C	0.72W/0.54W	3 - 48VDC	5A 120VAC	—
TUV 50134947-001	A/C	0.72W/0.54W	3 - 48VDC	5A 250VAC	Ambient Temperature: 85℃
CQC09002035018 (GB/T 21711. 1-2008)	A/C	0.72W/0.54W	3 - 48VDC	5A 250VAC	Class F Insulation Ambient Temperature: 85℃

Specifications subject to change without notice

COIL DATA

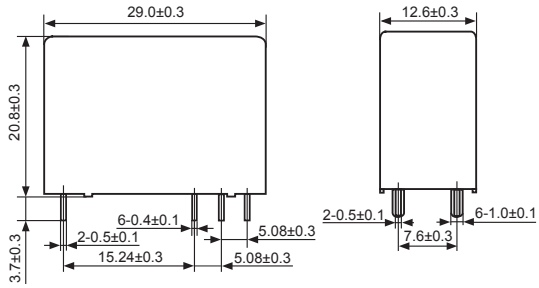
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRM1-S-DC3V	3	12.5	2.25	0.3	720
HRM1-S-DC5V	5	35	3.75	0.5	
HRM1-S-DC6V	6	50	4.50	0.6	
HRM1-S-DC9V	9	112.5	6.75	0.9	
HRM1-S-DC12V	12	200	9.0	1.2	
HRM1-S-DC24V	24	800	18.0	2.4	
HRM1-S-DC48V	48	3200	36.0	4.8	
HRM1H-S-DC3V	3	17	2.25	0.3	540
HRM1H-S-DC5V	5	46	3.75	0.5	
HRM1H-S-DC6V	6	67	4.50	0.6	
HRM1H-S-DC9V	9	150	6.75	0.9	
HRM1H-S-DC12V	12	267	9.0	1.2	
HRM1H-S-DC24V	24	1067	18.0	2.4	
HRM1H-S-DC48V	48	4267	36.0	4.8	

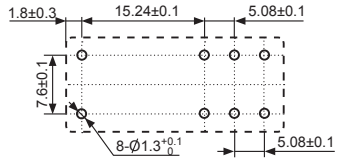
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form C

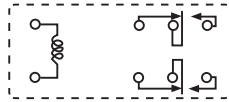
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



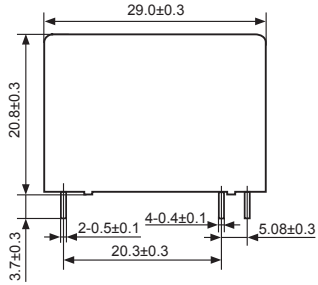
HRM1

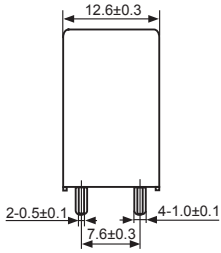
POWER RELAY

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

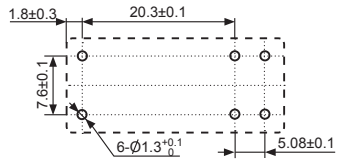
1 Form A

Outline





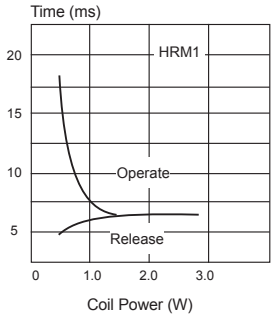
Mounting Hole Layout
(Bottom View)



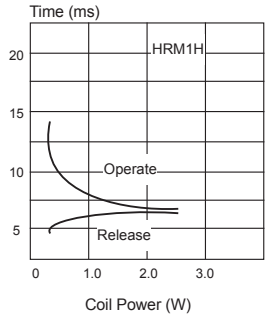
Wiring Diagram
(Bottom View)

REFERENCE DATA

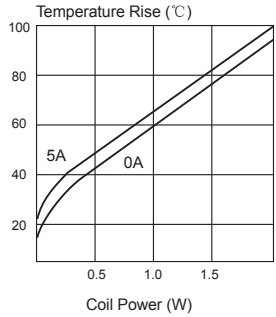
Time Curve (standard)



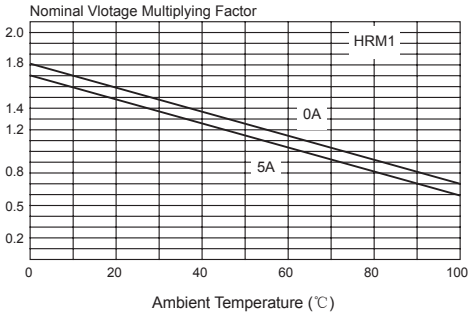
Time Curve(high sensitive)



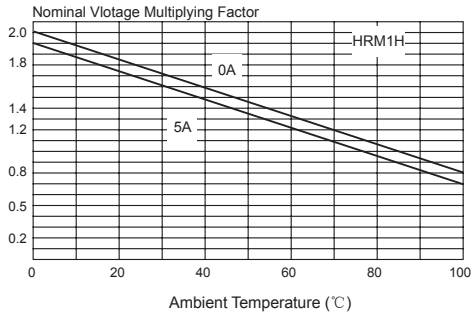
Coil Temperature Rise



Operating Range

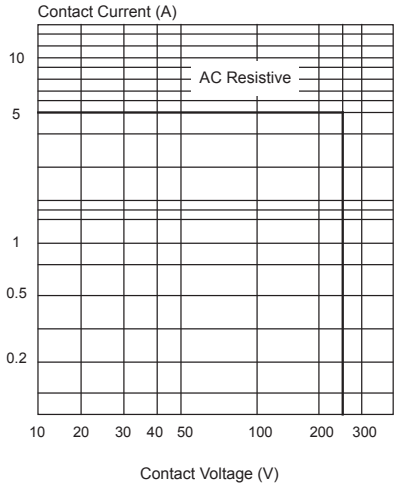


Operating Range

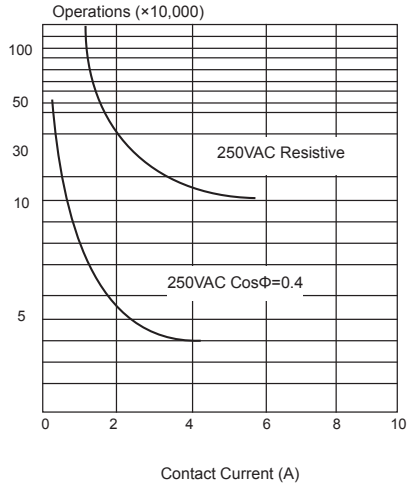


REFERENCE DATA

Maximum Switching Power



Life Curves



HRM2

POWER RELAY

Features

- General purpose power relay
  Dimensions: 29.0×12.6×20.8(mm)
- Contact: 1 Form A, 1 Form C
- Dielectric strength of 4000V
  between coil and contacts
- 16A contact current
- Creepage distance: 8mm

Safety Approval

c UL us NO.E164730 CQC NO.CQC09002035018
NO.50116140 SP NO.1063015(LR 106040)

Relay Picture

ORDERING INFORMATION

HRM2 [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H-High Sensitivity (540mW) Blank-Standard (720mW)	S - Plastic Sealed Type	DC3V, DC5V, DC6V, DC9V DC12V, DC24V, DC48V	A - 1 Form A C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		Resistive: 16A 250VAC/30VDC TV Rating: TV-8 125VAC Inductive: 8A 250VAC/30VDC (COSΦ=0.4,L/R=7ms)
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	16A
	Max. Switching Power	4,000VA, 480W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	540mW, 720mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Operate Time		Max. 15ms
Release Time		Max. 8ms
Operating Temperature		-30～+55℃ (720mW)
		-30～+70℃ (540mW)
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 13.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CSA 1063015 (LR 106040)	A/C	0.72W/0.54W	3 - 48VDC	16A 120VAC	—
TUV 50116140-001	A	0.72W/0.54W	3 - 48VDC	16A 250VAC	Ambient Temperature: 85℃
	C	0.72W/0.54W	3 - 48VDC	NO/NC: 16A/10A 250VAC	Ambient Temperature: 85℃

HRM2

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A/C	0.72W/0.54W	3 - 48VDC	16A 120VAC	Ambient Temperature: 40℃
CQC09002035018 (GB/T 21711.1-2008)	A	0.72W/0.54W	3 - 48VDC	16A 250VAC	Ambient Temperature: 85℃
	C	0.72W/0.54W	3 - 48VDC	NO/NC: 16A/10A 250VAC	Ambient Temperature:85℃

Specifications subject to change without notice

COIL DATA

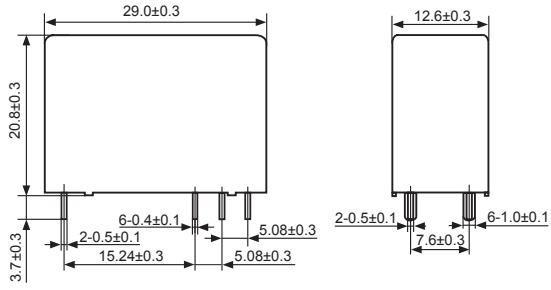
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRM2-S-DC3V	3	12.5	2.25	0.3	720
HRM2-S-DC5V	5	35	3.75	0.5	
HRM2-S-DC6V	6	50	4.50	0.6	
HRM2-S-DC9V	9	112.5	6.75	0.9	
HRM2-S-DC12V	12	200	9.0	1.2	
HRM2-S-DC24V	24	800	18.0	2.4	
HRM2-S-DC48V	48	3200	36.0	4.8	
HRM2H-S-DC3V	3	17	2.25	0.3	540
HRM2H-S-DC5V	5	46	3.75	0.5	
HRM2H-S-DC6V	6	67	4.50	0.6	
HRM2H-S-DC9V	9	150	6.75	0.9	
HRM2H-S-DC12V	12	267	9.0	1.2	
HRM2H-S-DC24V	24	1067	18.0	2.4	
HRM2H-S-DC48V	48	4267	36.0	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

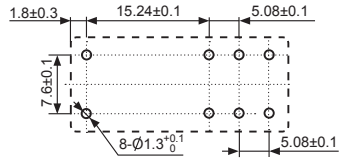
1 Form C

Outline



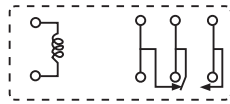
Mounting Hole Layout

(Bottom View)



Wiring Diagram

(Bottom View)



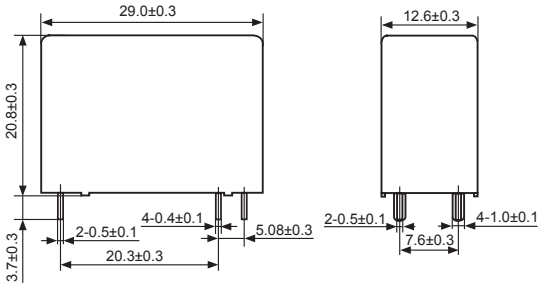
HRM2

POWER RELAY

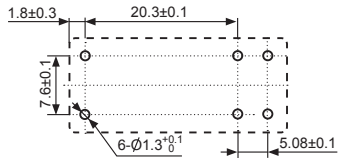
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form A

Outline



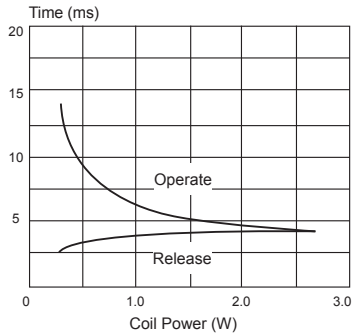
Mounting Hole Layout
(Bottom View)



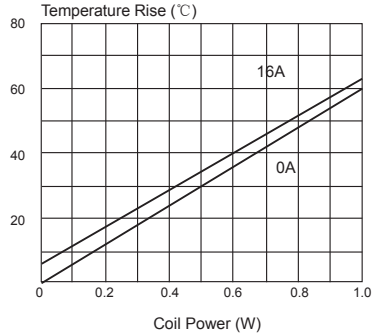
Wiring Diagram
(Bottom View)

REFERENCE DATA

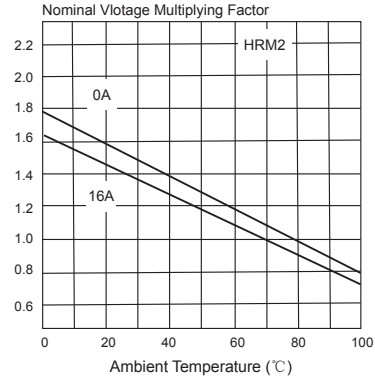
Time Curve



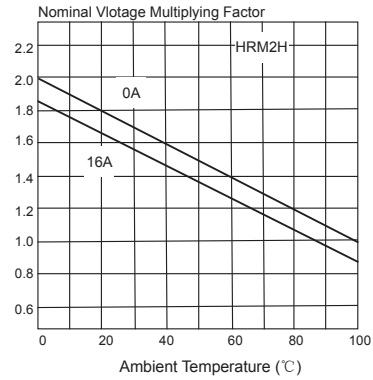
Coil Temperature Rise



Operating Range

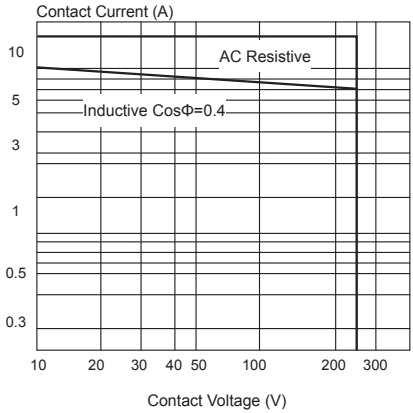


Operating Range

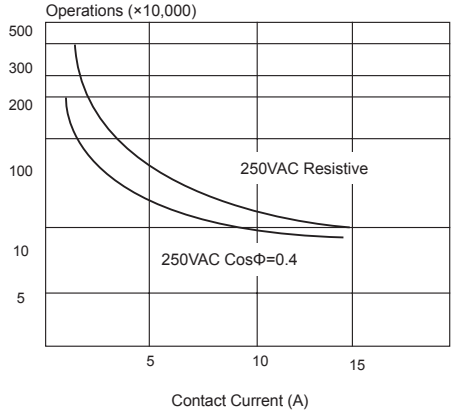


REFERENCE DATA

Maximum Switching Power



Life Curves



HRM3

POWER RELAY

Features

- Available in sealed and unsealed versions
  Sealed: 24.6×10.6×25.0(mm)
  Unsealed: 24.0×10.0×25.0(mm)
- High sensitivity type with power consumption of 250mW
- 1 form A contact configuration
- Comply with TV-5 standards required for TV and audio power supplies

Safety Approval

CQC NO.CQC08001026616 SP NO.1063016(LR 109368)
cUL us NO.E164730 VDE NO.40018308 TÜV NO.50125648

Relay Picture

ORDERING INFORMATION

HRM3 [H] – [S] – [DC12V]

Model	Coil Sensitivity	Enclosure	Coil Voltage
	H - High Sensitivity (250mW) L - High Sensitivity (150mW) Blank - Standard (540mW)	S - Sealed Plastic Cover Blank - Unsealed Plastic Cover	DC3V, DC5V, DC6V, DC9V DC12V, DC24V, DC48V

Remark: 1. Available in 1 Form A only

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		10A 250VAC/30VDC, TV-5
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	10A
	Max. Switching Power	2,500VA, 300W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	2,000,000 operations

COIL DATA

Nominal Coil Power	150mW, 250mW, 540mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Sure Strength		10,000VAC
Operate Time		Max. 15ms
Release Time		Max. 8ms
Operating Temperature		-40～+70℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 10.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.54W/0.25W	3 - 48VDC	10A 250VAC/30VDC TV-8 125VAC	—
	A	0.15W	3 - 48VDC	5A 250VAC/30VDC TV-5 125VAC	—
CQC 08001026616	A	0.54W/0.25W	3 - 48VDC	10A 250VAC	Ambient Temperature: 85℃

HRM3

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CSA 1063016(LR 109368)	A	0.54W/0.25W	3-48VDC	10A 250VAC/30VDC	—
VDE 40018308	A	0.54W/0.25W	3,5,6,9,12 ,24,48VDC	10A 250VAC/30VDC	Ambient Temperature: 70℃
		0.54W	5,10,18,12VDC	5A 250VAC	
		0.25W	5,10,12VDC	8A 250VAC	
TUV 50125648-0001	A	0.54W/0.25W	3-48VDC	10A 250VAC	Ambient Temperature: 85℃
TUV 50125648-0002 (EN 60730-1)	A	0.54W/0.25W	3-48VDC	10(2)A 250VAC	Ambient Temperature: 85℃
				10(5)A 250VAC	

Specifications subject to change without notice

COIL DATA

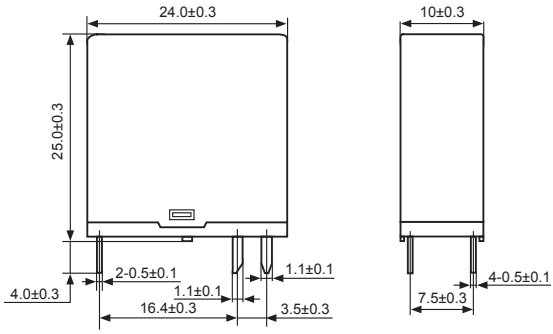
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRM3-(S)-DC3V	3	17	2.25	0.3	540
HRM3-(S)-DC5V	5	47	3.75	0.5	
HRM3-(S)-DC6V	6	67	4.50	0.6	
HRM3-(S)-DC9V	9	150	6.75	0.9	
HRM3-(S)-DC12V	12	267	9.0	1.2	
HRM3-(S)-DC24V	24	1067	18.0	2.4	
HRM3-(S)-DC48V	48	4267	36.0	4.8	
HRM3H-(S)-DC3V	3	36	2.25	0.3	250
HRM3H-(S)-DC5V	5	100	3.75	0.5	
HRM3H-(S)-DC6V	6	144	4.50	0.6	
HRM3H-(S)-DC9V	9	324	6.75	0.9	
HRM3H-(S)-DC12V	12	576	9.0	1.2	
HRM3H-(S)-DC24V	24	2304	18.0	2.4	
HRM3H-(S)-DC48V	48	9216	36.0	4.8	
HRM3L-(S)-DC3V	3	60	2.25	0.3	150
HRM3L-(S)-DC5V	5	167	3.75	0.5	
HRM3L-(S)-DC6V	6	240	4.5	0.6	
HRM3L-(S)-DC9V	9	540	6.75	0.9	
HRM3L-(S)-DC12V	12	960	9.0	1.2	
HRM3L-(S)-DC24V	24	3840	18.0	2.4	

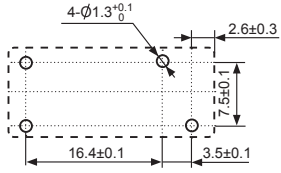
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Unsealed type

Outline



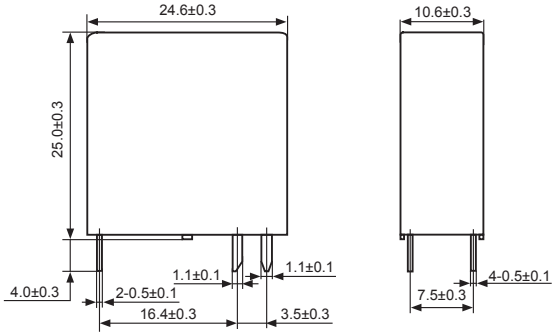
Mounting Hole Layout
(Bottom View)



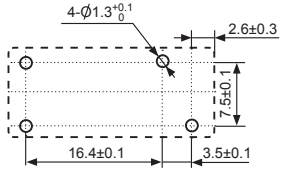
Wiring Diagram
(Bottom View)

Sealed type

Outline



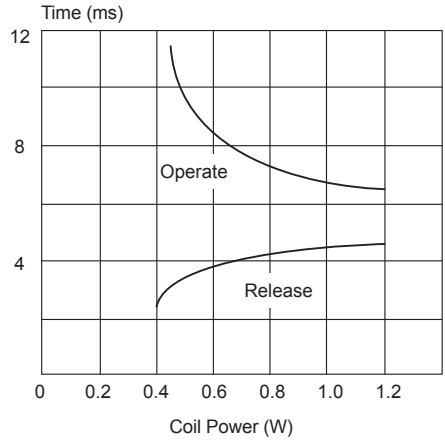
Mounting Hole Layout
(Bottom View)



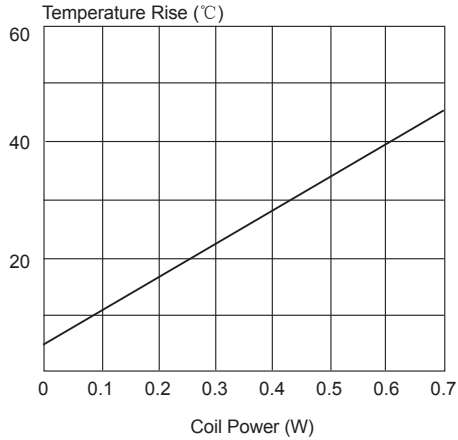
Wiring Diagram
(Bottom View)

REFERENCE DATA

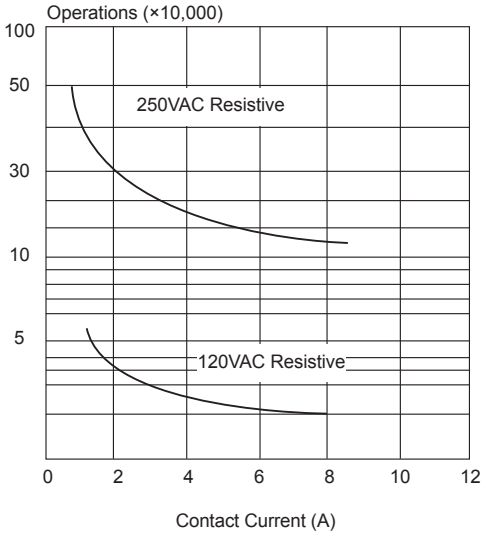
Time Curve



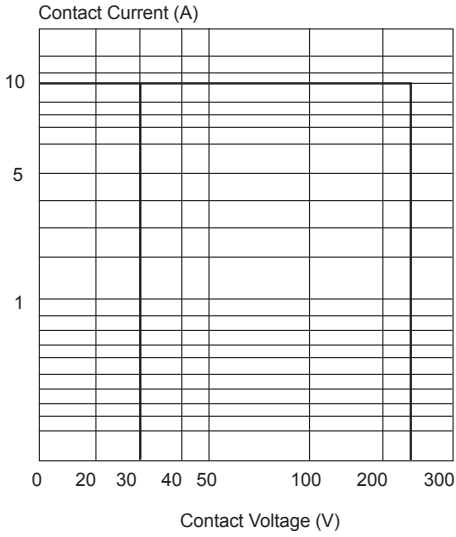
Coil Temperature Rise



Life Curves



Maximum Switching Power



HRM4

POWER RELAY

Features

- Small size
  Sealed and unsealed versions
  Sealed: 24.4×12.9×24.8(mm)
  Unsealed: 23.5×12.0×24.8(mm)
- 5A contact current
- 2 form A contact configuration
- Creepage distance: 6mm
- Cross bar or rivet contacts

Safety Approval

NO.1063016(LR 109368)
NO.1426409
NO.CQC12002086131
NO.40018309
NO.50116141
NO.E164730

Relay Picture

ORDERING INFORMATION

HRM4 [H] - [S] - [DC12V] [SP]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivity (250mW) Blank - Standard (540mW)	S - Sealed Plastic Cover Blank - Unsealed Plastic Cover	DC3V, DC5V, DC6V, DC9V DC12V, DC24V, DC48V	Blank - Rivet Contact SP - Cross Bar Contact

Remark: 1. Available only in 2 form A(DPST) configuration

SPECIFICATION

CONTACT DATA

Contact Form		2 Form A
Contact Material		AuAg, Ag Alloy
Contact Rating		5A 250VAC/30VDC, TV-5 (Rivet Contact) 3A 125VAC/30VDC (Cross Bar Contact)
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	5A
	Max. Switching Power	1,250VA, 150W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	2,000,000 operations

COIL DATA

Nominal Coil Power	250mW, 540mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	4,000VAC, 1min
Operate Time		Max. 20ms
Release Time		Max. 10ms
Operating Temperature		-30℃ to +70℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 13.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	SP - 2A	0.54W/0.25W	3 - 48VDC	3A 125VAC	—
CSA 1426409	SP - 2A	0.54W/0.25W	3 - 48VDC	3A 125VAC/30VDC	—
TUV 50116141	SP - 2A	0.54W	3 - 48VDC	3A 125VAC/24VDC	Ambient Temperature: 70℃

HRM4

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CQC 12002086131	Rivet Contacts - 2A	0.54W	3-48VDC	5A 250VAC	Ambient Temperature: -40℃～85℃
TUV 50116141-0001	Rivet Contacts - 2A	0.54W	3-48VDC	5A 250VAC/24VDC	Ambient Temperature: 85℃
TUV 50116141-0002 (EN60730-1)	Rivet Contacts - 2A	0.54W	3-48VDC	5(1)A 250VAC 5(2.5)A 250VAC	Ambient Temperature: 85℃
VDE 40018309	Rivet Contacts - 2A	0.54W	5,12,24VDC	5A 250VAC/30VDC	Ambient Temperature: 70℃
UL E164730	Rivet Contacts - 2A	0.54W/0.25W	3-48VDC	5A 250VAC/30VDC TV-5 125VAC	—
CSA 1063016(LR 109368)	Rivet Contacts - 2A	0.54W/0.25W	3-48VDC	5A 250VAC/30VDC	—

Specifications subject to change without notice

COIL DATA

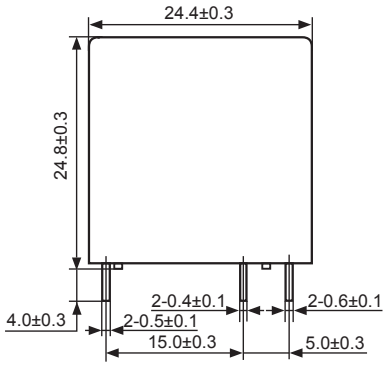
Ambient Temperature: 23℃

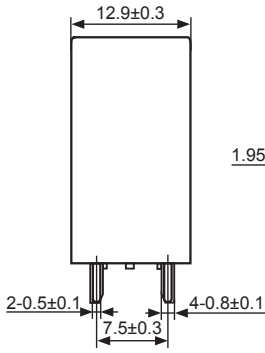
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HRM4-(S)-DC3V	3	17	2.25	0.3	540
HRM4-(S)-DC5V	5	47	3.75	0.5	
HRM4-(S)-DC6V	6	67	4.50	0.6	
HRM4-(S)-DC9V	9	150	6.75	0.9	
HRM4-(S)-DC12V	12	267	9.0	1.2	
HRM4-(S)-DC24V	24	1067	18.0	2.4	
HRM4-(S)-DC48V	48	4267	36.0	4.8	
HRM4H-(S)-DC3V	3	36	2.25	0.3	250
HRM4H-(S)-DC5V	5	100	3.75	0.5	
HRM4H-(S)-DC6V	6	144	4.50	0.6	
HRM4H-(S)-DC9V	9	324	6.75	0.9	
HRM4H-(S)-DC12V	12	576	9.0	1.2	
HRM4H-(S)-DC24V	24	2304	18.0	2.4	
HRM4H-(S)-DC48V	48	9216	36.0	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

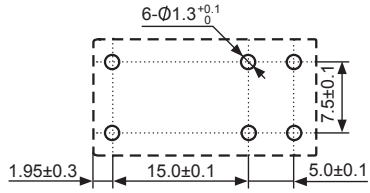
Sealed type

Outline

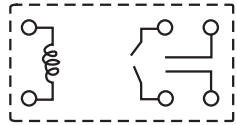




Mounting Hole Layout
(Bottom View)

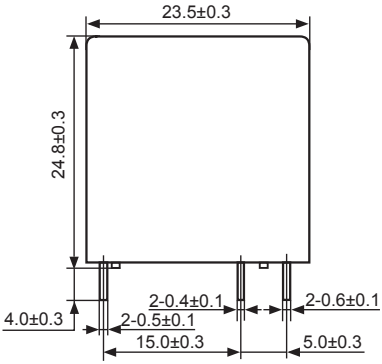


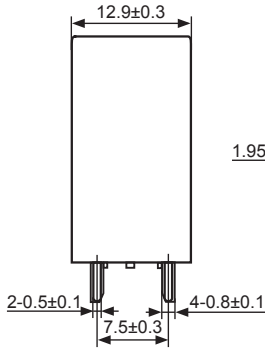
Wiring Diagram
(Bottom View)



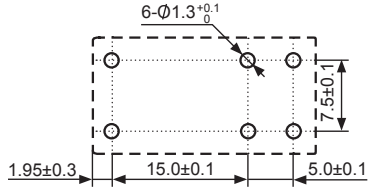
Unsealed type

Outline

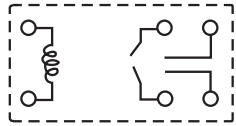




Mounting Hole Layout
(Bottom View)

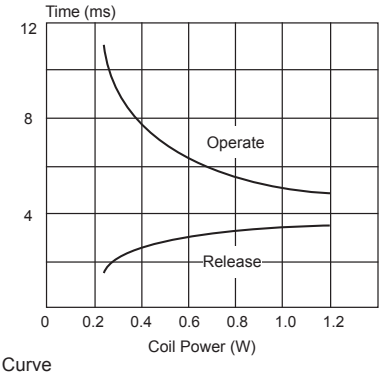


Wiring Diagram
(Bottom View)

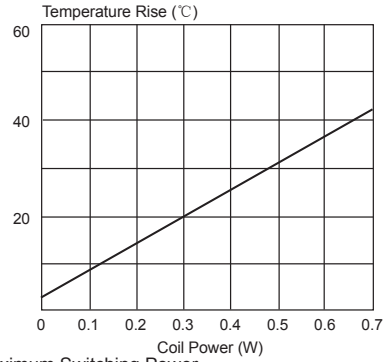


REFERENCE DATA

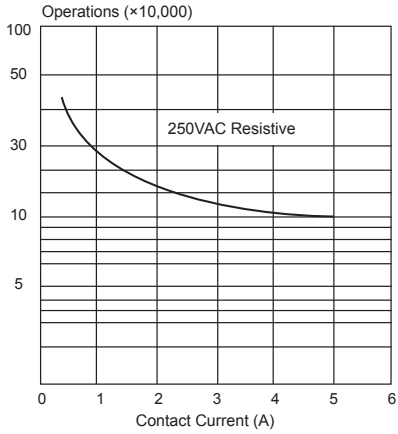
Time Curve



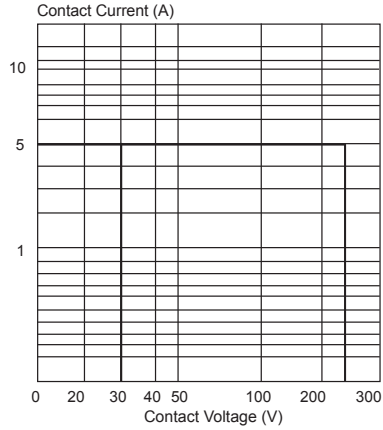
Coil Temperature Rise



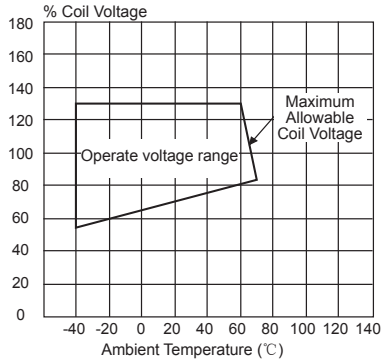
Life Curve



Maximum Switching Power



Operating Voltage Range



HCP1

POWER RELAY

Features

- Low profile,height 15.8mm
  Dimensions: 29.0×12.6×15.8(mm)
- Switching capacity 12A
- Contact: 1 Form A, 1 Form C
- Sensitivity 400mW
- Insulation: 5KV
  Creepage:10mm

Safety Approval

cULus NO.E164730 CQC NO.CQC09002030014
NO.50097843 VDE NO.40043990

Relay Picture

ORDERING INFORMATION

HCP1 - [S] - [DC12V] - [C]

Model	Enclosure	Coil Voltage	Contact Form
	S - Plastic Sealed Type	DC5V, DC6V, DC9V, DC12V, DC24V, DC48V	A - 1 Form A C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		Resistive：12A 250VAC/30VDC Inductive：5A 250VAC Cosφ=0.4
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	440VAC/120VDC
	Max. Switching Current	12A
	Max. Switching Power	3,000VA, 360W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
		50,000 operations (Inductive: Cosφ=0.4, L/R=7ms)
	Mechanical	20,000,000 operations

COIL DATA

Nominal Coil Power	400mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	5,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 13.00g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A/C	0.4W	5-110VDC	12A 250VAC	Class F insulation Ambient Temperature: 85℃
TUV 50097843	A/C	0.4W	5-48VDC	12A 250VAC	Ambient Temperature: 85℃
CQC09002030014 (GB/T 21711.1-2008)	A/C	0.4W	5,6,9,12,24,48,60,110VDC	12A 250VAC	Ambient Temperature: 85℃
VDE 40043990	A/C	0.4W	5,6,9,12,18,24,36,48VDC	12A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

HCP1

POWER RELAY

COIL DATA

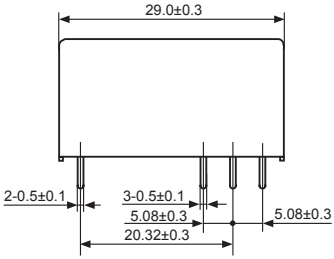
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HCP1-S-DC5V	5	62.5	3.5	0.5	400
HCP1-S-DC6V	6	90.0	4.2	0.6	
HCP1-S-DC9V	9	202.5	6.3	0.9	
HCP1-S-DC12V	12	360	8.4	1.2	
HCP1-S-DC24V	24	1440	16.8	2.4	
HCP1-S-DC48V	48	5760	33.6	4.8	

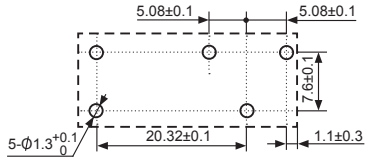
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form C

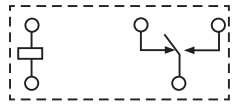
Outline (5mm)



Mounting Hole Layout
(Bottom View)

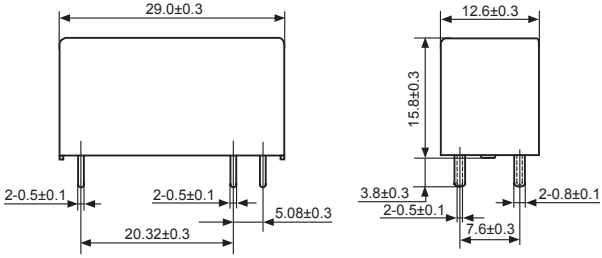


Wiring Diagram
(Bottom View)

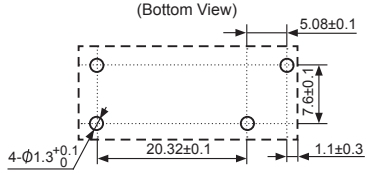


1 Form A

Outline (5mm)



Mounting Hole Layout
(Bottom View)

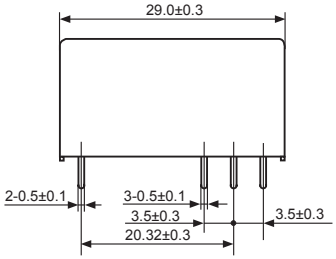


Wiring Diagram
(Bottom View)

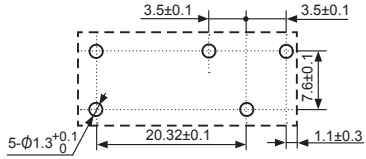
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form C

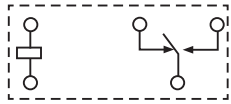
Outline (3.5mm)



Mounting Hole Layout
(Bottom View)

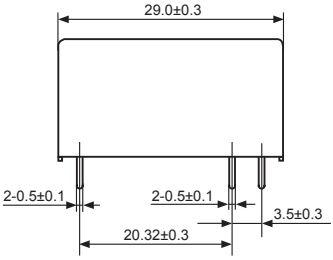


Wiring Diagram
(Bottom View)

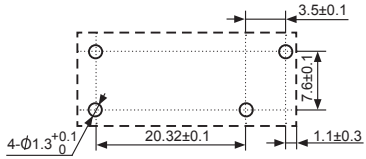


1 Form A

Outline (3.5mm)



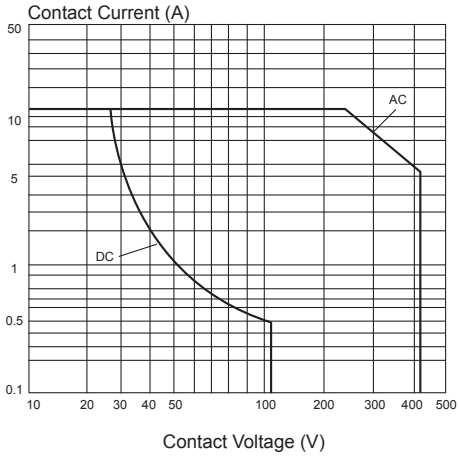
Mounting Hole Layout
(Bottom View)



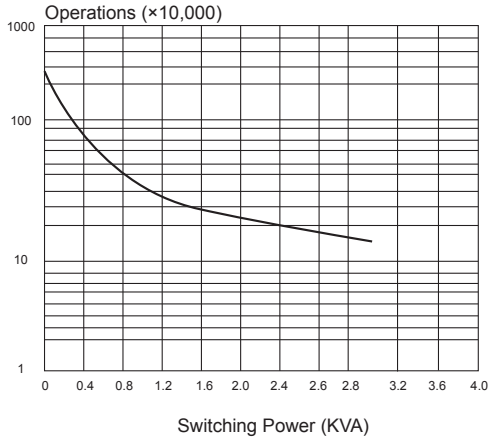
Wiring Diagram
(Bottom View)

REFERENCE DATA

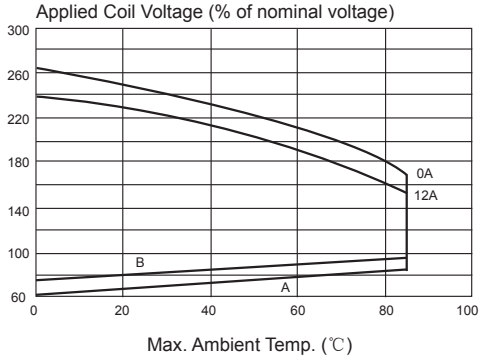
Maximum Switching Power



Life Curves



Max. Ambient Temp. Vs. Coil Voltage



A: Coil temperature = Ambient temperature.
B: 110% of nominal coil voltage at rated contact load.

HCP2

POWER RELAY

Features

- Low profile, height 15.8mm
  Dimensions: 29.0×12.6×15.8(mm)
- Switching capacity 8A
- Contact: 2 Form A, 2 Form C
- Sensitivity 400mW
- Insulation: 5KV
  Creepage:10mm

Safety Approval

cULus NO.E164730 CQC NO.CQC09002030014
NO.50062453 VDE NO.40043990

Relay Picture

ORDERING INFORMATION

HCP2 – S – DC12V – C

Model	Enclosure	Coil Voltage	Contact Form
	S - Plastic Sealed Type	DC5V, DC6V, DC9V, DC12V, DC24V, DC48V	A - 2 Form A C - 2 Form C

SPECIFICATION

CONTACT DATA

Contact Form		2 Form A, 2 Form C
Contact Material		Ag Alloy
Contact Rating		Resistive：8A 250VAC/30VDC Inductive：4A 250VAC Cosφ=0.4
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	440VAC/120VDC
	Max. Switching Current	8A
	Max. Switching Power	2,000VA, 240W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
		50,000 operations (Inductive: Cosφ=0.4, L/R=7ms)
	Mechanical	20,000,000 operations

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	5,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 13.00g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	400mW

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A/C	0.4W	5-110VDC	8A 250VAC	Insulation calss：F Ambient Temperature: 85℃
TUV 50062453-0002	A/C	0.4W	5,6,9,12,24,48,60,110VDC	8A 250VAC	Ambient Temperature: 85℃
CQC09002030014 (GB/T 21711.1-2008)	A/C	0.4W	5,6,9,12,24,48,60,110VDC	8A 250VAC	Ambient Temperature: 85℃
VDE 40043990	A	0.4W	5,6,9,12,18,24,36,48VDC	8A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

HCP2

POWER RELAY

COIL DATA

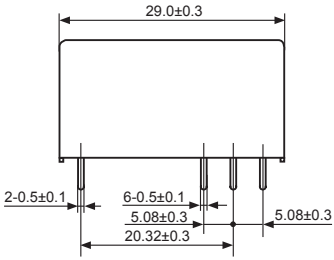
Ambient Temperature: 23℃

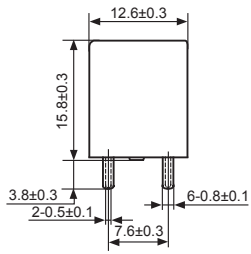
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HCP2-S-DC5V	5	62.5	3.5	0.5	400
HCP2-S-DC6V	6	90.0	4.2	0.6	
HCP2-S-DC9V	9	202.5	6.3	0.9	
HCP2-S-DC12V	12	360	8.4	1.2	
HCP2-S-DC24V	24	1440	16.8	2.4	
HCP2-S-DC48V	48	5760	33.6	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

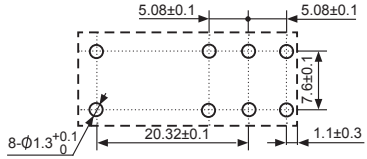
2 Form C

Outline

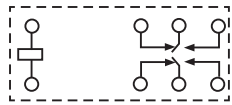




Mounting Hole Layout
(Bottom View)

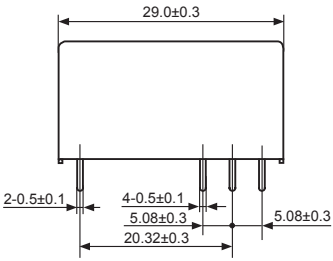


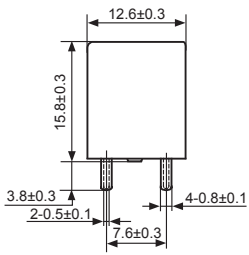
Wiring Diagram
(Bottom View)



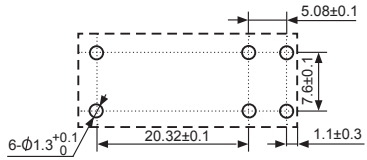
2 Form A

Outline





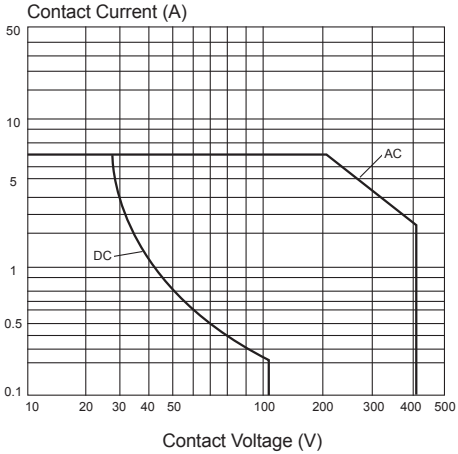
Mounting Hole Layout
(Bottom View)



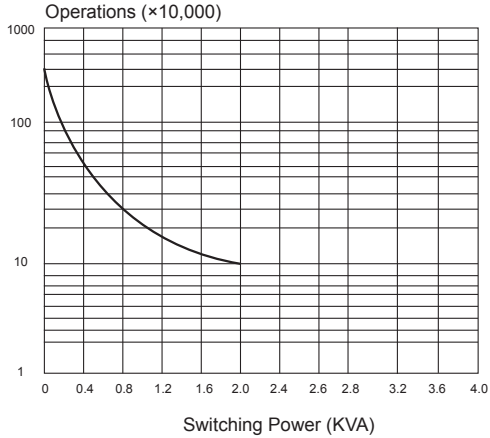
Wiring Diagram
(Bottom View)

REFERENCE DATA

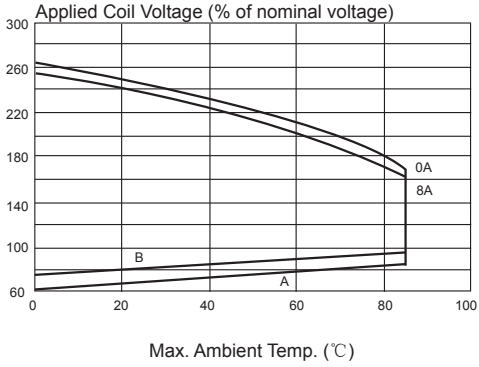
Maximum Switching Power



Life Curve



Max. Ambient Temp. Vs. Coil Voltage



A: Coil temperature = Ambient temperature.
B: 110% of nominal coil voltage at rated contact load.

HCP3

POWER RELAY

Features

- Low profile, height 15.8mm
  Dimensions: 29.0×12.6×15.8(mm)
- Switching capacity 16A
- Contact: 1 Form A, 1 Form B,1 Form C
- Sensitivity: 400mW,250mW
- Insulation: 5KV
  Creepage:10mm

Safety Approval

c UL us NO.E164730 cqc NO.CQC09002030014
NO.50097843 VDE NO.40043990

Relay Picture

ORDERING INFORMATION

HCP3 [H] - [S] - [DC12V] - [C]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H-High Sensitivity (250mW) Blank-Standard (400mW)	S - Plastic Sealed Type	DC5V, DC6V, DC9V DC12V, DC24V, DC48V	A - 1 Form A B - 1 Form B C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A,1 Form B,1 Form C
Contact Material		Ag Alloy
Contact Rating		Resistive：16A 250VAC/30VDC Inductive：8A 250VAC Cosφ=0.4
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	440VAC/120VDC
	Max. Switching Current	16A
	Max. Switching Power	4,000VA, 480W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
		50,000 operations (Resistive: Cosφ=0.4, L/R=7ms)
	Mechanical	20,000,000 operations

COIL DATA

Nominal Coil Power	250mW,400mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	5,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 13.00g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
TUV 50097843	A/C	0.4W	5-48VDC	16A 250VAC	Ambient Temperature: 85℃
CQC09002030014 (GB/T 21711.1-2008)	A/C	0.4W	5,6,9,12,24,48,60,110VDC	16A 250VAC	Ambient Temperature: 85℃
VDE 40043990	A/B/C	0.4W	5,6,9,12,18,24,36,48VDC	16A 250VAC	Ambient Temperature: 85℃
	C	0.4W	5,6,9,12,18,24,36,48VDC	NO/NC:16A/5A 250VAC	Ambient Temperature: 105℃

ISO9001、ISO/TS16949、ISO14001 Approved

HCP3

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A/C	0.4W	5-110VDC	20A 250VAC(NO)	Insulation calss:F Ambient Temperature: 85℃
	A/B/C	0.4W/0.25W	5-110VDC	16A 250VAC	Insulation calss:F Ambient Temperature: 85℃
	B/C	0.4W/0.25W	5-110VDC	16A 250VAC(NC)	Insulation calss:F Ambient Temperature: 85℃
	A/C	0.4W	5-110VDC	TV-5 250VAC(NO)	Insulation calss:F Ambient Temperature: 40℃
	B/C	0.4W	5-110VDC	TV-5 250VAC(NC)	Insulation calss:F Ambient Temperature: 25℃

Specifications subject to change without notice

COIL DATA

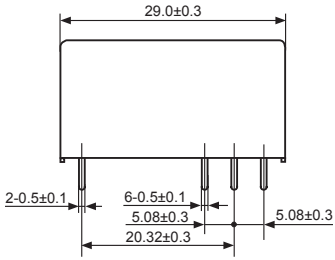
Ambient Temperature: 23℃

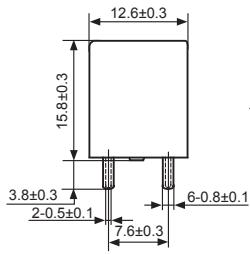
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HCP3-S-DC5V	5	62.5	3.5	0.5	400
HCP3-S-DC6V	6	90.0	4.2	0.6	
HCP3-S-DC9V	9	202.5	6.3	0.9	
HCP3-S-DC12V	12	360	8.4	1.2	
HCP3-S-DC24V	24	1440	16.8	2.4	
HCP3-S-DC48V	48	5760	33.6	4.8	
HCP3H-S-DC5V	5	100	3.75	0.5	250
HCP3H-S-DC6V	6	144	4.5	0.6	
HCP3H-S-DC9V	9	324	6.75	0.9	
HCP3H-S-DC12V	12	576	9.0	1.2	
HCP3H-S-DC24V	24	2304	18.0	2.4	
HCP3H-S-DC48V	48	9216	36.0	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

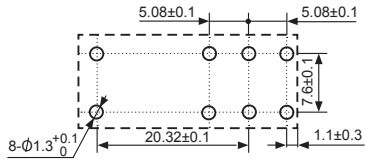
1 Form C

Outline

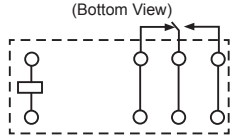




Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



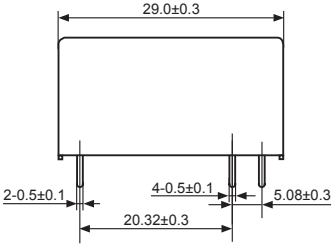
HCP3

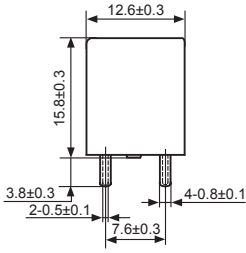
POWER RELAY

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

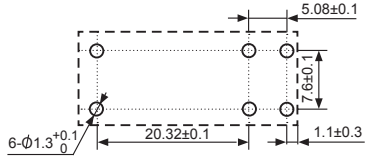
1 Form A

Outline

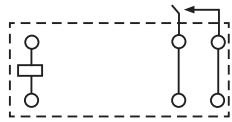




Mounting Hole Layout
(Bottom View)

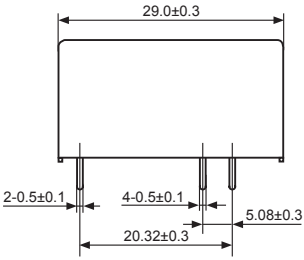


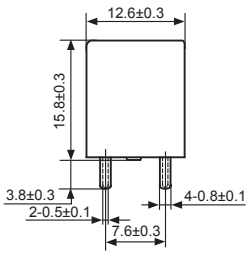
Wiring Diagram
(Bottom View)



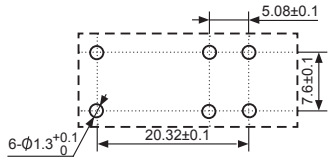
1 Form B

Outline

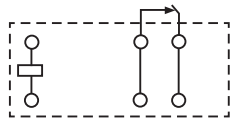




Mounting Hole Layout
(Bottom View)

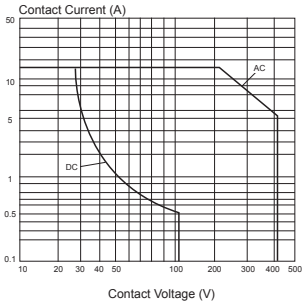


Wiring Diagram
(Bottom View)

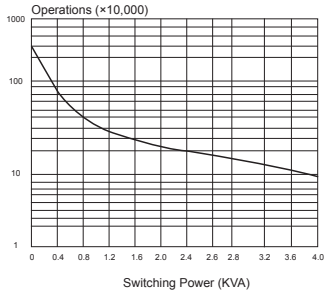


REFERENCE DATA

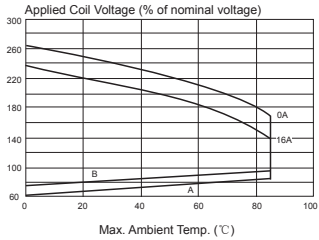
Maximum Switching Power



Life Curve



Max. Ambient Temp. Vs. Coil Voltage



A: Coil temperature = Ambient temperature.
B: 110% of nominal coil voltage at rated contact load.

HCP4

POWER RELAY

Features

- Slim type, width 10.0mm
  Dimensions: 28.4×10.0×12.7(mm)
- Contact: 1 Form A, 1 Form C
- High sensitivity 220
- High isolation and Insulation distance 8mm

Safety Approval

c US NO.E164730 cqc NO.CQC09002030019
VDE NO.40024317

Relay Picture

ORDERING INFORMATION

HCP4 – [S] – [DC12V] – [C]

Model	Enclosure	Coil Voltage	Contact Form
	S - Plastic Sealed Type	DC5V, DC6V, DC9V, DC12V, DC18V, DC24V, DC48V	A - 1 Form A C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		8A 250VAC/30VDC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	440VAC/30VDC
	Max. Switching Current	10A
	Max. Switching Power	2,000VA, 240W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	20,000,000 operations

COIL DATA

Nominal Coil Power	220mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	5,000VAC, 1min
Operate Time		Max. 15ms
Release Time		Max. 8ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 8.00g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A/C	220mW	5 - 48VDC	Resitive: 8A 250VAC	Ambient Temperature: 85℃
				8A 250VAC	Ambient Temperature: 85℃
				2 FLA/12 LRA, 250VAC	
				C300, 250VAC	
VDE 40024317	A/C	220mW	5 - 48VDC	8A 250VAC	Ambient Temperature: 85℃
CQC09002030019 (GB/T 21711.1-2008)	A/C	220mW	5 - 48VDC	8A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

HCP4

POWER RELAY

COIL DATA

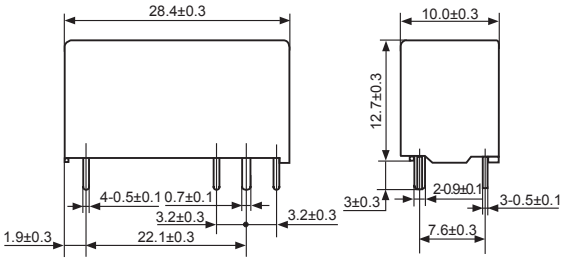
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
HCP4-S-DC5V	5	113	3.5	0.5	220
HCP4-S-DC6V	6	164	4.2	0.6	
HCP4-S-DC9V	9	350	6.3	0.9	
HCP4-S-DC12V	12	620	8.4	1.2	
HCP4-S-DC18V	18	1295	12.6	1.8	
HCP4-S-DC24V	24	2350	16.8	2.4	
HCP4-S-DC48V	48	9600	33.6	4.8	

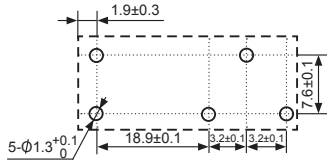
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form C

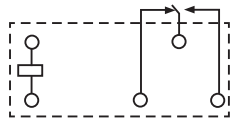
Outline (3.2mm)



Mounting Hole Layout
(Bottom View)

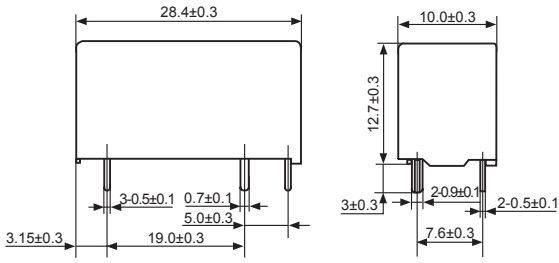


Wiring Diagram
(Bottom View)

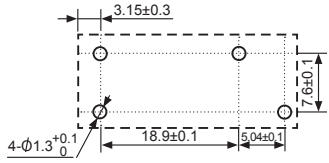


1 Form A

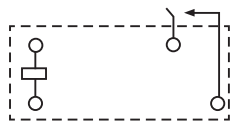
Outline (5.0mm)



Mounting Hole Layout
(Bottom View)

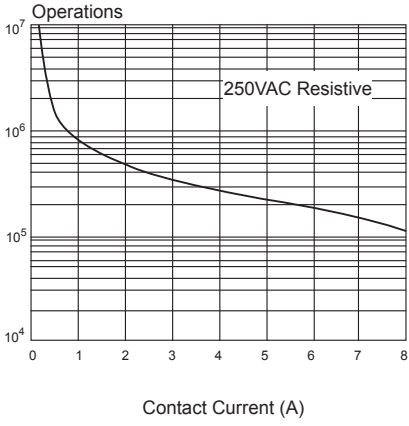


Wiring Diagram
(Bottom View)

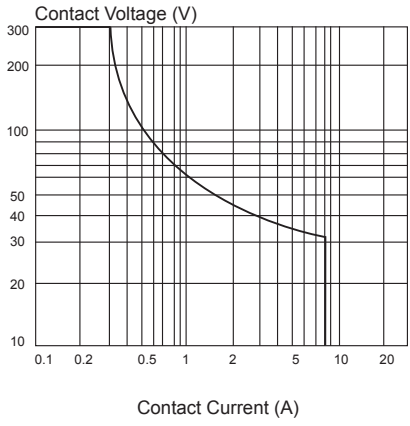


REFERENCE DATA

Life Curve



Maximum Switching Power



F5

POWER RELAY

Features

- Compact and small in size
  Dimensions: 24.2×12.3×20.1(mm)
- Max.Switching capacity: 20A
- Dielectric strength of 5000V between coil and contacts
- Available in PCB or quick connect terminals
- Ideal for switching magnetron and heater loads in microwave oven

Safety Approval

c US NO.E164730 cqc NO.CQC08001022889
VDE NO.40025393 NO.50130793

Relay Picture

ORDERING INFORMATION

F5 [H] - [DC12V] - [P1]

Model	Coil Sensitivity	Coil Voltage	PCB Type
	H - High Sensitivity (400mW) Blank - Standard (500mW)	DC3V, DC5V, DC6V, DC9V, DC12V, DC18V, DC24V, DC48V	P1 - PCB Type 1 P2 - PCB Type 2 P3 - PCB Type 3

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		16A 250VAC, 20A 125VAC
Contact Resistance		Max. 100mΩ (24VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	20A
	Max. Switching Power	4,000VA, 480W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations (16A 250VAC)
	Mechanical	2,000,000 operations

COIL DATA

Nominal Coil Power	500mW, 400mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	5,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	150m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 10.00g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.5W/0.4W	3 - 48VDC	16A 250VAC 20A 125VAC	Ambient Temperature: 95℃
VDE 40025393	A	0.5W/0.4W	3 - 24VDC	16A 250VAC	Insulation calss:F Ambient Temperature: 85℃
TUV 50130793	A	0.5W/0.4W	3 - 48VDC	16A 250VAC	Ambient Temperature: 85℃
CQC08001022889	A	0.5W/0.4W	3 - 48VDC	16A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

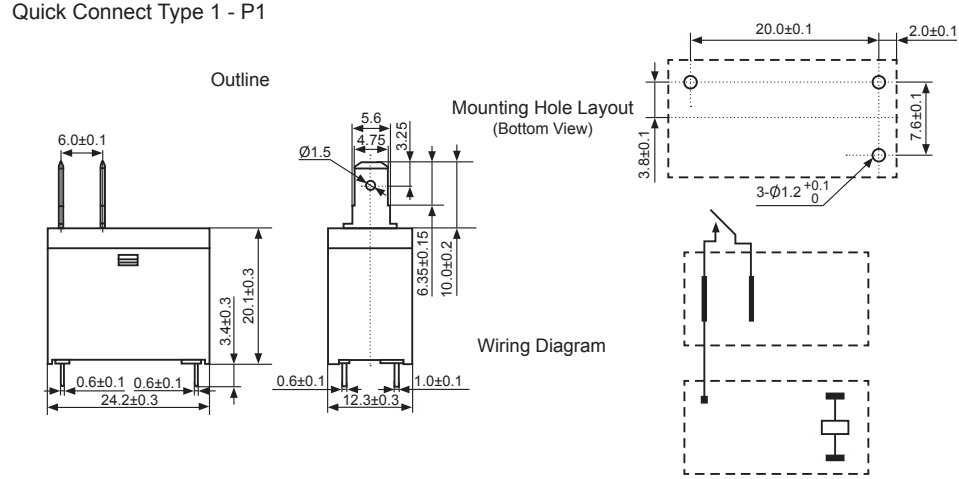
COIL DATA

Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
F5-DC3V-P1/P2/P3	3	18	2.25	0.3	500
F5-DC5V-P1/P2/P3	5	50	3.75	0.5	
F5-DC6V-P1/P2/P3	6	72	4.5	0.6	
F5-DC9V-P1/P2/P3	9	162	6.75	0.9	
F5-DC12V-P1/P2/P3	12	288	9.0	1.2	
F5-DC18V-P1/P2/P3	18	648	13.5	1.8	
F5-DC24V-P1/P2/P3	24	1152	18.0	2.4	
F5-DC48V-P1/P2/P3	48	4608	36.0	4.8	
F5H-DC3V-P1/P2/P3	3	22.5	2.25	0.3	400
F5H-DC5V-P1/P2/P3	5	62.5	3.75	0.5	
F5H-DC6V-P1/P2/P3	6	90	4.5	0.6	
F5H-DC9V-P1/P2/P3	9	202.5	6.75	0.9	
F5H-DC12V-P1/P2/P3	12	360	9.0	1.2	
F5H-DC18V-P1/P2/P3	18	810	13.5	1.8	
F5H-DC24V-P1/P2/P3	24	1440	18.0	2.4	
F5H-DC48V-P1/P2/P3	48	5760	36.0	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

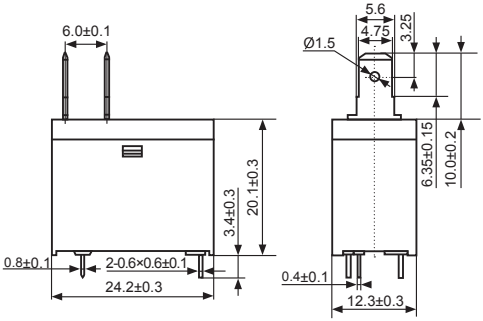
Quick Connect Type 1 - P1



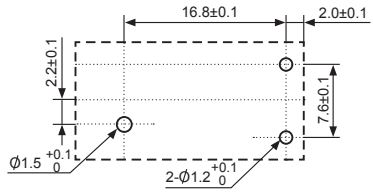
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Quick Connect Type 2 - P2

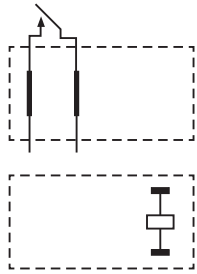
Outline



Mounting Hole Layout
(Bottom View)

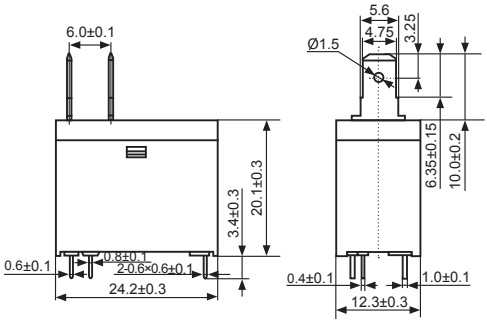


Wiring Diagram

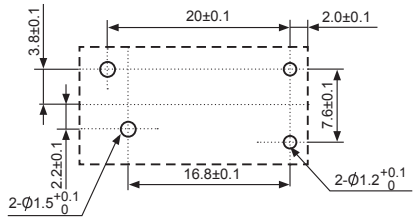


Quick Connect Type 3 - P3

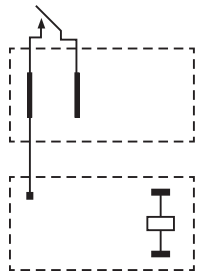
Outline



Mounting Hole Layout
(Bottom View)

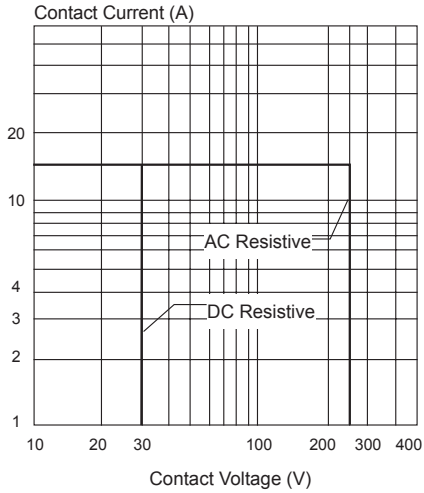


Wiring Diagram

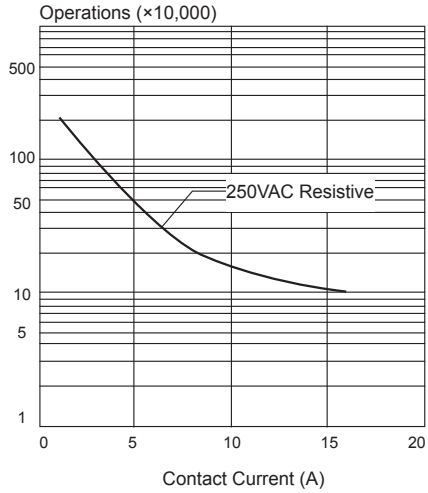


REFERENCE DATA

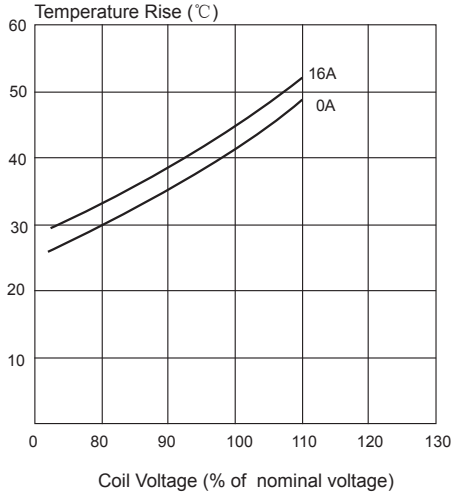
Maximum Switching Power



Life Curve



Coil Temperature Rise



F6

POWER RELAY

Features

- Miniature relay with high switching contact capacity, 20A/250VAC and 25A/250VAC
- Low profile, height 16mm
  Dimensions: 30.5×16.0×20.1(mm)
- Dielectric strength of 5000V between coil and contacts
- Ideal for switching compressor and inverter loads
- Available in both PCB and quick connect terminals
- Applications: Air conditioners, refrigerators, OA equipment, etc

Safety Approval

c UL us NO.E164730
NO.E322395
VDE NO.40028681
CQC NO.CQC09002033819

Relay Picture

ORDERING INFORMATION

F6 - S - DC12V - P

Model	Enclosure	Coil Voltage	Terminal Type
	S - Plastic Sealed Type	DC5V, DC6V, DC9V, DC12V, DC24V	Blank - Quick Connection Terminals P - PCB Terminals

Remark: 1. Available in 1 Form A only

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		F6:25A 250VAC (Resistive) F6-P:20A 250VAC (Resistive) 20FLA/80LRA 120VAC
Contact Resistance		Max. 100mΩ (24VDC 1A)
Load	Max. Switching Voltage	250VAC
	Max. Switching Current	25A
	Max. Switching Power	6,250VA
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	900mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,500VAC, 1min
	Between coil and contacts	5,000VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 18.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating		Remarks
UL E164730	A	0.9W	5,6,9, 12,24VDC	20A 250VAC	25A 250VAC	Class F Insulation Ambient Temperature: 85℃
UL E322395	A	0.9W	5,6,9, 12,24VDC	HP:2HP 240VAC FLA/LRA:20/80A, 120VAC		Ambient Temperature: 85℃
VDE40028681	A	0.9W	5,6,9, 12,24VDC	25A 250VAC		Class F Insulation Ambient Temperature: 85℃
CQC09002033819	A	0.9W	5,6,9, 12,24VDC	25A 250VAC		Ambient Temperature: 85℃
Explosion-proof Certificate CNEx16.3132U	A	0.9W	12VDC	20A 250VAC	25A 250VAC	Mark: Ex nC IIC Gc

Specifications subject to change without notice

ISO9001、ISO/TS16949、ISO14001 Approved

COIL DATA

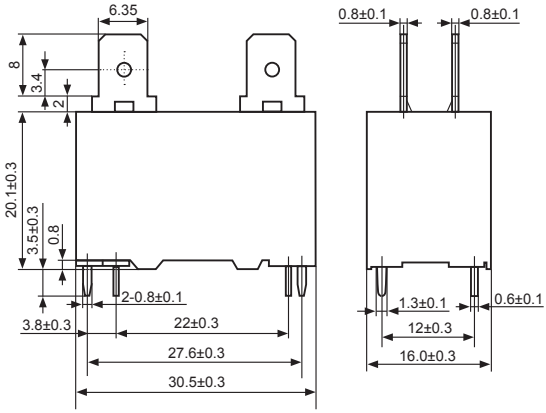
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
F6-S-DC5V	5	27.8	3.5	0.5	900
F6-S-DC6V	6	40	4.2	0.6	
F6-S-DC9V	9	90	6.3	0.9	
F6-S-DC12V	12	160	8.4	1.2	
F6-S-DC24V	24	640	16.8	2.4	
F6-S-DC5V-P	5	27.8	3.5	0.5	
F6-S-DC6V-P	6	40	4.2	0.6	
F6-S-DC9V-P	9	90	6.3	0.9	
F6-S-DC12V-P	12	160	8.4	1.2	
F6-S-DC24V-P	24	640	16.8	2.4	

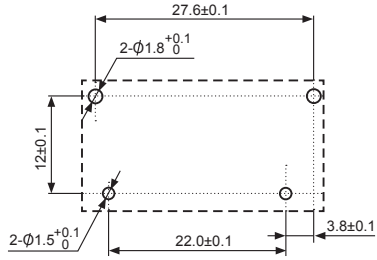
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Quick Connect Type

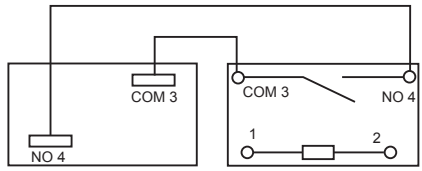
Outline



Mounting Hole Layout
(Bottom View)



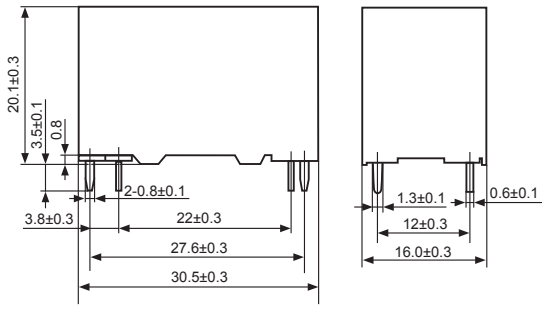
Wiring Diagram



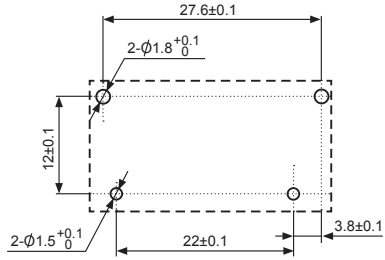
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

PCB Type

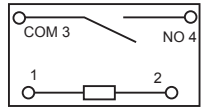
Outline



Mounting Hole Layout
(Bottom View)

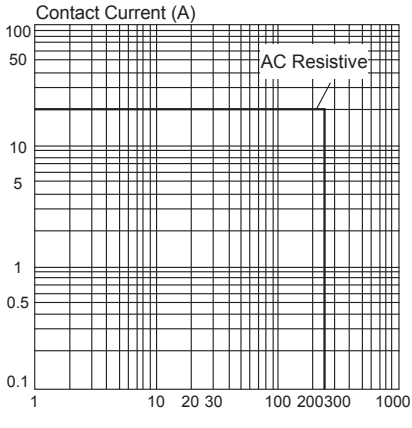


Wiring Diagram
(Bottom View)

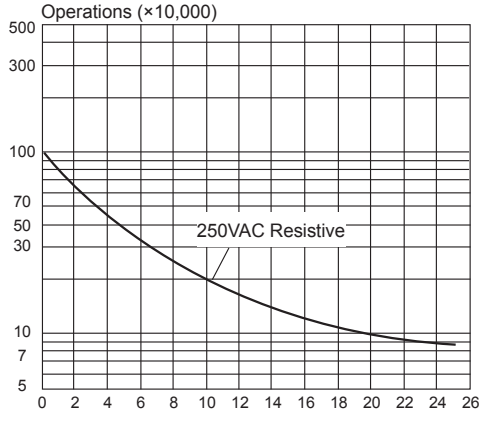


REFERENCE DATA

Maximum Switching Power



Life Curve



CMP6

POWER RELAY

Features

- Miniature relay with high switching contact capacity, 20A/250VAC
- Dielectric strength of 4500V between coil and contacts
- Ideal for switching compressor and inverter loads
- Available in both PCB and quick connect terminals
- Applications: Air conditioners, refrigerators, OA equipment, etc

Safety Approval

c UL us NO.E164730 NO.E322395
cqc NO.CQC08002027610
NO.50091133
SP NO.1369391(LR 109368)

Relay Picture

ORDERING INFORMATION

CMP6 – S – DC12V – P

Model	Enclosure	Coil Voltage	Terminal Type
	S - Plastic Sealed Type	DC5V, DC12V, DC24V	Blank - Quick Connect Terminals P - PCB Terminals

Remark: 1. Available in 1 Form A only

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		Resistive: 20A 250VAC/30VDC Inrush Current: 80A Break Current: 20A
Contact Resistance		Max. 100mΩ(6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	20A
	Max. Switching Power	5,000VA, 600W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	20,000,000 operations

COIL DATA

Nominal Coil Power	900mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC, 1min
	Between coil and contacts	4,500VAC, 1min
Operate Time		Max. 20ms
Release Time		Max. 10ms
Operating Temperature		-20℃ to +55℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 21.0g

Note:Data shown are of initial value

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	A	0.9W	5 - 24VDC	20A 250VAC 12A 250VAC, 2HP	Ambient Temperature: 55℃
UL E322395	A	0.9W	5 - 24VDC	HP: 2HP 240VAC FLA/LRA: 20/80A, 120VAC	Ambient Temperature: 55℃

CMP6

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
CSA 1369391 (LR 109368)	A	0.9W	5 - 24VDC	20A 250VAC	Ambient Temperature: 23℃
TUV 50091133	A	0.9W	5, 12, 24VDC	20A 250VAC, cosΦ=0.9 Inrush Current: 80A 250VAC, 0.3s, cosΦ=0.7	Ambient Temperature: 85℃
CQC08002027610 (GB/T 21711.1-2008)	A	0.9W	5 - 24VDC	20A 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

COIL DATA

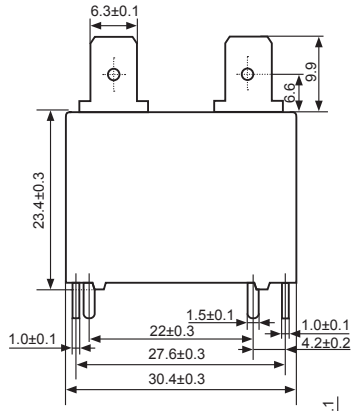
Ambient Temperature: 23℃

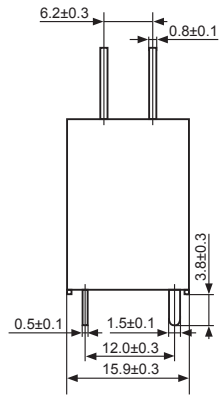
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
CMP6-S-DC5V	5	27.8	3.5	0.5	900
CMP6-S-DC12V	12	160	8.4	1.2	
CMP6-S-DC24V	24	640	16.8	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

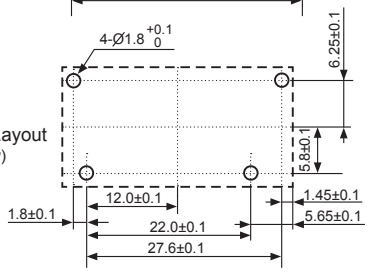
Quick connect type

Outline

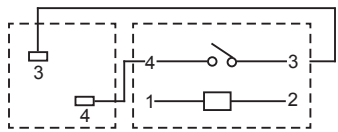




Mounting Hole Layout
(Bottom View)

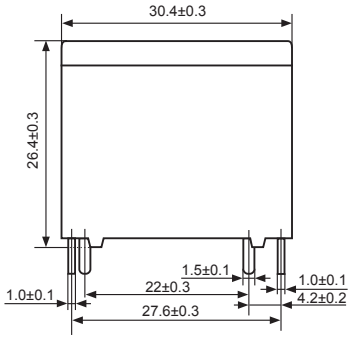


Wiring Diagram

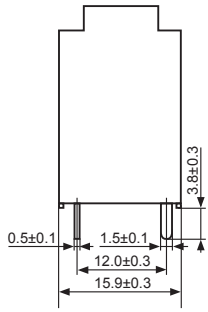


OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

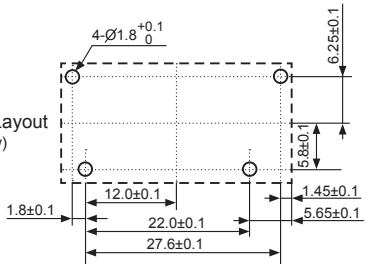
PCB type



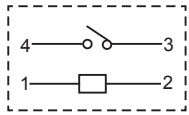
Outline



Mounting Hole Layout
(Bottom View)

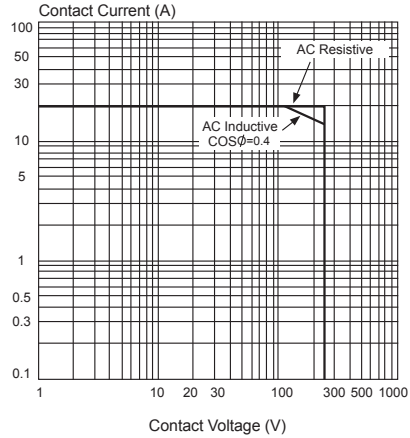


Wiring Diagram
(Bottom View)

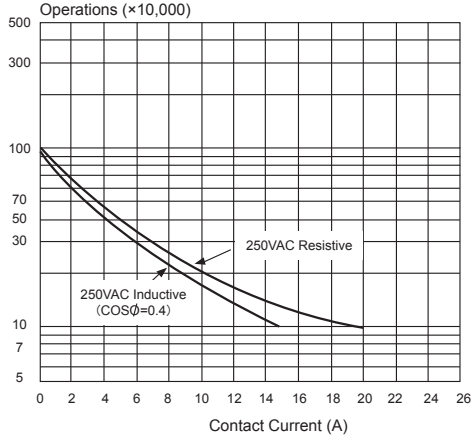


REFERENCE DATA

Maximum Switching Power



Life Curves



CMP7

POWER RELAY

Features

- High contact capacity in a compact package, up to 40A/250VAC
- Available in both open frame and plastic sealed package
- UL class F insulation system
- Applications: Industrial and home appliances, HVAC, etc

Safety Approval

c UL us NO.E164730 cqc NO.CQC08002027615
VDE NO.40009646 NO.50125641

Relay Picture

ORDERING INFORMATION

CMP7 – [S] – [DC12V] – [A] [T] *R

Model	Enclosure	Coil Voltage	Contact Form	Contact Rating
	S - Plastic Sealed Type Blank - Open Type	DC5V,DC6V,DC9V DC12V,DC24V,DC48V	A - 1 Form A C - 1 Form C	Blank - A:30A 250VAC/24VDC C:NO:20A 250VAC/24VDC NC:15A 250VAC/24VDC T - A:40A 250VAC/24VDC C:NO:40A 250VAC/24VDC NC:30A 250VAC/24VDC

Remark: *R - Without common terminal

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C	
Contact Material		Ag Alloy	
Contact Rating		A :30A 250VAC/24VDC AT : 40A 250VAC/24VDC C:NO:20A 250VAC/24VDC NC:15A 250VAC/24VDC CT :NO:40A 250VAC/24VDC NC:30A 250VAC/24VDC	
Contact Resistance		Max.100mΩ(6VDC 1A)	
Load	Max. Switching Voltage	250VAC/28VDC	
	Max. Switching Current	40A(T)	30A
	Max. Switching Power	7,500VA,560W	
	Min. Switching Load	5VDC,100mA	
Life	Electrical	100,000次	
	Mechanical	10,000,000次	

GENERAL DATA

Insulation Resistance		Min.1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,500VAC,1min
	Between coil and contacts	2,500VAC,1min
Operate Time		Max.15ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 27.0g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	900mW

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E164730	C	0.9W	5-48VDC	NO/NC：20A/15A 125VAC	Class F insulation Ambient Temperature: 85℃
	A	0.9W	5-48VDC	30A 125VAC	
	CT	0.9W	5-48VDC	NO/NC：40A/30A 250VAC	Class F insulation Ambient Temperature:40℃
	AT	0.9W	5-48VDC	40A 250VAC	
	C	0.9W	5-48VDC	B300	Class F insulation Ambient Temperature: 85℃
	A	0.9W	5-48VDC	C300 / R300	
CQC08002027615 (GB/T 21711.1-2008)	A	0.9W	5-48VDC	30A 250VAC	Ambient Temperature: 85℃
	C	0.9W	5-48VDC	NO/NC:20A/15A 250VAC	

ISO9001、ISO/TS16949、ISO14001 Approved

CMP7

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
VDE 40009646	A	0.9W	5 - 48VDC	30 250VAC	Ambient Temperature: 70℃
	C	0.9W	5 - 48VDC	NO：20A 250VAC NC：15A 250VAC/24VDC	
TUV 50125641-0001	A	0.9W	5 - 48VDC	30A 250VAC	Ambient Temperature: 85℃
	C	0.9W	5 - 48VDC	NO/NC: 20A/15A 250VAC	
TUV 50125641-0002 (EN 60730-1)	A	0.9W	5 - 48VDC	30(8)A 250VAC	Ambient Temperature: 85℃
	C	0.9W	5 - 48VDC	NO/NC: 20(4)A/15(3)A 250VAC	

Specifications subject to change without notice

COIL DATA

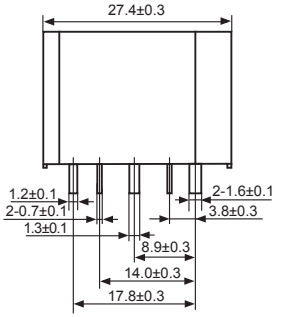
Ambient Temperature: 23℃

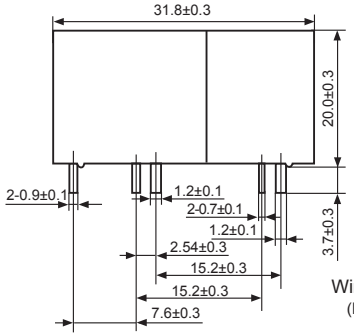
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
CMP7-S-DC5V	5	27.8	3.5	0.5	900
CMP7-S-DC6V	6	40.0	4.2	0.6	
CMP7-S-DC9V	9	90.0	6.3	0.9	
CMP7-S-DC12V	12	160	8.4	1.2	
CMP7-S-DC24V	24	640	16.8	2.4	
CMP7-S-DC48V	48	2560	33.6	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

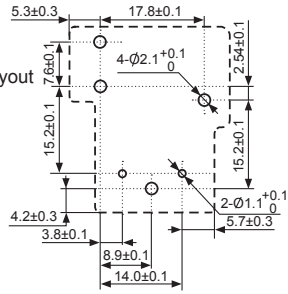
CMP7-DC××V-C
CMP7-S-DC××V-C

Outline

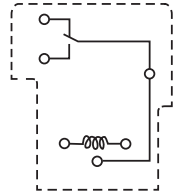




Mounting Hole Layout
(Bottom View)



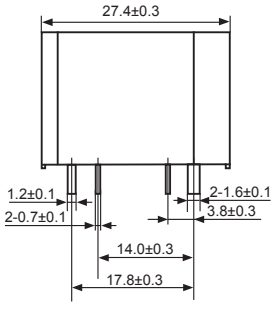
Wiring Diagram
(Bottom View)

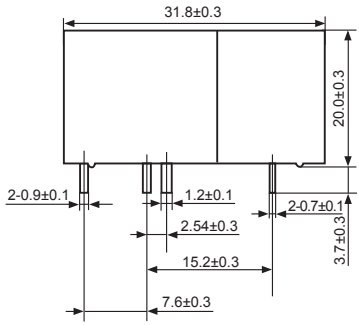


OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

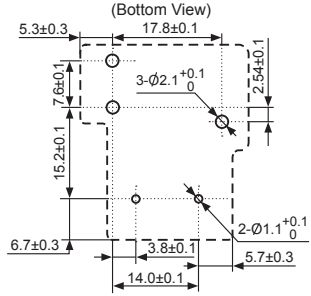
CMP7-DC××V-C-R
CMP7-S-DC××V-C-R

Outline

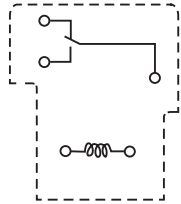




Mounting Hole Layout
(Bottom View)

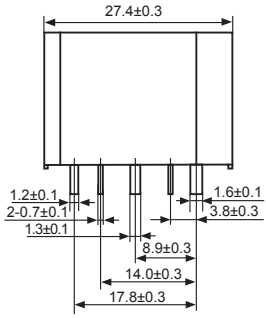


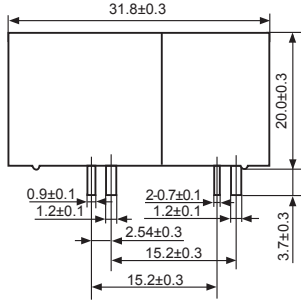
Wiring Diagram
(Bottom View)



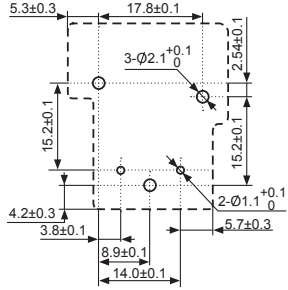
CMP7-DC××V-A
CMP7-S-DC××V-A

Outline

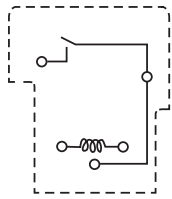




Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



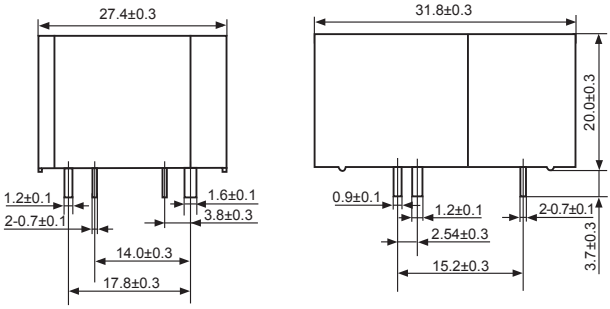
CMP7

POWER RELAY

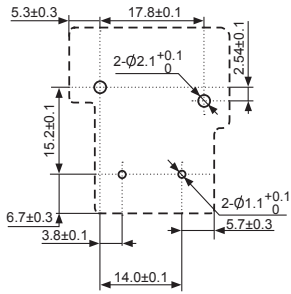
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

CMP7-DC××V-A-R
CMP7-S-DC××V-A-R

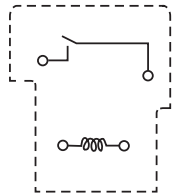
Outline



Mounting Hole Layout
(Bottom View)

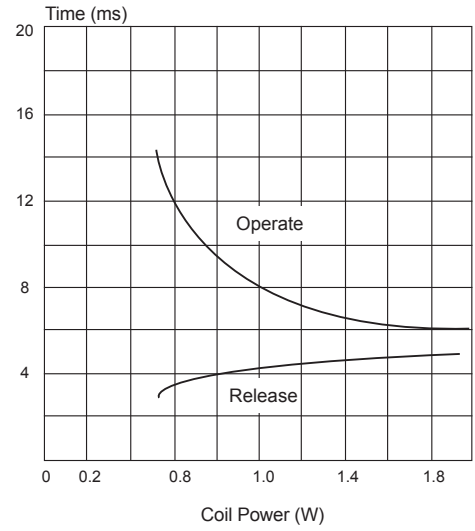


Wiring Diagram
(Bottom View)

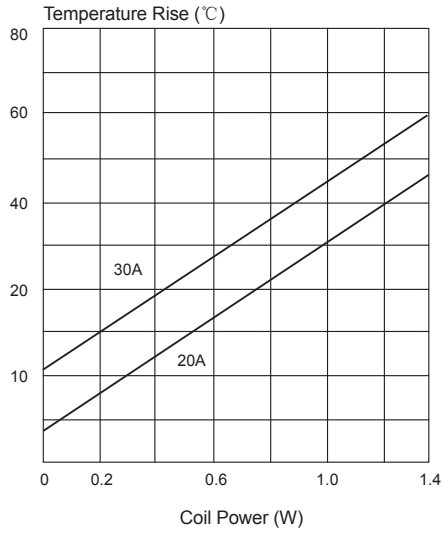


REFERENCE DATA

Time Curve

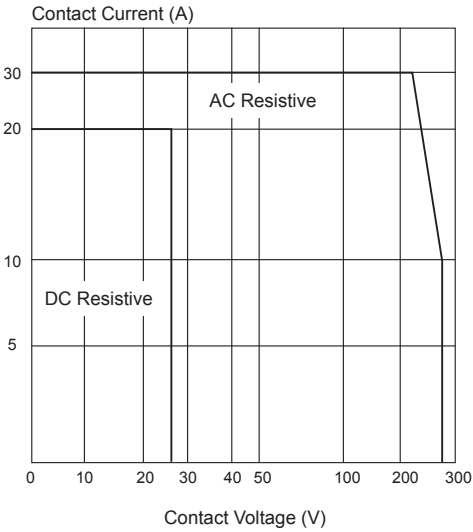


Coil Temperature Rise

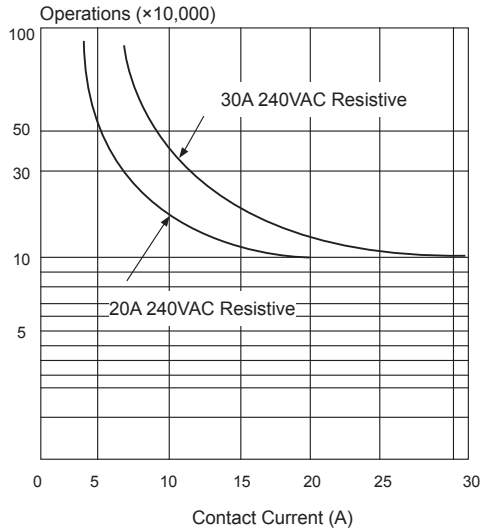


REFERENCE DATA

Maximum Switching Power



Life Curves



CMP8

POWER RELAY

Features

- High contact capacity, up to 30A/250VAC
- Dielectric strength of 2500V between coil and contacts
- Available in both PCB and quick connect terminals
- Exposed or concealed quick connect terminals
- Applications: industrial and home appliances, HVAC, etc

Safety Approval

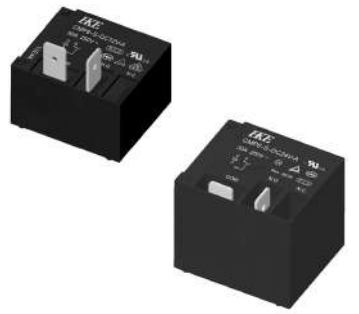
c UL us NO.E164730 NO.E322395

CQC NO.CQC08002027613

NO.50125643

VDE NO.40009646

Relay Picture



ORDERING INFORMATION

CMP8 – S – DC12V – A

Model	Enclosure	Coil Voltage	Contact Form
	S - Plastic Sealed Type	DC5V, DC6V, DC9V, DC12V, DC24V, DC48V	A - 1 Form A C - 1 Form C AT - 1 Form A(Different quick connect terminals configuration)

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		A: 30A 250VAC/24VDC C: NO: 20A 250VAC/24VDC NC: 15A 250VAC/24VDC
Contact Resistance		Max. 100mΩ(6VDC 1A)
Load	Max. Switching Voltage	250VAC/28VDC
	Max. Switching Current	30A
	Max. Switching Power	7,500VA, 560W
	Min. Switching Load	5VDC, 100mA
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	900mW

GENERAL DATA

Insulation Resistance		Min. 1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,500VAC, 1min
	Between coil and contacts	2,500VAC, 1min
Operate Time		Max. 15ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 29.0g

Note:Data shown are of initial value

CMP8

POWER RELAY

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
TUV 50125643-0001	AT	0.9W	5-48VDC	30A 250VAC	Ambient Temperature: 85℃
TUV 50125643	A	0.9W	5-48VDC	30A 250VAC	Ambient Temperature: 85℃
	C	0.9W	5-48VDC	NO/NC:20A/15A 250VAC	
TUV 50125643-0002 (EN 60730-1)	A/AT	0.9W	5-48VDC	30(8)A 250VAC	Ambient Temperature: 85℃
	C	0.9W	5-48VDC	NO/NC:20(4)A/15(3)A 250VAC	
VDE 40009646	A	0.9W	5-48VDC	30A 250VAC	Ambient Temperature: 70℃
	C	0.9W	5-48VDC	NO：20A 250VAC NC：15A 250VAC/24VDC	
	AT	0.9W	5-48VDC	30A 250VAC	Ambient Temperature: 70℃
UL E164730	A	0.9W	5-48VDC	30A 250VAC	Insulation calss：F Ambient Temperature: 85℃
	C	0.9W	5-48VDC	NO/NC:20A/15A 250VAC	
	AT	0.9W	5-48VDC	30A 250VAC	Ambient Temperature: 55℃
UL E322395	C	0.9W	5-48VDC	NO:2HP 240VAC NC:1HP 240VAC	Ambient Temperature: 85℃
				NO:3/4HP 120VAC NC: 1/4HP 120VAC	Ambient Temperature: 85℃ NLDX category
	A	0.9W	5-48VDC	2HP 240VAC	Ambient Temperature: 85℃ NLDX category
				3/4HP 120VAC	
CQC08002027613 (GB/T 21711.1-2008)	A	0.9W	5-48VDC	30A 250VAC	Ambient Temperature: 85℃
	C	0.9W	5-48VDC	NO/NC:20/15A 250VAC	
Explosion-proof Certificate CNEx16.1221U	A	0.9W	5-48VDC	30A 250VAC	Mark: Ex nC IIC Gc
	C	0.9W	5-48VDC	NO/NC：20/15A 250VAC	

Specifications subject to change without notice

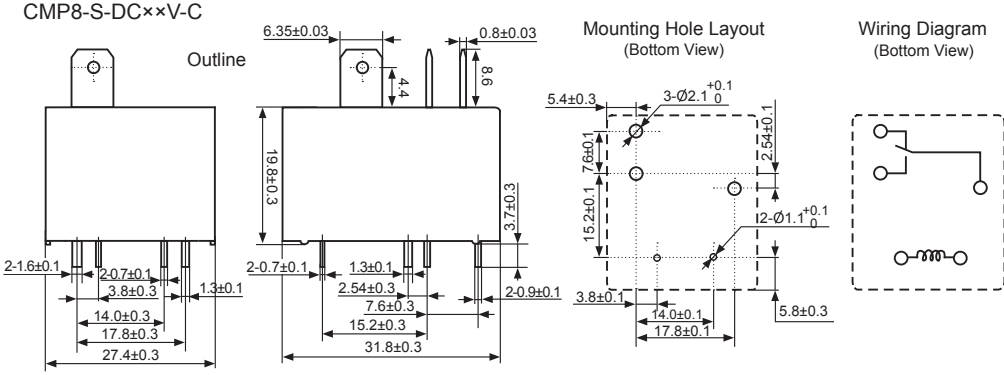
COIL DATA

Ambient Temperature: 23℃

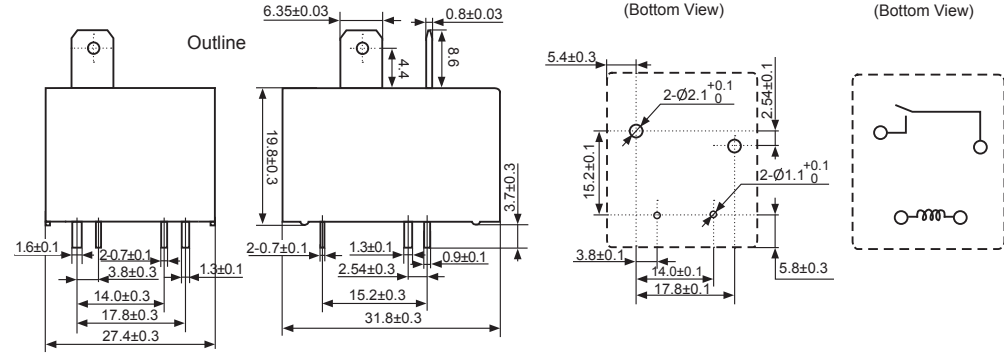
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
CMP8-S-DC5V	5	27.8	3.5	0.5	900
CMP8-S-DC6V	6	40.0	4.2	0.6	
CMP8-S-DC9V	9	90.0	6.3	0.9	
CMP8-S-DC12V	12	160	8.4	1.2	
CMP8-S-DC24V	24	640	16.8	2.4	
CMP8-S-DC48V	48	2560	33.6	4.8	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

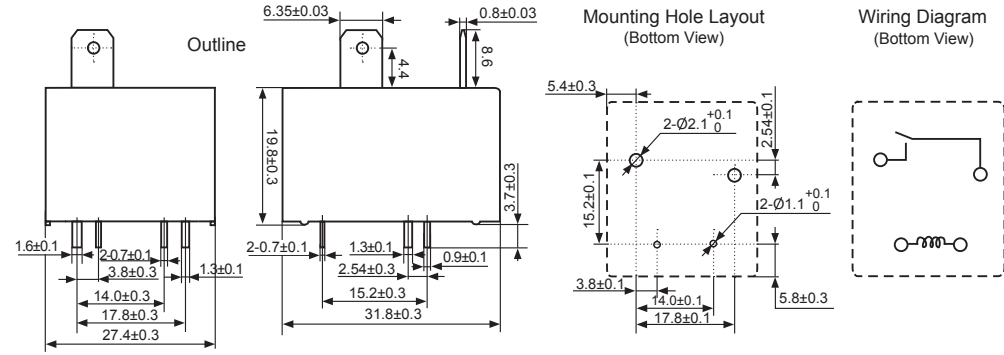
CMP8-S-DC××V-C



CMP8-S-DC××-A

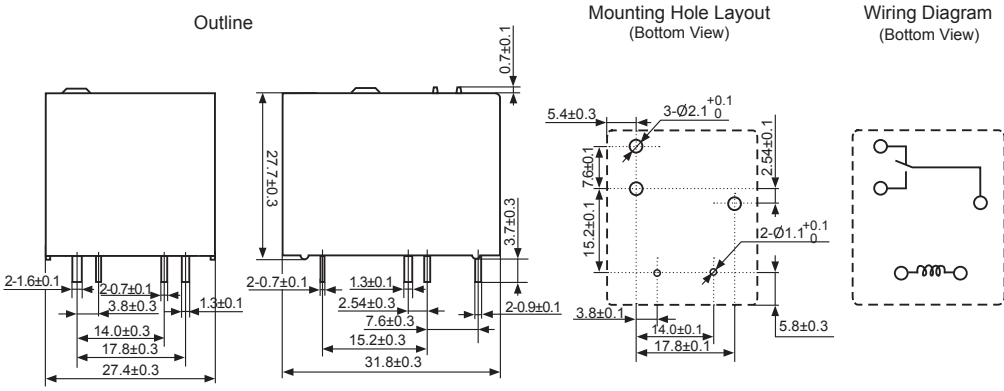


CMP8-S-DC××-AT

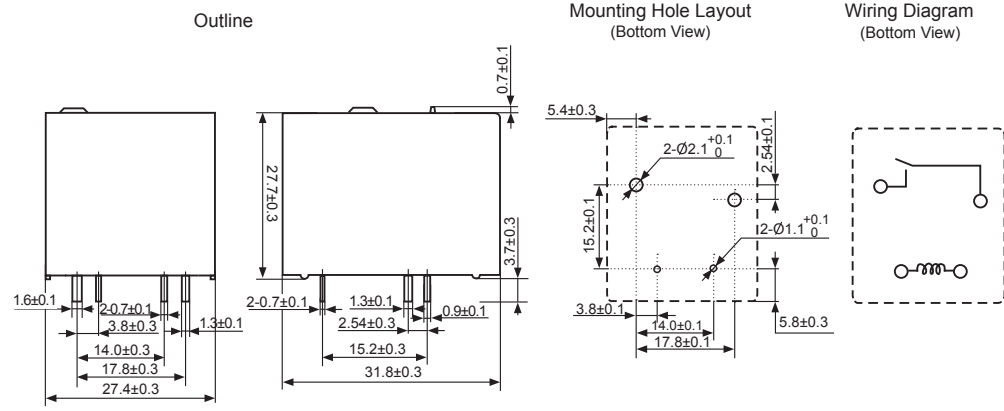


OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

CMP8-S-DC××-C - Concealed terminals

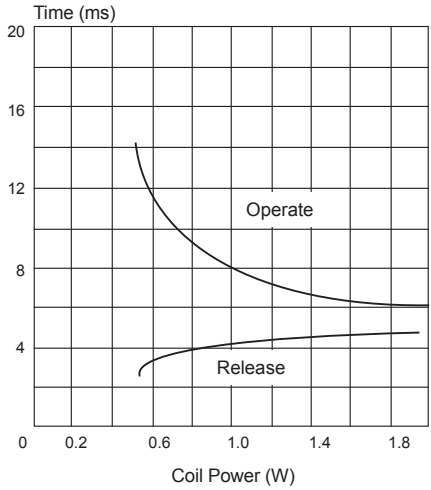


CMP8-S-DC××-A - Concealed terminals

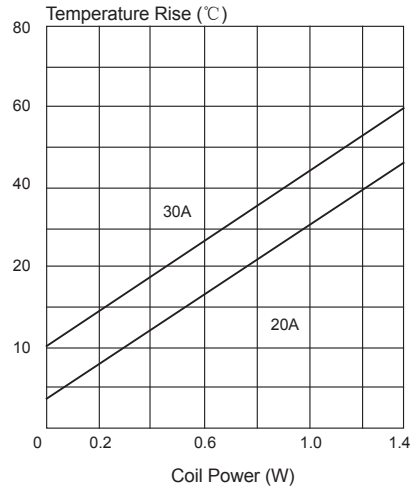


REFERENCE DATA

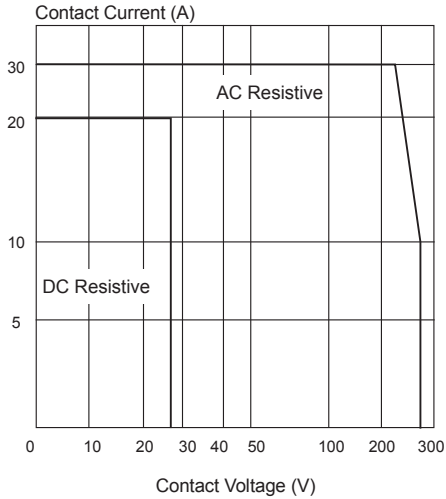
Time Curve



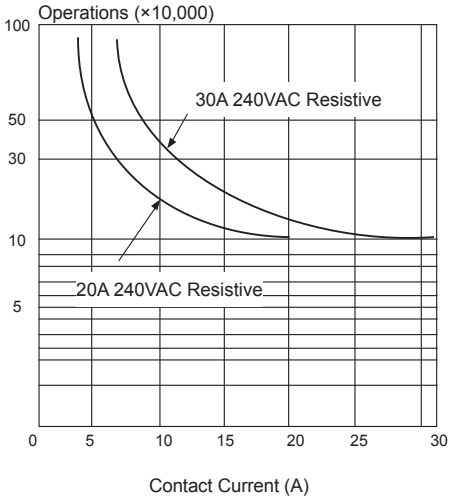
Coil Temperature Rise



Maximum Switching Power



Life Curves



LH

POWER RELAY

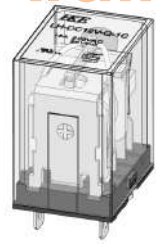
Features

- Dimensions: 27.6×21.6 ×35.0 (mm)
- Switching capacity: 15A
- Contact: 1 Form, 2 Form
- Transparent cover
- AC/DC Coil

Safety Approval

cULus NO.E164730

Relay Picture



ORDERING INFORMATION

LH – DC12V – D – Q – 1A

Model	Coil Voltage	Parallel Diode	Terminal Type	Contact Form
	DC5V,DC6V,DC12V, DC24V,DC48V,DC110V AC6V,AC12V,AC24V,AC48V, AC110/120V,AC220/240V	D - With Diode Blank - Standard	Q - Quick Connect Terminal Blank - PCB Terminal	1A - 1 Form A 2A - 2 Form A 1B - 1 Form B 2B - 2 Form B 1C - 1 Form C 2C - 2 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form B, 1 Form C 2 Form A, 2 Form B, 2 Form C
Contact Material		Ag Alloy
Contact Rating (Resistive)		1 Form: 15A 220VAC/28VDC 2 Form: 10A 220VAC/28VDC
Contact Resistance		Max.50mΩ(6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	1 Form: 15A, 2 Form: 10A
	Max. Switching Power	1 Form: 3300VA/420W 2 Form: 2200VA/280W
Life	Electrical	100,000 operations
	Mechanical	20,000,000 operations

COIL DATA

Nominal Coil Power	DC: 900mW, 1100mW
	AC: 1200mVA

GENERAL DATA

Insulation Resistance		Min.1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC,1min
	Between coil and contacts	1,500VAC,1min
	Between contacts sets	1,500VAC,1min
Operate Time		Max.25ms
Release Time		Max.25ms
Operating Temperature		-40℃ to +70℃
Humidity		98%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1mm double amplitude
	Misoperation	10~55Hz, 1mm double amplitude
Weight		Approximately 37g

Note:Data shown are of initial value

LH

POWER RELAY

COIL DATA

Ambient Temperature: 23℃

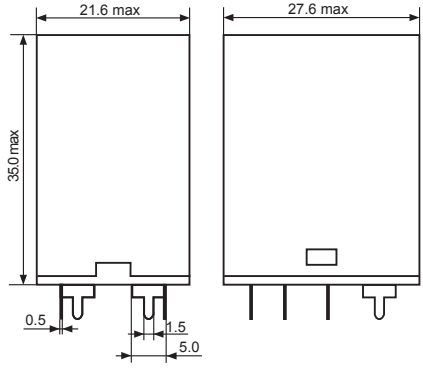
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
LH-DC5V	5	27.5	4.0	0.5	900
LH-DC6V	6	40	4.8	0.6	
LH-DC12V	12	160	9.6	1.2	
LH-DC24V	24	650	19.2	2.4	
LH-DC48V	48	2600	38.4	4.8	
LH-DC110V	110	11000	88.0	11.0	1100

Model	Nominal Voltage VAC	Coil Resistance Ω+/-10%	Operate Voltage ≤VAC	Release Voltage ≥VAC	Coil Power mVA
LH-AC6V	6	11.5	4.8	1.8	1200
LH-AC12V	12	46	9.6	3.6	
LH-AC24V	24	184	19.2	7.2	
LH-AC48V	48	735	38.4	14.4	
LH-AC110/120V	110/120	4550	88	36	
LH-AC220V/240V	220/240	14400	176	66	

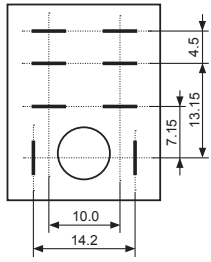
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

1 Form - PCB Terminal

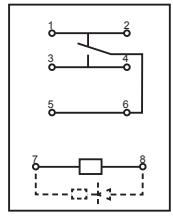
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)

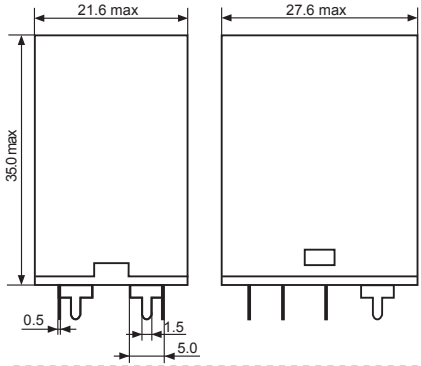


Remark: Form A: Without 1，2 terminal
Form B: Without 3，4 terminal

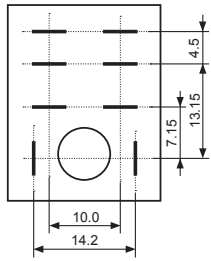
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

2 Form - PCB Terminal

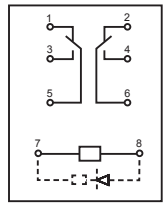
Outline



Mounting Hole Layout
(Bottom View)



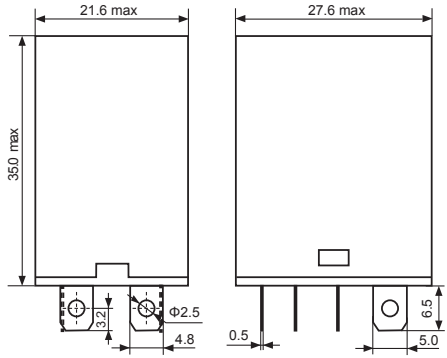
Wiring Diagram
(Bottom View)



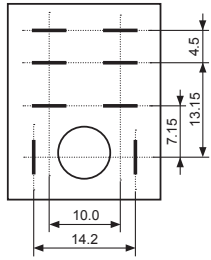
Remark: Form A: Without 1, 2 terminal
Form B: Without 3, 4 terminal

1 Form - Quick Connect Terminal

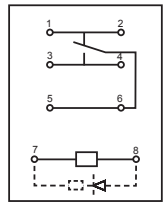
Outline



Mounting Hole Layout
(Bottom View)



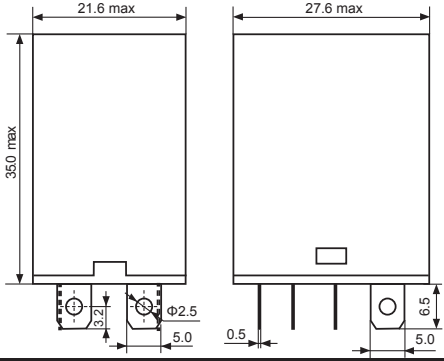
Wiring Diagram
(Bottom View)



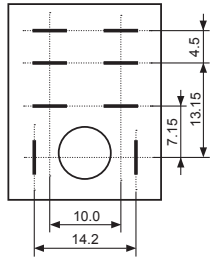
Remark: Form A: Without 1, 2 terminal
Form B: Without 3, 4 terminal

2 Form - Quick Connect Terminal

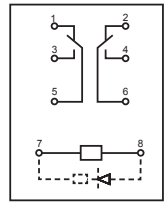
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



Remark: Form A: Without 1, 2 terminal
Form B: Without 3, 4 terminal

LT

POWER RELAY

Features

- Dimensions: 27.6×21.6×35.0(mm)
- Available in various types mounting terminals
- Contact form : 2A, 2B, 2C; 3A, 3B, 3C; 4A, 4B, 4C
- Transparent cover
- AC/DC Coil

Relay Picture

ORDERING INFORMATION

LT - DC12V - D - Q - 2A

	Coil Voltage	Parallel Diode	Terminal Type	Contact Form
Model	DC5V,DC6V,DC12V, DC24V,DC48V,DC110V AC6V,AC12V,AC24V,AC48V, AC110/120V,AC220/240V	D - With Diode Blank - Standard	Q - Quick Connect Terminal Blank - PCB Terminal	2A - 2 Form A 3A - 3 Form A 4A - 4 Form A 2B - 2 Form B 3B - 3 Form B 4B - 4 Form B 2C - 2 Form C 3C - 3 Form C 4C - 4 Form C

SPECIFICATION

CONTACT DATA

Contact Form		2 Form A，2 Form B，2 Form C 3 Form A，3 Form B，3 Form C 4 Form A，4 Form B，4 Form C
Contact Material		Ag Alloy
Contact Rating (Resistive)	2 Form,3 Form:	5A 220VAC/28VDC(Standard) 7A 220VAC/28VDC (High capability)
	4 Form:	3A 220VAC/28VDC(Standard) 5A 220VAC/28VDC(High capability)
Contact Resistance		Max.50mΩ(6VDC 1A)
Load	Max. Switching Voltage	250VAC/30VDC
	Max. Switching Current	2 Form, 3 Form: 3A, 7A
		4 Form: 3A, 5A
	Max. Switching Power	2 Form, 3 Form: 5A: 1100VA/140W 7A:1540VA/196W
		4 Form: 3A: 660VA/84W 5A:1100VA/140W
Life	Electrical	100,000 operations
	Mechanical	20,000,000 operations

COIL DATA

Nominal Coil Power	DC：900mW, 1100mW
	AC：1200mVA

GENERAL DATA

Insulation Resistance		Min.1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC,1min
	Between coil and contacts	1,500VAC,1min
	Between contacts sets	1,500VAC,1min
Operate Time		Max.25ms
Release Time		Max.25ms
Operating Temperature		-40℃ to +70℃
Humidity		98%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1 mm double amplitude
	Misoperation	10~55Hz, 1 mm double amplitude
Weight		Approximately 37.0g

Note:Data shown are of initial value

LT

POWER RELAY

COIL DATA

Ambient Temperature: 23℃

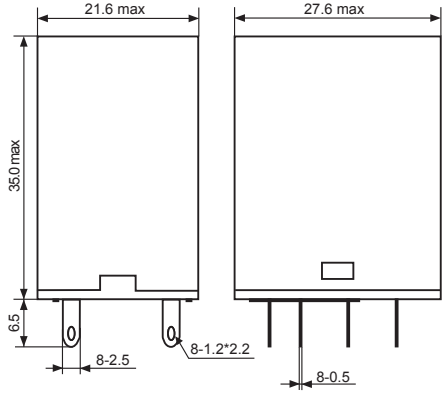
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power mW
LT-DC5V	5	27.5	4.0	0.5	900
LT-DC6V	6	40	4.8	0.6	
LT-DC12V	12	160	9.6	1.2	
LT-DC24V	24	650	19.2	2.4	
LT-DC48V	48	2600	38.4	4.8	
LT-DC110V	110	11000	88.0	11.0	1100

Model	Nominal Voltage VAC	Coil Resistance Ω+/-10%	Operate Voltage ≤VAC	Release Voltage ≥VAC	Coil Power mVA
LT-AC6V	6	11.5	4.8	1.8	1200
LT-AC12V	12	46	9.6	3.6	
LT-AC24V	24	184	19.2	7.2	
LT-AC48V	48	735	38.4	14.4	
LT-AC110V/120V	110/120	4550	88	36	
LT-AC220V/240V	220/240	14400	176	66	

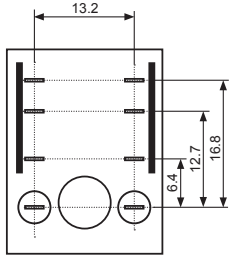
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

2 Form - Quick Connect Terminal

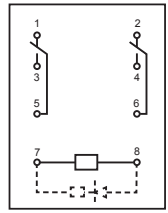
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)

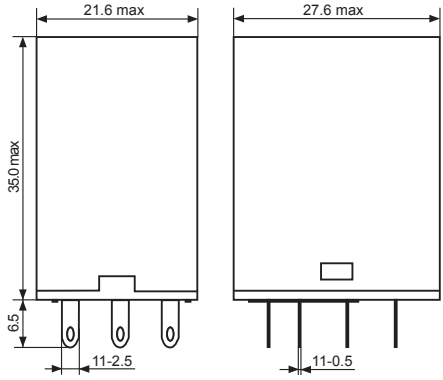


Remark: Form A: Without 1, 2 terminal
Form B: Without 3, 4 terminal

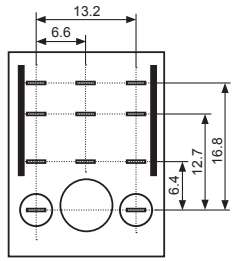
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

3 Form - Quick Connect Terminal

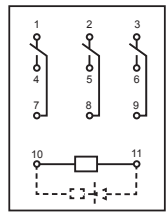
Outline



Mounting Hole Layout
(Bottom View)



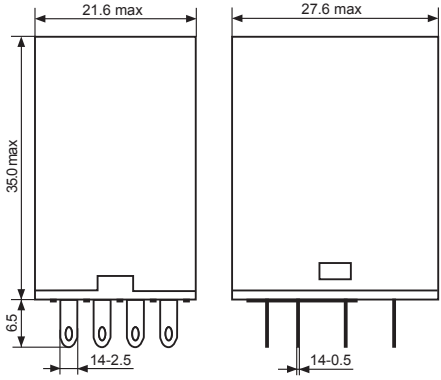
Wiring Diagram
(Bottom View)



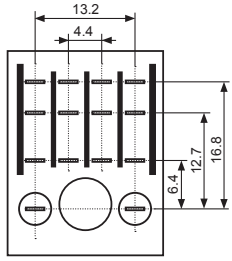
Remark: Form A: Without 1, 2, 3 terminal
Form B: Without 4, 5, 6 terminal

4 Form - Quick Connect Terminal

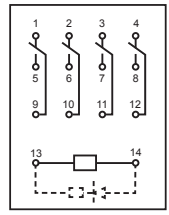
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)

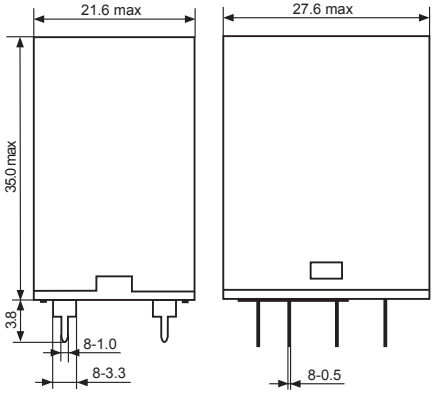


Remark: Form A: Without 1, 2, 3, 4 terminal
Form B: Without 5, 6, 7, 8 terminal

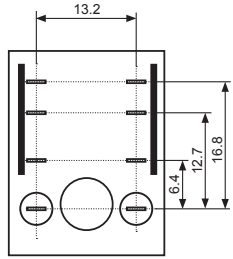
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

2 Form - PCB Terminal

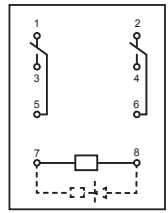
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



Remark: Form A: Without 1, 2 terminal
Form B: Without 3, 4 terminal

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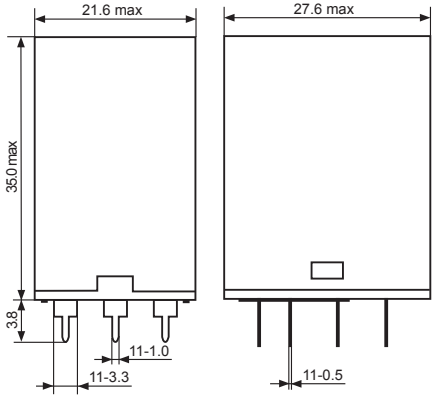
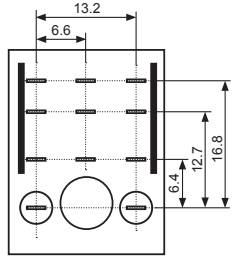
3 Form - PCB Terminal

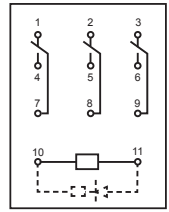
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)

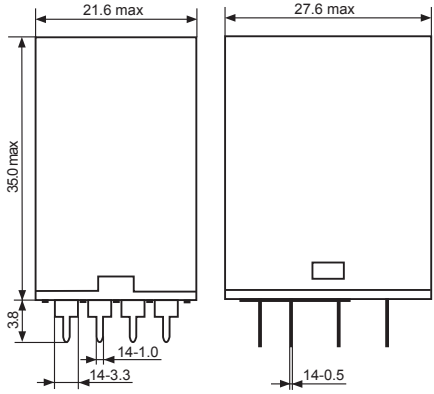


Remark: Form A: Without 1, 2, 3 terminal
Form B: Without 4, 5, 6 terminal

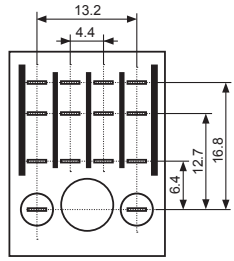
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

4 Form - PCB Terminal

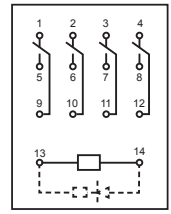
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



Remark: Form A: Without 1, 2, 3, 4 terminal
Form B: Without 5, 6, 7, 8 terminal

CMA1

AUTOMOTIVE RELAY

Features

- Dimensions: 19.0×15.5×15.8(mm)
- Miniature automotive relay
- High Switching capacity 20A
- Available in 3 contact configurations, 1 Form A, B and C
- Applications: car alarm, central locking system, power windows,seat control, etc

Relay Picture

ORDERING INFORMATION

CMA1 [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H-High Sensitivity (360mW) Blank-Standard (800mW)	S - Plastic Sealed Type	DC6V, DC12V, DC24V	A - 1 Form A B - 1 Form B C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form B, 1 Form C
Contact Material		Ag Alloy
Contact Rating		15A 14VDC Resistive (B, C) 20A 14VDC Resistive (A)
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	75VDC
	Max. Switching Current	20A
	Max. Switching Power	280W
Life	Electrical	100,000 operations at nominal load
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	0.8W, 0.36W

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	750VAC, 1min
	Between coil and contacts	1,000VAC, 1min
Operate Time		Max. 15ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 10.0g

Note:Data shown are of initial value

COIL DATA

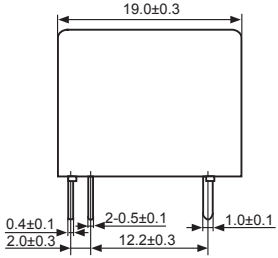
Ambient Temperature: 23℃

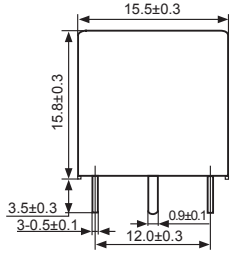
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA1-S- DC6V	6	45	3.6	0.60	0.8
CMA1-S-DC12V	12	180	7.2	1.20	
CMA1-S-DC24V	24	720	14.4	2.40	
CMA1H-S-DC12V	12	400	8.4	1.20	0.36
CMA1H-S-DC24V	24	1600	16.8	2.40	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

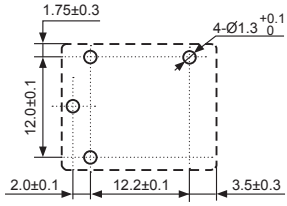
1 Form A

Outline

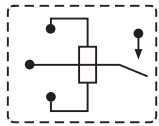




Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



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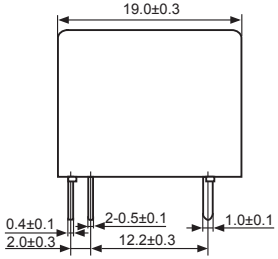
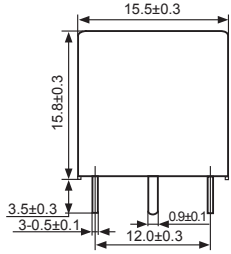
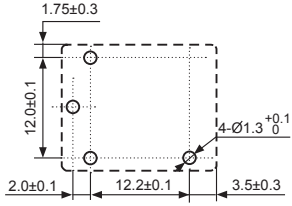
1 Form B

Outline

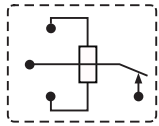




Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



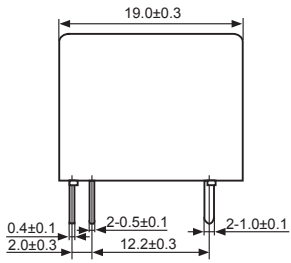
CMA1

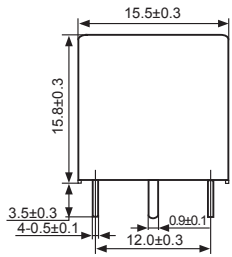
AUTOMOTIVE RELAY

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

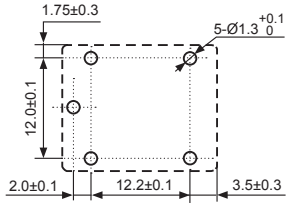
1 Form C

Outline

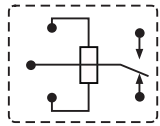




Mounting Hole Layout
(Bottom View)

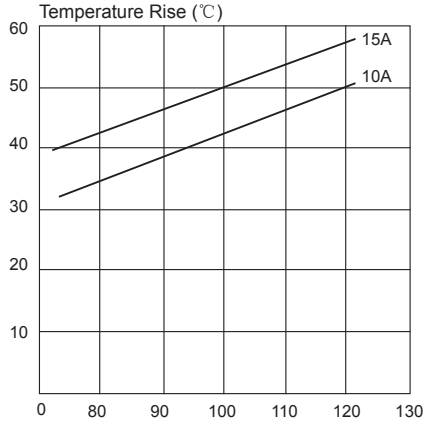


Wiring Diagram
(Bottom View)

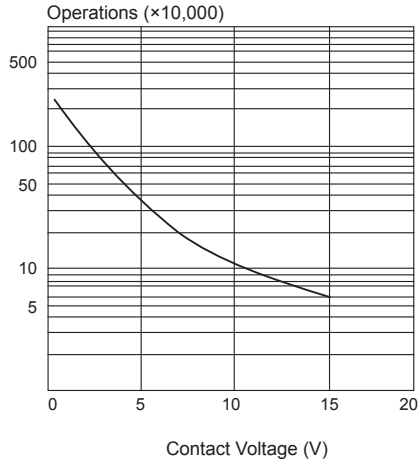


REFERENCE DATA

Coil Temperature Rise



Life Curve



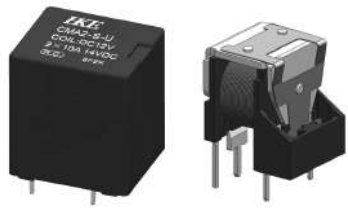
CMA2

AUTOMOTIVE RELAY

Features

- Miniature automotive relay
  Available in both open frame and plastic sealed package
  Sealed: 17.3×14.8×19.5(mm)
  Open: 15.7×12.7×17.7(mm)
- Numerous contact arrangements
- High switching capacity 20A

Relay Picture



Plastic Sealed Type　　Open Type

ORDERING INFORMATION

CMA2 – [S] – [DC12V] – [A]

Model	Enclosure	Coil Voltage	Contact Form
	S - Plastic Sealed Type Blank - Open Type	DC3V, DC5V, DC6V, DC9V, DC12V, DC24V	A - 1 Form A　C - 1 Form C U - Double make　V - Double break W - Double break, Double make

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C, Double make, Double break, Double break - Double make
Contact Material		Ag Alloy
Contact Rating		Refer to table1
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	75VDC
	Max. Switching Current	Refer to table1
	Max. Switching Power	280W
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	1.1mW

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC, 1min
	Between coil and contacts	1,000VAC, 1min
Operate Time		Max. 5ms
Release Time		Max. 3ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Plastic Sealed Type: Approximately 12.0g Open Type: Approximately 8.0g

Note:Data shown are of initial value

Table 1 (Maximum Switching Current (14VDC Switching Voltage))

Load	1 Form A	1 Form C		Double break,Double make		Double make	Double break
		NO	NC	NO	NC		
Contact Rating Current	15A	15A	10A	2x7A	2x5A	2x10A	2x7A
Max.Make Current	60A	60A	12A	2x30A	2x5A	2x40A	2x8A
Max.Break Current	20A	20A	10A	2x15A	2x5A	2x20A	2x7A

CMA2

AUTOMOTIVE RELAY

COIL DATA

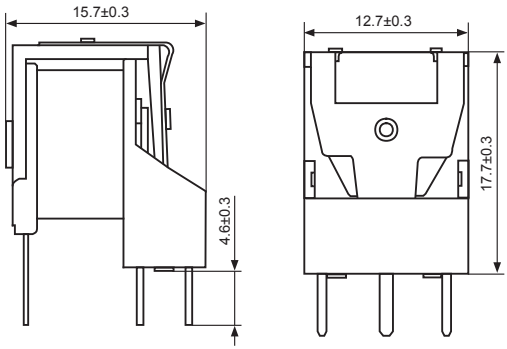
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA2-(S)-DC3V	3	8.2	2.1	0.3	1.1
CMA2-(S)-DC5V	5	22.7	3.5	0.5	
CMA2-(S)-DC6V	6	32.7	4.2	0.6	
CMA2-(S)-DC9V	9	73.6	6.3	0.9	
CMA2-(S)-DC12V	12	130.9	8.4	1.2	
CMA2-(S)-DC24V	24	523.6	16.8	2.4	

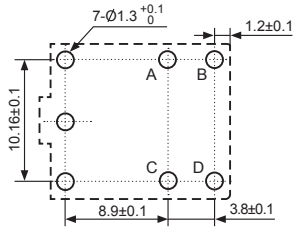
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Open Type

Outline



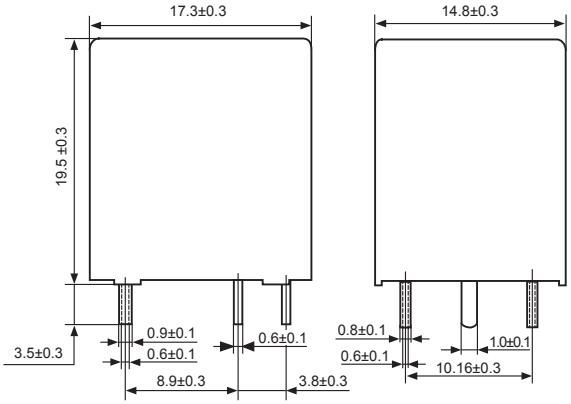
Mounting Hole Layout
(Bottom View)



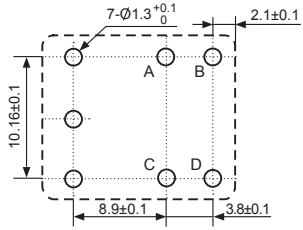
Remark:	Form A: Without A, B, D holes
	Form C: Without A, B holes
	Form U: Without B, D holes
	Form V: Without A, C holes
	Form W: With A, B, C, D holes

Plastic Sealed Type

Outline



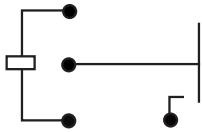
Mounting Hole Layout
(Bottom View)



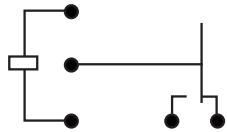
Remark:	Form A: Without A, B, D holes
	Form C: Without A, B holes
	Form U: Without B, D holes
	Form V: Without A, C holes
	Form W: With A, B, C, D holes

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

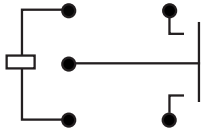
Wiring Diagram
(Bottom View)



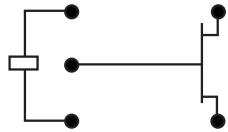
A



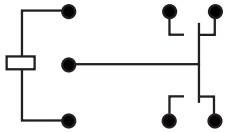
C



U



V



W

CMA31

AUTOMOTIVE RELAY

Features

- Heavy duty general purpose automotive relay
  Dimensions: 27.8×27.8×24.6(mm)
- Switching capacity 40A
- Available in 2 mounting options, socket or bracket mount
- Applications: air compressor, heater, fan motor, blower fan, defogger, etc

Relay Picture

With Bracket　　Without Bracket

ORDERING INFORMATION

CMA31 – DC12V – A – R

	Coil Voltage	Contact Form	Parallel Electronic Component
Model	DC6V DC12V DC24V	A - 1 Form A B - 1 Form B C - 1 Form C	Blank - Standard R- With Resistor (6V-180Ω,12V-680Ω,24V-2700Ω) D- With Diode

Remark: Available in 2 mounting options, with bracket or without bracket

SPECIFICATION

CONTACT DATA

Contact Form	1 Form A, 1 Form B, 1 Form C	
Contact Material		Ag Alloy
Contact Rating (Resistive)	12VDC: 40A 14VDC (A) 30A 14VDC (B) 30A 14VDC (C)	24VDC: 20A 28VDC (A) 10A 28VDC (B) NO/NC:20A/10A 28VDC(C)
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	75VDC
	Max. Switching Current	Refer to table1
	Max. Switching Power	420W(C), 560W(A)
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	1.6W
Nominal Coil Power(With Resistor)	1.8W

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,1min
	Between coil and contacts	550VAC,1min
Operate Time		Max.10ms
Release Time		Max.10ms
		Max.20ms(With Diode)
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 37.0g (Bracket) Approximately 32.0g (Without Bracket)

Note:Data shown are of initial value

Table 1 (Maximum Load Current)

Load	1 Form A	1 Form B	1 Form C	
			NO	NC
Contact Rating Current	40A	30A	40A	30A
Max. Make Current	100A	60A	100A	30A
Max. Break Current	40A	30A	40A	30A

CMA31

AUTOMOTIVE RELAY

COIL DATA

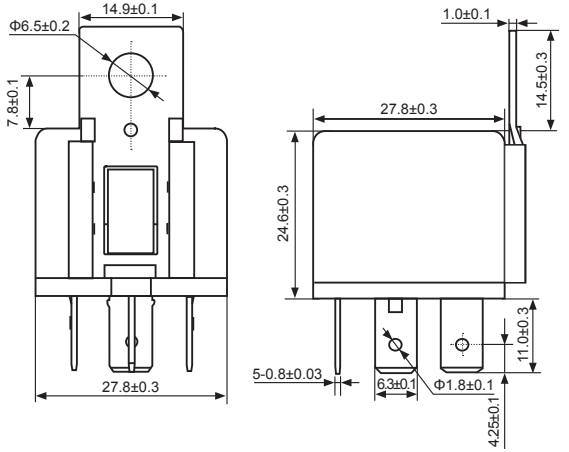
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA31-DC6V	6	22.5	-	-	4.2	0.6	1.6
CMA31-DC12V	12	90.0	-	-	8.4	1.2	
CMA31-DC24V	24	360	-	-	16.8	2.4	
CMA31-DC6V(R)	6	22.5	180	20.0	4.2	0.6	1.8
CMA31-DC12V(R)	12	90.0	680	79.5	8.4	1.2	
CMA31-DC24V(R)	24	360	2700	317.6	16.8	2.4	

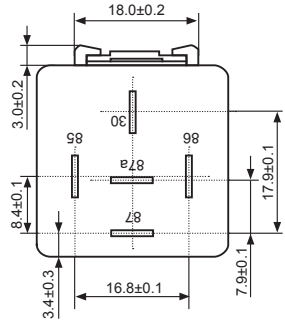
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

With Bracket

Outline



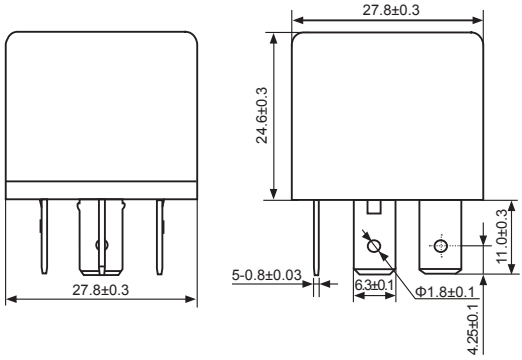
Mounting Hole Layout
(Bottom View)



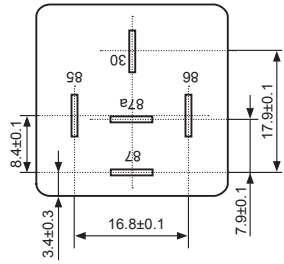
Remark: Form A: Without 87a terminal
Form B: Without 87 terminal
Form C: With all terminals

Without Bracket

Outline



Mounting Hole Layout
(Bottom View)



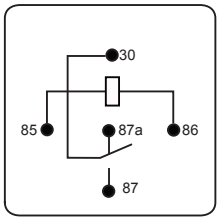
Remark: Form A: Without 87a terminal
Form B: Without 87 terminal
Form C: With all terminals

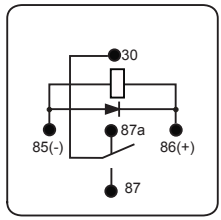
CMA31

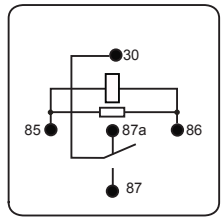
AUTOMOTIVE RELAY

DIMENSIONS, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: MM)

Wiring Diagram
(Bottom View)



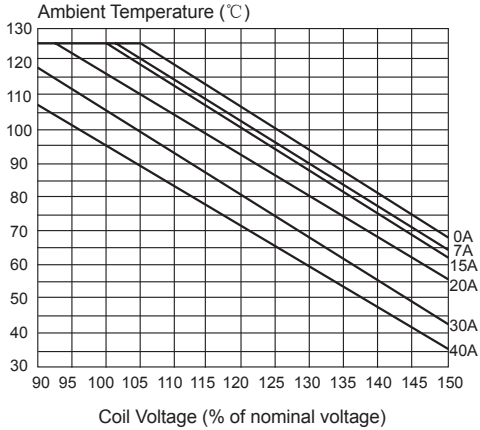




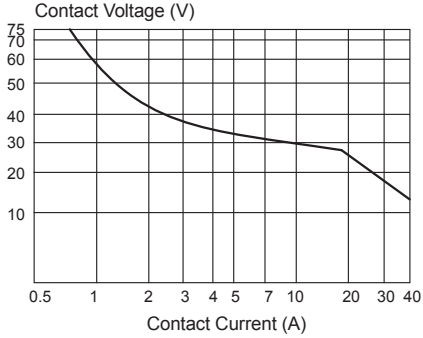
Remark: Form A: Without 87a terminal
Form B: Without 87 terminal
Form C: With all terminals

REFERENCE DATA

Continuous coil voltage range



Maximum Switching Power



CMA31 (A1/B1)

AUTOMOTIVE RELAY

Features

- Automotive relay
  Dimensions: 27.9×27.9×25.0(mm)
- Switching capacity : 30A
- Contact: 1 Form A, 1 Form B

Relay Picture

With Bracket　　Without Bracket

ORDERING INFORMATION

CMA31 – DC12V – B1

Model	Coil Voltage	Contact Form
	DC12V DC24V	B - 1 Form B

Remark: Available in 2 mounting options, with bracket or without bracket

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form B
Contact Material		Ag Alloy
Contact Rating (Resistive)		12VDC:40A 14VDC(A1) 30A 14VDC(B1) 24VDC:20A 28VDC(A1) 10A 28VDC(B1)
Contact Resistance		Max.100mΩ(6VDC 1A)
Load	Max. Switching Voltage	75VDC
	Max. Switching Current	40A
	Max. Switching Power	420W
Life	Electrical	50,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	1.6W

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,1min
	Between coil and contacts	550VAC,1min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 26g

Note:Data shown are of initial value

CMA31 (A1/B1)

AUTOMOTIVE RELAY

COIL DATA

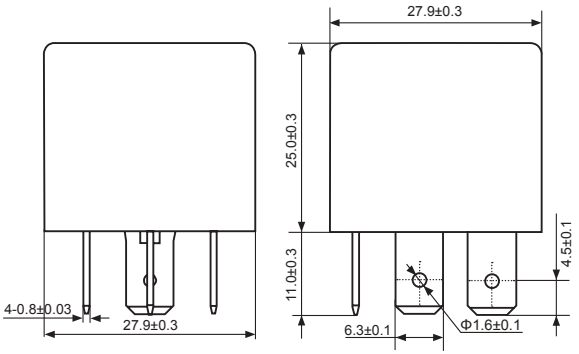
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA31-DC12V-B1	12	90.0	8.4	1.2	1.6
CMA31-DC24V-B1	24	360	16.8	2.4	

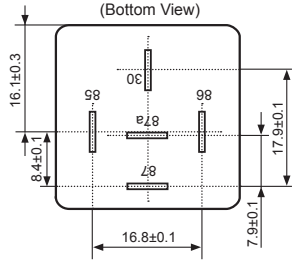
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Without Bracket

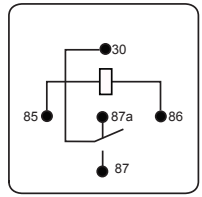
Outline



Mounting Hole Layout
(Bottom View)



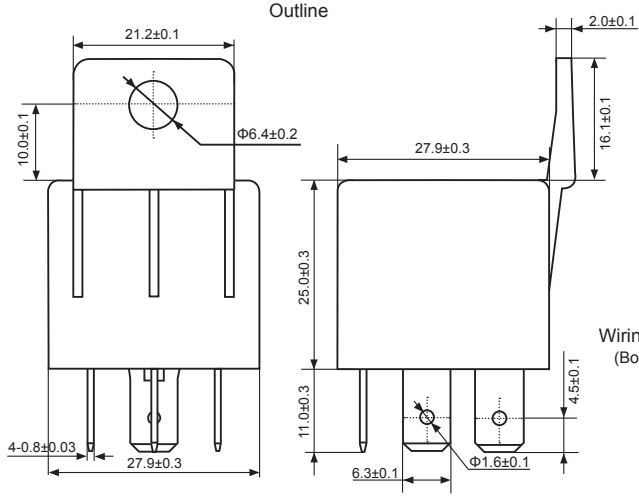
Wiring Diagram
(Bottom View)



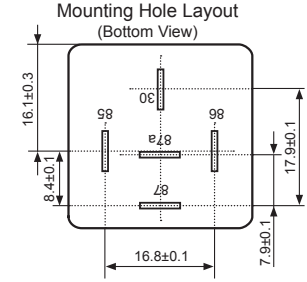
Remark: Form A1: Without 87a terminal
Form B1: Without 87 terminal

With Bracket

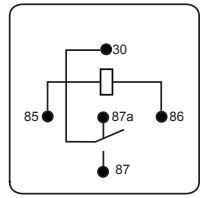
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



Remark: Form A1: Without 87a terminal
Form B1: Without 87 terminal

CMA32

AUTOMOTIVE RELAY

Features

- Heavy duty general purpose automotive relay
  Dimensions: 27.8×27.8×24.6(mm)
- Available in 2 mounting options, with bracket or without bracket
- Two contact configurations, 1 Form A and 2 Form A

Relay Picture

With Bracket Without Bracket

ORDERING INFORMATION

CMA32 – DC12V – A – R – NS

Model	Coil Voltage	Contact Form	Parallel Electronic Component	Mounting Mode
	DC12V DC24V	U - 2 Form A A - 1 Form A	Blank - Standard R- With Resistor (12V-680Ω,24V-2700Ω) D- With Diode	NS - Without Bracket Mounting Blank - Bracket Mounting

Remark: Available in 2 mounting options, with bracket or without bracket

SPECIFICATION

CONTACT DATA

Contact Form		2 Form A, 1 Form A
Contact Material		Ag Alloy
Contact Rating (Resistive)		12VDC: 30A 14VDC(A) 2×20A 14VDC(U) 24VDC: 10A 28VDC(A) 2×10A 28VDC(U)
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	75VDC
	Max. Switching Current	30A
	Max.Make Current	A: 60A U: 2×60A
	Max. Switching Power	420W
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	1.6W
Nominal Coil Power(With Resistor)	1.8W

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,1min
	Between coil and contacts	550VAC,1min
Operate Time		Max.10ms
Release Time		Max.10ms
		Max.20ms(With Diode)
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10～55Hz, 1.5mm double amplitude
	Misoperation	10～55Hz, 1.5mm double amplitude
Weight		Approximately 37.0g (Bracket) Approximately 32.0g (Without Bracket)

Note:Data shown are of initial value

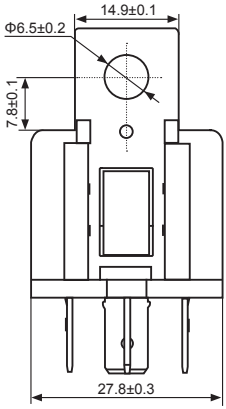
COIL DATA

Ambient Temperature: 23℃

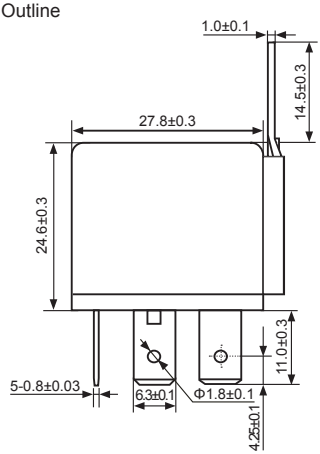
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA32-DC12V	12	90	-	-	8.4	1.2	1.6
CMA32-DC24V	24	360	-	-	16.8	2.4	
CMA32-DC12V(R)	12	90	680	79.5	8.4	1.2	1.8
CMA32-DC24V(R)	24	360	2700	317.6	16.8	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

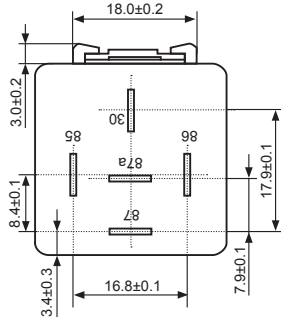
With Bracket



Outline

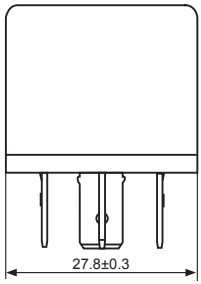


Mounting Hole Layout
(Bottom View)

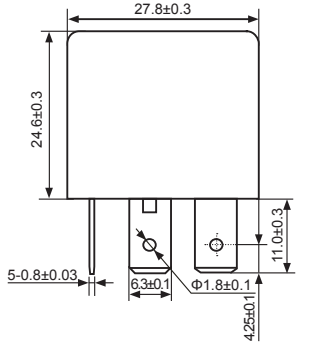


Remark: Form A: Without 87a terminal
Form U: With all terminals

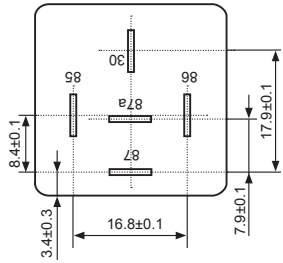
Without Bracket



Outline



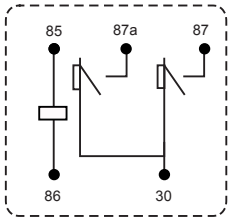
Mounting Hole Layout
(Bottom View)

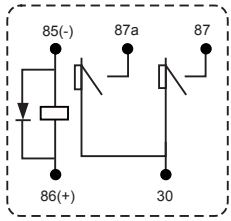


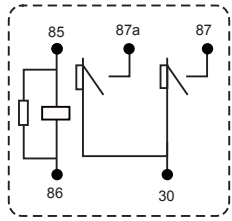
Remark: Form A: Without 87a terminal
Form U: With all terminals

Wiring Diagram

Remark: Form A:Without 87a terminal
Form U:With all terminals

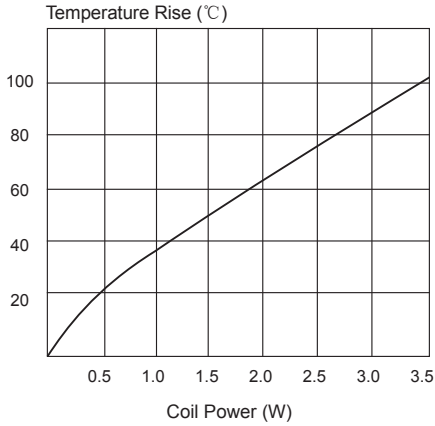




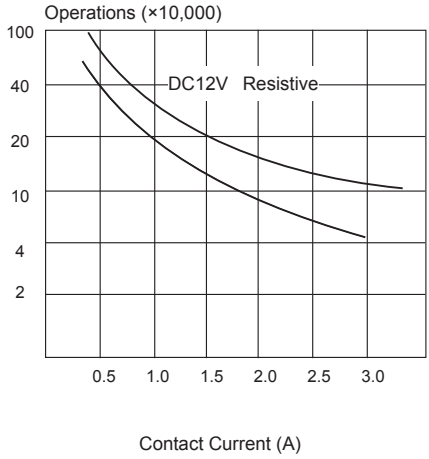


REFERENCE DATA

Coil Temperature Rise



Life Curves



4133

AUTOMOTIVE RELAY

Features

- Miniature heavy duty general purpose automotive relay
  Dimensions: 20.4×15.1×22.0(mm)
- Switching capacity 35A
- 1 Form A and C contact configurations
- Operating ambient temperature: 125℃
- Applications: air compressor, heater, fan motor, blower fan, defogger, etc

Relay Picture

ORDERING INFORMATION

4133 [H] – [S] – [DC12V] – [A] – [R]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form	Parallel Electronic Component
	H-High Sensitivity Blank-Standard (Refer to "COIL DATA")	S - Plastic Sealed Type	DC12V DC24V	A - 1 Form A C - 1 Form C	Blank - Standard R- With Resistor (12V-680Ω,24V-2700Ω) D- With Diode

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		Refer to table1
Contact Resistance		Max. 50mΩ (6VDC 1A)
Load	Max. Switching Voltage	28VDC
	Max. Switching Current	35A
	Max.Make Current	NO: 90A NC: 20A
	Max. Switching Power	490W (12VDC) 420W (24VDC)
Life	Electrical	100,000 operations
	Mechanical	1,000,000 operations

COIL DATA

Nominal Coil Power	1.5W(12V), 1.8W(24V)
Nominal Coil Power(With Resistor)	1.7W(12V), 2.0W(24V)
Nominal Coil Power(High Sensitivity)	1.1W(12V)
Nominal Coil Power(High Sensitivity) (With Resistor)	1.3W(12V)

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC, 1min
	Between coil and contacts	550VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +125℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 18.0g

Note:Data shown are of initial value

Table 1 (Contact Rating)

Type		Coil Voltage 12VDC	Coil Voltage 24VDC
Rating (Resistive Load)	Contact Rating	NO: 35A 14VDC NC: 20A 14VDC	NO: 15A 28VDC NC: 8A 28VDC
	125℃ Switching Current	NO: 20A(14VDC) NC: 10A(14VDC)	NO: 15A(28VDC) NC: 8A(28VDC)

4133

AUTOMOTIVE RELAY

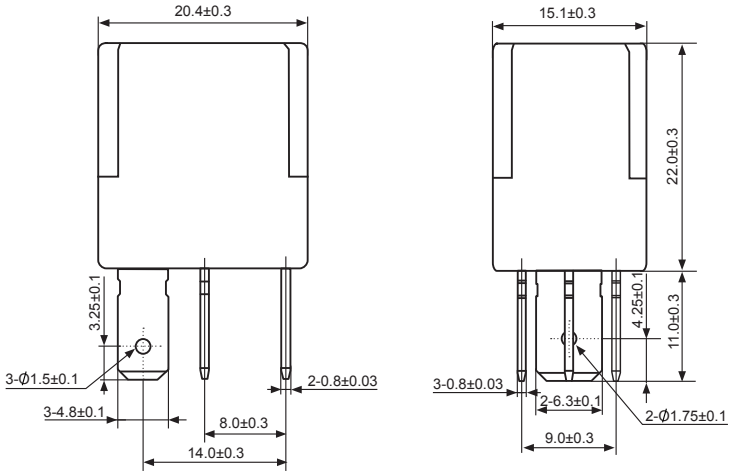
COIL DATA

Ambient Temperature: 23℃

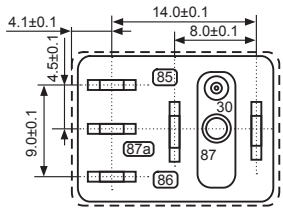
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
4133-S-DC12V	12	96	-	-	7.2	1.2	1.5
4133-S-DC24V	24	320	-	-	14.4	2.4	1.8
4133-S-DC12V(R)	12	96	680	84.1	7.2	1.2	1.7
4133-S-DC24V(R)	24	320	2700	286	14.4	2.4	2.0
4133H-S-DC12V	12	130	-	-	7.2	1.2	1.1
4133H-S-DC12V(R)	12	130	680	109	7.2	1.2	1.3

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline



Mounting Hole Layout
(Bottom View)



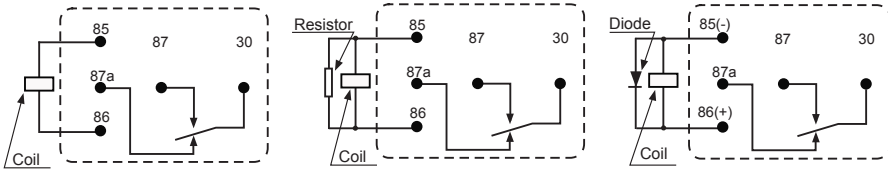
Remark: Form A: Without 87a terminal
Form C: With all terminals

4133

AUTOMOTIVE RELAY

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

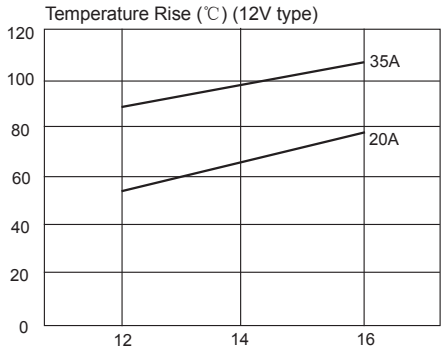
Wiring Diagram
(Bottom View)

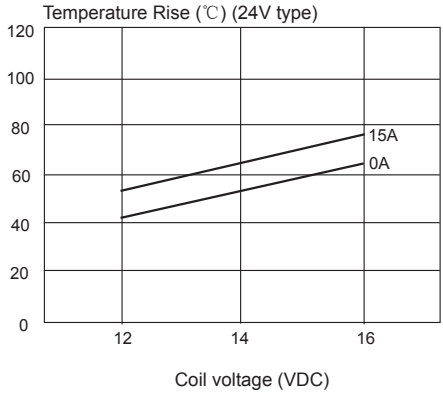


Remark: Form A: Without 87a terminal
Form C: With all terminals

REFERENCE DATA

Coil Temperature Rise





4133W

AUTOMOTIVE RELAY

Features

- Miniature heavy duty general purpose automotive relay
  Dimensions: 20.4×15.1×23.0(mm)
- Switching capacity 30A
- 1 Form A and C contact configurations
- Operating ambient temperature: 125℃
- Applications: air compressor, heater, fan motor, blower fan, defogger, etc

Relay Picture

ORDERING INFORMATION

4133W [H] - [S] - [DC12V] - [A] - [R]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form	Parallel Electronic Component
	H-High Sensitivity Blank-Standard (Refer to "COIL DATA")	S - Plastic Sealed Type	DC12V DC24V	A - 1 Form A C - 1 Form C	Blank - Standard R- With Resistor (12V-680Ω,24V-2700Ω) D- With Diode

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		Refer to table1
Contact Resistance		Max. 50mΩ (6VDC 1A)
Load	Max. Switching Voltage	28VDC
	Max. Switching Current	30A
	Max.Make Current	NO: 90A NC: 20A
	Max. Switching Power	490W (12VDC) 420W (24VDC)
Life	Electrical	100,000 operations
	Mechanical	1,000,000 operations

COIL DATA

Nominal Coil Power	1.5W(12V), 1.8W(24V)
Nominal Coil Power(With Resistor)	1.7W(12V), 2.0W(24V)
Nominal Coil Power(High Sensitivity)	1.1W(12V)
Nominal Coil Power(High Sensitivity) (With Resistor)	1.3W(12V)

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC, 1min
	Between coil and contacts	550VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +125℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 16.0g

Note:Data shown are of initial value

Table 1 (Contact Rating)

Type		Coil Voltage 12VDC	Coil Voltage 24VDC
Rating (Resistive Load)	Contact Rating	NO: 30A 14VDC NC: 20A 14VDC	NO: 15A 28VDC NC: 8A 28VDC
	125℃ Switching Current	NO: 20A(14VDC) NC: 10A(14VDC)	NO: 15A(28VDC) NC: 8A(28VDC)

4133W

AUTOMOTIVE RELAY

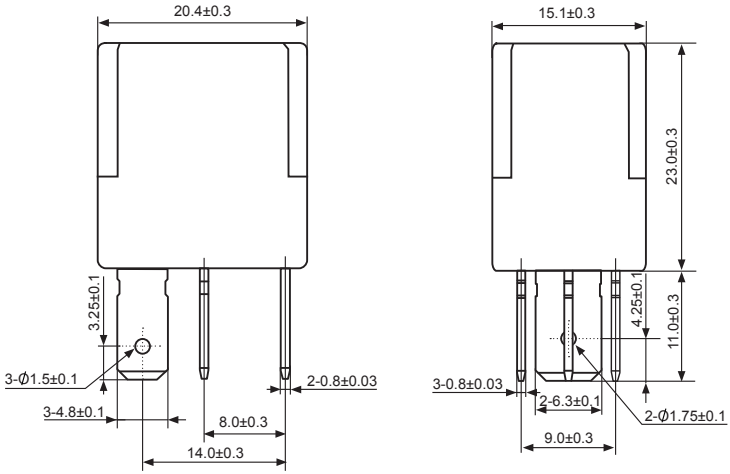
COIL DATA

Ambient Temperature: 23℃

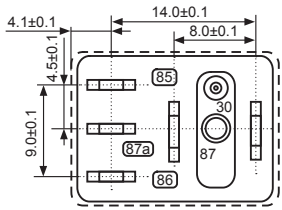
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
4133W-S-DC12V	12	96	-	-	7.2	1.2	1.5
4133W-S-DC24V	24	320	-	-	14.4	2.4	1.8
4133W-S-DC12V(R)	12	96	680	84.1	7.2	1.2	1.7
4133W-S-DC24V(R)	24	320	2700	286	14.4	2.4	2.0
4133WH-S-DC12V	12	130	-	-	7.2	1.2	1.1
4133WH-S-DC12V(R)	12	130	680	109	7.2	1.2	1.3

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline



Mounting Hole Layout
(Bottom View)



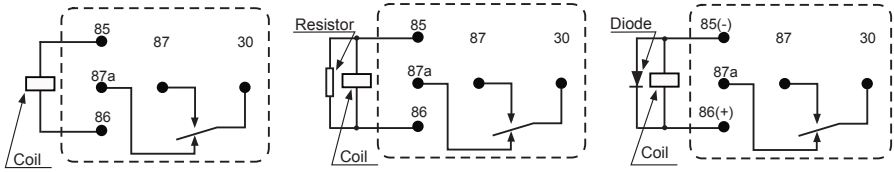
Remark: Form A: Without 87a terminal
Form C: With all terminals

4133W

AUTOMOTIVE RELAY

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

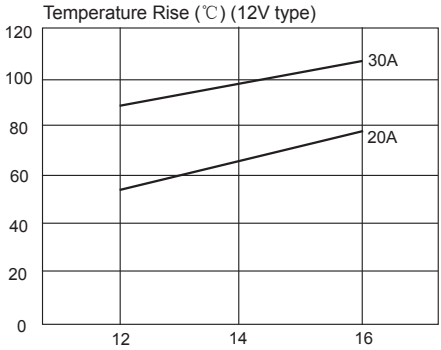
Wiring Diagram
(Bottom View)

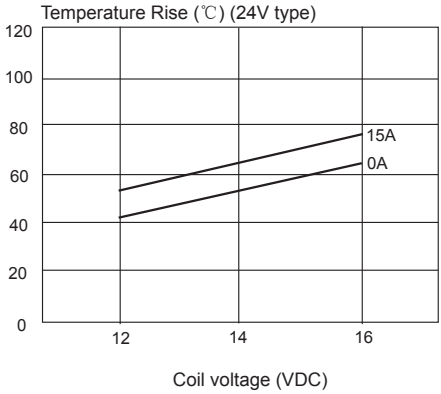


Remark: Form A: Without 87a terminal
Form C: With all terminals

REFERENCE DATA

Coil Temperature Rise





CMA34

AUTOMOTIVE RELAY

Features

- Microminiature：22.5×15.0×25.0mm
- 125℃ of operating ambient temperature
- 2.8mm of Flat quick connection terminal
- Compliance to Rohs、ELV Directive

Relay Picture

ORDERING INFORMATION

CMA34 - [S] - [DC12V] - [A] - [R]

Model	Enclosure	Coil Voltage	Contact Form	Parallel Electronic Component
	S - Plastic Sealed Type Blank - Bayonet type	DC12V DC24V	A - 1 Form A C - 1 Form C	Blank-Standard R- With Resistor (12V - 680Ω, 24V - 2700Ω) D - With Diode

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating (Resistive)		NO/NC:35A/20A 14VDC NO/NC:20A/10A 28VDC
Contact Resistance		Max.50mΩ(6VDC 1A)
Load	Max. Switching Voltage	40VDC
	Max. Switching Current	Make:150A(1) Break:35A
	Max.Continous Current	35A(125℃,1h)
	Min. Switching Load	1A 6VDC
Life	Electrical	100,000operations
	Mechanical	10,000,000operations

COIL DATA

Nominal Coil Power	12V: 1.2W,24V: 1.4W
Nominal Coil Power (With Resistor)	12V: 1.4W,24V: 1.6W
Max.Permitted Coil Voltage	1.2W: 20.4VDC(23℃),14.9VDC(85℃)
	1.4W: 36VDC(23℃), 28VDC(85℃)

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1 min
	Between coil and contacts	550VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +125℃
Humidity		35～85%RH
Shock Resistance(2)		20G(≤1ms)
Vibration Resistance(2)		10～40Hz,1.27mm double amplitude 40～70Hz,49m/s^2 70～100Hz,0.5mm double amplitude 100～500Hz,98m/s^2
Weight		Approximately20.0g

Note:Data shown are of initial value

Remark:(1) Surge current for lamp
(2)The open time for Closed contact and the closed time for open contact is not more than 1ms

CMA34

AUTOMOTIVE RELAY

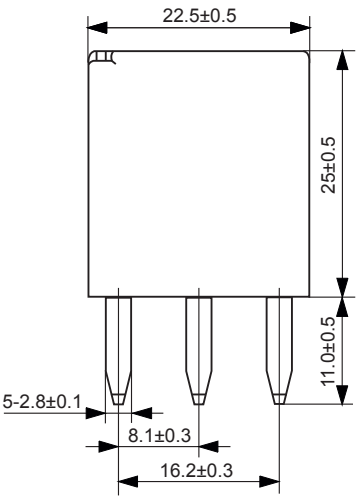
COIL DATA

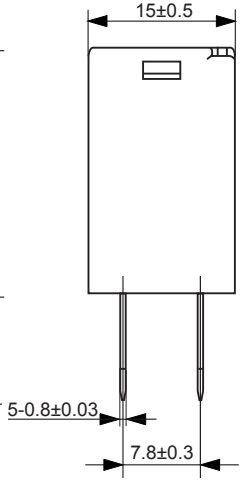
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA34-(S)-DC12V	12	124	–	–	7.2	1.2	1.2
CMA34-(S)-DC12V (R)	12	124	680	104.9	7.2	1.2	1.4
CMA34-(S)-DC24V	24	420	–	–	14.4	2.4	1.4
CMA34-(S)-DC24V (R)	24	420	2700	363.4	14.4	2.4	1.6

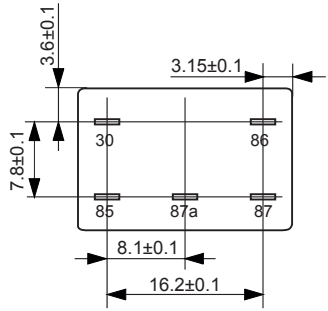
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline

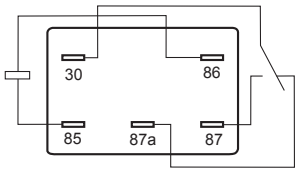


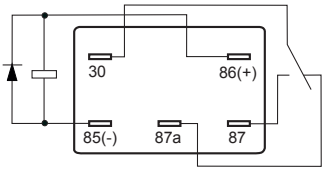


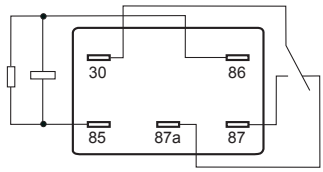
Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



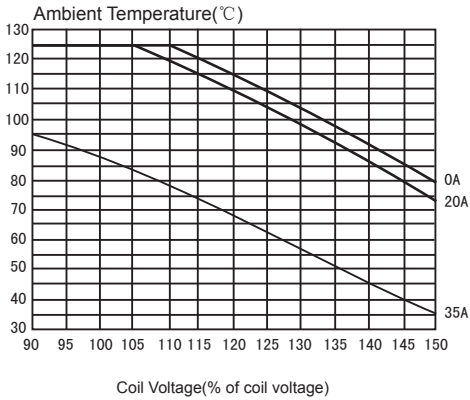




REFERENCE DATA

The range of coil continuous voltage

The range of coil continuous voltage for 12VDC



Note：
(1)It is available for no load when Max. continuous coil voltage is energized to relay.
(2)The Max.permitted temperature of coil is 180℃.

CMA35

AUTOMOTIVE RELAY

Features

- Heavy duty general purpose automotive relay
- Outline dimensions:26.0×26.0×24.8 (mm)
- 70A of contact switching capacity
- 125℃ of working temperature
- Normal open contact configuration
- Availlable for Plastic sealed and unsealed type
- Quick Connect Terminals and PCB Terminals

Relay Picture

ORDERING INFORMATION

CMA35 [H] - [S] - [DC12V] - [A] - [R] - [P]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form	Parallel Electronic Component	Terminal Type
	H - High Sensitivety (1600mW) Blank-Standard (1800mW)	S - Plastic Sealed Type Blank - Unsealed	DC6V DC12V DC24V	1 Form A	Blank-Standard R- With Resistor (6V - 180Ω, 12V - 680Ω, 24V - 2700Ω) D - With Diode	Blank - Quick Connect Terminals P - PCB Terminals

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating (Resistive)		6V,12VDC: 70A 14VDC 24VDC: 40A 28VDC
Contact Resistance		Max.50mΩ(24VDC 1A)
Load	Max. Switching Voltage	50VDC
	Max. Switching Current	70A
	Max.Continous Current	70A(23℃) ,50A(125℃)
	Min.Contact Load	1A 6VDC
Life	Electrical	1×10^5 Cycles(70A 14VDC,720 cycles/h) 1×10^5 Cycles(40A 28VDC,720 cycles/h)
	Mechanical	1×10^7 Cycles(300 cycles/minutes)

COIL DATA

Nominal Coil Power	1.6W,1.8W

GENERAL DATA

Insulation Resistance		Min.500MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC, 1min
	Between coil and contacts	550VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 7ms Max.20ms(With Diode)
Operating Temperature		-40℃ to +125℃
Humidity		35～85%RH, +40℃
Shock Resistance		294m/s^2(30g)
Vibration Resistance		10～55Hz,3.0mm double amplitude 10～500Hz,176m/s^2(18g)
Weight		Approximately 38.0g
Mechanic		Cover Strength: 245N (Pull/Press) Terminal Strength: 100N (Pull/Press) Terminal Bending: 10N (Each Direction)

Note:Data shown are of initial value

COIL DATA

Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA35-DC6V-A	6	20	-	-	3.6	0.6	1.8
CMA35-DC12V-A	12	80	-	-	7.2	1.2	
CMA35-DC24V-A	24	320	-	-	14.4	2.4	

CMA35

AUTOMOTIVE RELAY

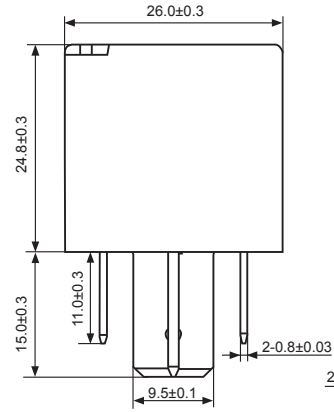
COIL DATA

Ambient Temperature: 23℃

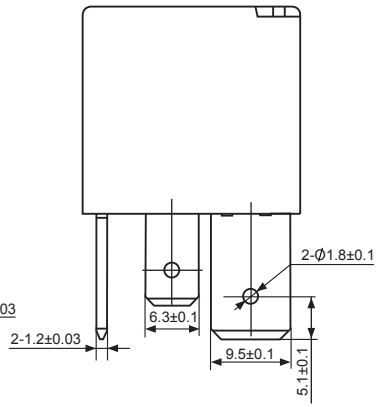
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA35H-DC6V-A	6	22.5	-	-	3.6	0.6	1.6
CMA35H-DC12V-A	12	90.0	-	-	7.2	1.2	
CMA35H-DC24V-A	24	360	-	-	14.4	2.4	
CMA35H-DC6V-A-R	6	22.5	180	20.0	3.6	0.6	1.8
CMA35H-DC12V-A-R	12	90.0	680	79.5	7.2	1.2	
CMA35H-DC24V-A-R	24	360	2700	317.6	14.4	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

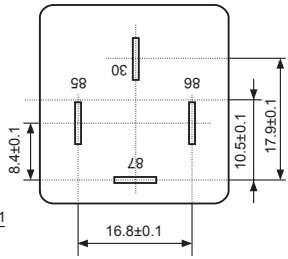
Quick Connect Terminals



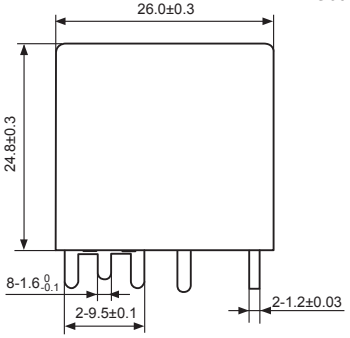
Outline



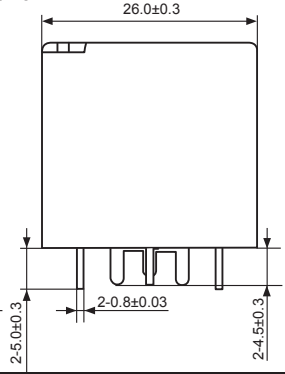
Mounting Hole Layout
(Bottom View)



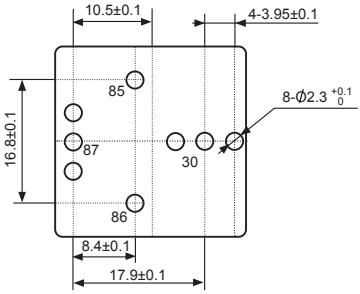
PCB Terminals



Outline



Mounting Hole Layout
(Bottom View)

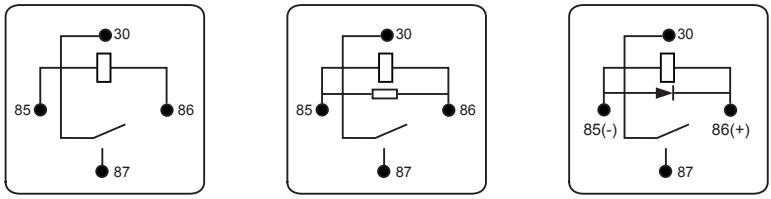


CMA35

AUTOMOTIVE RELAY

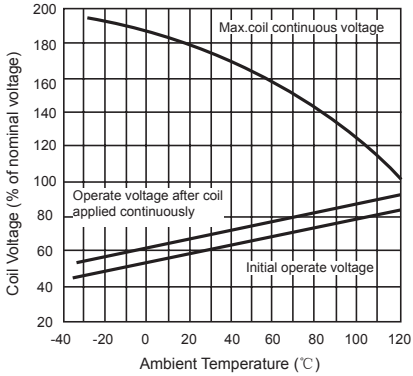
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Wiring Diagram
(Bottom View)



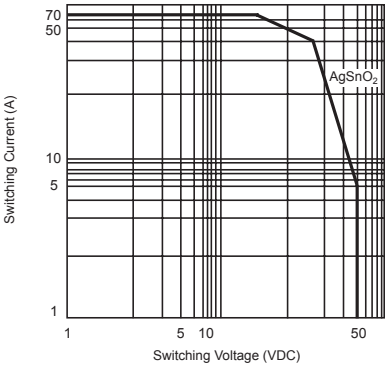
REFERENCE DATA

The range of coil continuous voltage



Remark:
1. It is available for no load condition.
2. The operate voltage will be affected by coil pre-applied time and pre-applied voltage. It will be increased after pre-applied.
3. The Max.permitted temperature of coil is 180℃. To take into cosideration of the coil temp rise is average value tested by resistance method, it is recommended that the coil temperature is less than 170℃ when you test under different environment,coil voltages and ratings.

Max.permitted load



Remark:
1.Resistive contact ratings.
2.Life expectancy test is based on specified contact ratings and conditions. In case applications deviate from the specified rated ratings and conditions, please perform the life test again under the new specifications and conditions.

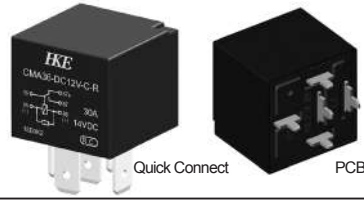
CMA36

AUTOMOTIVE RELAY

Features

- Dimensions:26.0×26.0×22.7(mm)
- 50A of switching capability
- 125℃ of operating ambient temperature
- SPST and SPDT contact form
- Compliance to Rohs ELV Directive
- Availlable for Plastic sealed and unsealed type

Relay Picture



ORDERING INFORMATION

CMA36 - S - DC12V - A T - R - P

Model	Enclosure	Coil Voltage	Contact Form	Contact Rating	Parallel Electronic Component	Terminal Type
	S - Plastic Sealed Type Blank - Unsealed	DC12V DC24V	A - 1 Form A C - 1 Form C	Blank - NO:40A/14VDC NC:30A/14VDC NO:20A/28VDC NC:10A/28VDC T - NO:50A/14VDC NC:30A/14VDC NO:30A/28VDC NC:10A/28VDC	Blank-Standard R- With Resistance (12V - 680Ω, 24V - 2700Ω) D - With Diode	Blank - Quick Connect Terminals P - PCB Terminals

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		Standard: NO:40A/14VDC,NC:30A/14VDC NO:20A/28VDC,NC:10A/28VDC T: NO:50A/14VDC,NC:30A/14VDC NO:30A/28VDC,NC:10A/28VDC
Contact Resistance		Max.50mΩ(24VDC 1A)
Load	Max. Switching Voltage	28VDC
	Max. Switching Current	Make:150A (NO,surge) Break:50A (steady-state)
	Max.Continous Current	50A(125℃,1h)
	Min. Switching Load	1A 6VDC
Life	Electrical	100,000 Cycles
	Mechanical	1,000,000 Cycles(300 cycles/minutes)

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1 min
	Between coil and contacts	550VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +125℃
Humidity		5～95%RH,50℃
Shock Resistance		294m/s^2
Vibration Resistance		10Hz～22.3Hz,10mmDouble Amplitude 22.3Hz～500Hz,98m/s^2(10g)
Mechanic		Cover Strength: 200N (Pull/Press) Terminal Strength: 100N (Pull/Press) Terminal Bending: 10N (Each Direction)
Weight		Approximately 35g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	1.6W (Standard), 2.0W (T)
Nominal Coil Power (With Resistor)	1.8W (Standard), 2.2W (T)

CMA36

AUTOMOTIVE RELAY

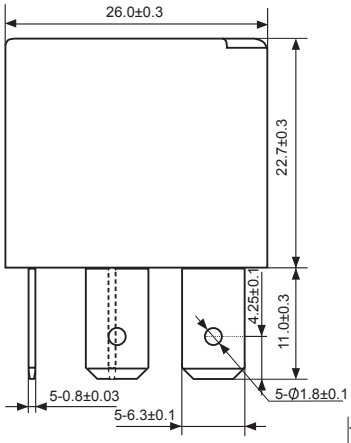
COIL DATA

Ambient Temperature: 23℃

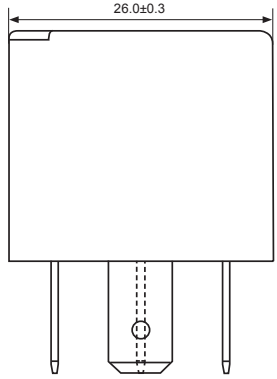
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA36-(S)-DC12V-A(C)	12	90	-	-	7.8	1.2	1.6
CMA36-(S)-DC24V-A(C)	24	360	-	-	16.0	2.4	1.6
CMA36-(S)-DC12V-AT(CT)	12	72	-	-	7.8	1.2	2.0
CMA36-(S)-DC24V-AT(CT)	24	288	-	-	16.0	2.4	2.0
CMA36-(S)-DC12V-A(C)-R	12	90	680	79.5	7.8	1.2	1.8
CMA36-(S)-DC24V-A(C)-R	24	360	2700	317.6	16.0	2.4	1.8
CMA36-(S)-DC12V-AT(CT)-R	12	72	680	65.1	7.8	1.2	2.2
CMA36-(S)-DC24V-AT(CT)-R	24	288	2700	260	16.0	2.4	2.2

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

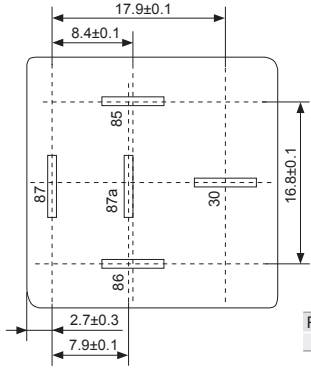
Quick Connect Terminals



Outline



Mounting Hole Layout
(Bottom View)



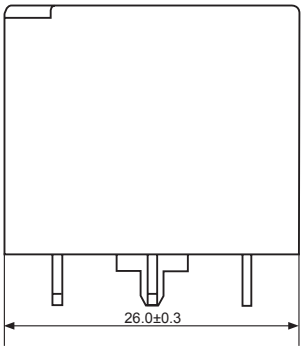
Remark: Form A: Without 87a terminal
Form C: With all terminals

CMA36

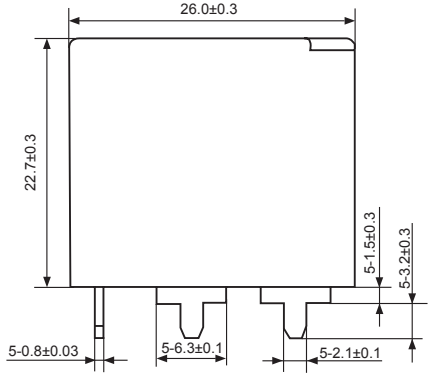
AUTOMOTIVE RELAY

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

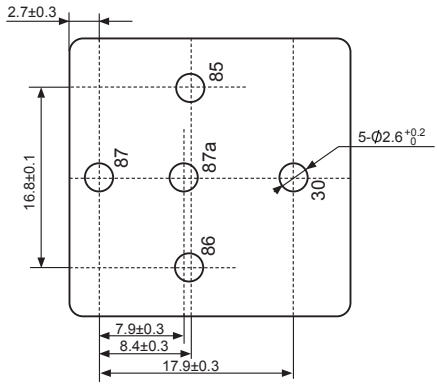
PCB Terminals



Outline

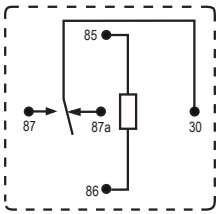


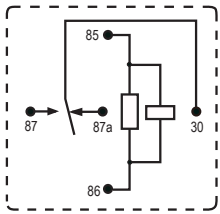
Mounting Hole Layout
(Bottom View)

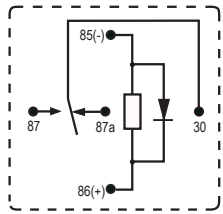


Remark: Form A: Without 87a terminal
Form C: With all terminals

Wiring Diagram
(Bottom View)



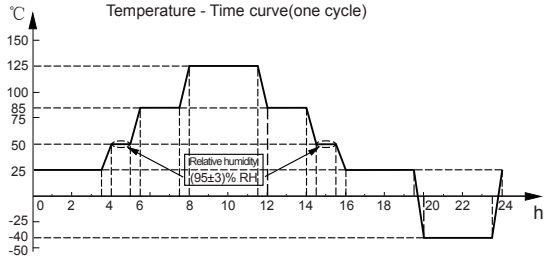




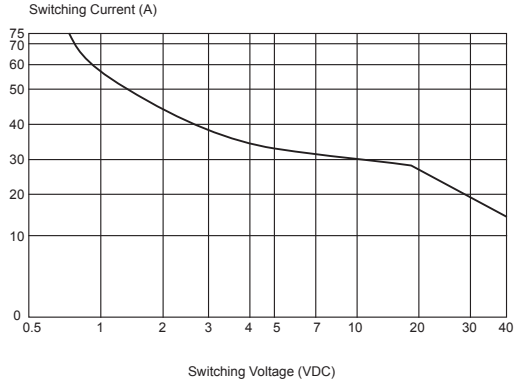
Remark: Form A: Without 87a terminal
Form C: With all terminals

REFERENCE DATA

Temperature curve for electrical endurance test



Max.switching power curve



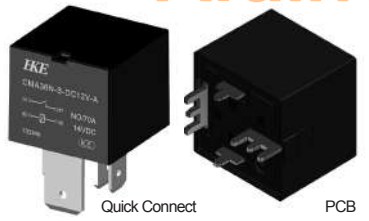
CMA36N

AUTOMOTIVE RELAY

Features

- General purpose automotive relay
- Dimensions:26.6×26.0×22.7(mm)
- 70A of switching capability
- Contact:1 Form A
- Availlable for Plastic sealed and unsealed type
- Quick Connect Terminals and PCB Terminals
- 125℃ of operating ambient temperature

Relay Picture



ORDERING INFORMATION

CMA36N - [S] - [DC12V] - [A] - [R] - [P]

Model	Enclosure	Coil Voltage	Contact Form	Parallel Electronic Component	Terminal Type
	S - Plastic Sealed Type Blank - Unsealed	DC12V DC24V	A - 1 Form A	Blank-Standard R- With Resistor (12V - 680Ω, 24V - 2700Ω) D - With Diode	Blank - Quick Connect Terminals P - PCB Terminals

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A
Contact Material		Ag Alloy
Contact Rating		Resistive: NO:70A/14VDC NO:40A/28VDC Inductive: Make150A/14VDC,break50A/14VDC Lamp: Surge200A/14VDC,break40A/14VDC
Contact Resistance		Max.25mΩ(24VDC 1A)
Load	Max. Switching Voltage	Refer to 'Max.switching power curve'
	Max. Switching Current	Make(NO,lamp)200A Break (steady state) 70A (res, 13.5V)
	Max.Continous Current	70A(23℃),50A(85℃),30A(125℃)
	Min. Switching Load	1A 6VDC
Life	Electrical	100,000Cycles
	Mechanical	1,000,000Cycles (300cycles/minutes)

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1 min
	Between coil and contacts	550VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +125℃
Humidity		5～95%RH,50℃
Shock Resistance		294m/s^2(30g)
Vibration Resistance		5Hz～22.3Hz,10mmDouble Amplitude 22.3Hz～500Hz,98m/s^2(10g)
Mechanic		Cover Strength: 200N (Pull/Press) Terminal Strength: 100N (Pull/Press) Terminal Bending: 10N (Each Direction)
Weight		Approximately 38g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	1.6W (12V)， 1.8W (24V)
Nominal Coil Power (With Resistor)	1.8W (12V)， 2.0W (24V)

CMA36N

AUTOMOTIVE RELAY

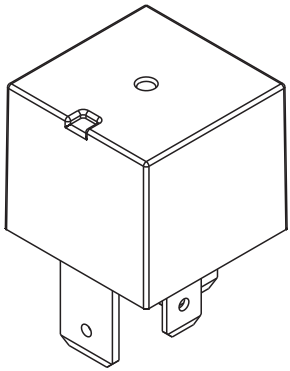
COIL DATA

Ambient Temperature: 23℃

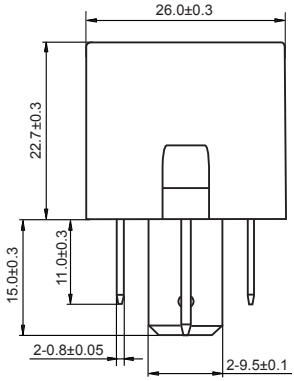
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel Resistance Ω+/-5%	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA36N-(S)-DC12V-A	12	90	-	-	7.8	1.2	1.6
CMA36N-(S)-DC12V-A-R	12	90	680	79.5	7.8	1.2	1.8
CMA36N-(S)-DC24V-A	24	320	-	-	16	2.4	1.8
CMA36N-(S)-DC24V-A-R	24	320	2700	286	16	2.4	2.0

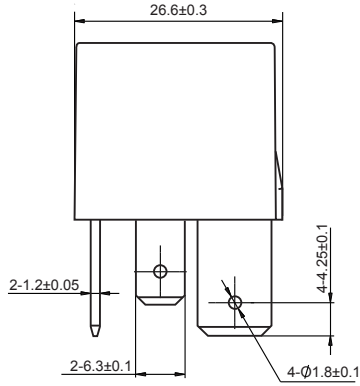
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

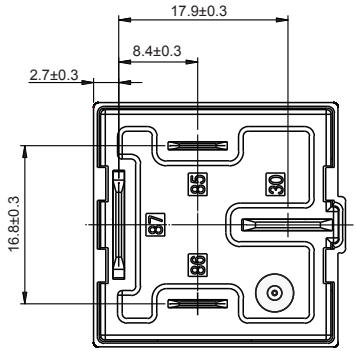
Quick Connect Terminals



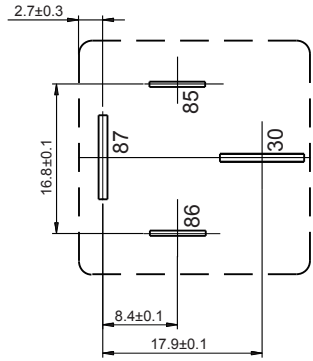
Outline







Mounting Hole Layout
(Bottom View)

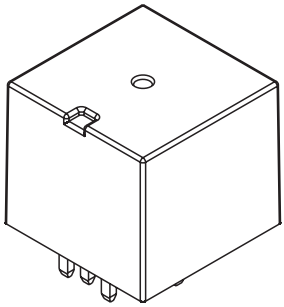


CMA36N

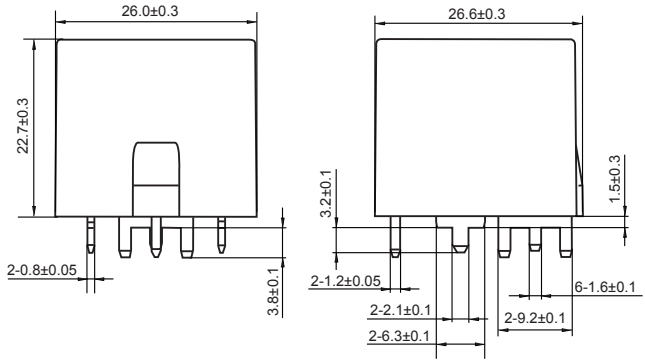
AUTOMOTIVE RELAY

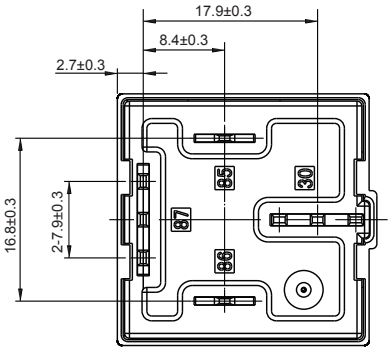
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

PCB Terminals

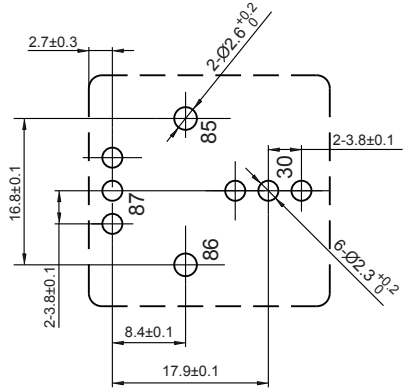


Outline

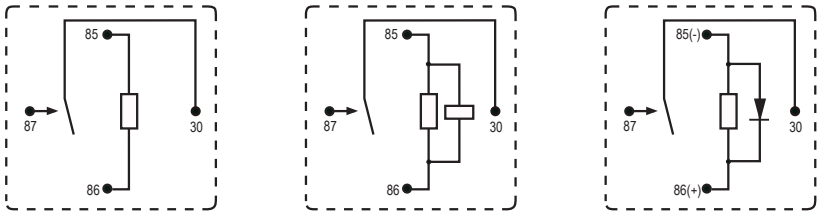




Mounting Hole Layout
(Bottom View)

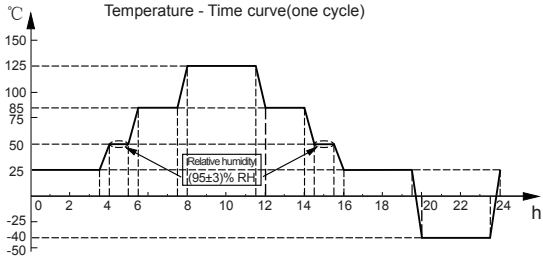


Wiring Diagram
(Bottom View)

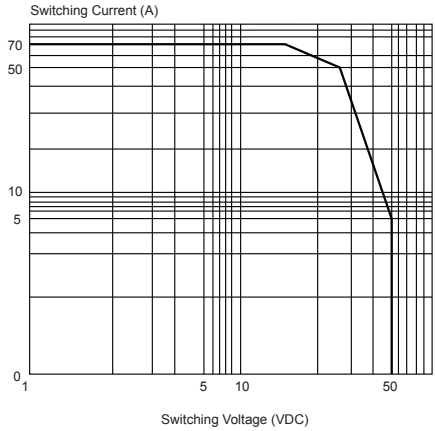


REFERENCE DATA

Temperature curve for electrical endurance test



Max.switching power curve



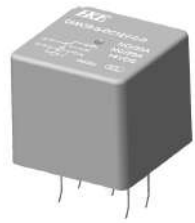
CMA39

AUTOMOTIVE RELAY

Features

- 2.8mm of quick flat connection terminal
- Contact: 1 Form A , 1 Form C
- 125℃ of working temperature
- Available for Sealed type or bayonet-type
- Compliance for Rohs and ELV directive

Relay Picture



ORDERING INFORMATION

CMA39 - [S] - [DC12V] - [A] - [R]

Model	Enclosure	Coil Voltage	Contact Form	Parallel Electronic Component
	S - Plastic Sealed Type Blank - Bayonet type	DC12V DC24V	A - 1 Form A C - 1 Form C	Blank-Standard R- With Resistor (12V - 680Ω, 24V - 2700Ω) D - With Diode

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form C
Contact Material		Ag Alloy
Contact Rating		NO:35A 14VDC NC:20A 14VDC
Contact Resistance		Max.100mΩ(6VDC 1A)
Load	Max.Continuous Current	40A(125℃, 1h)
	Max. Switching Current	Make:150A(lamp) Break:35A
	Min. Switching Load	1A 6VDC
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	1.6W
Nominal Coil Power (With Resistor)	1.8W
Max.Permitted Coil Voltage	20.2VDC(23℃) 15.7VDC(85℃)

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1 min
	Between coil and contacts	550VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +125℃
Humidity		5～85%RH
Shock Resistance		196m/s^2(20g)
Vibration Resistance		10Hz～40Hz,1.27mm double amplitude 40Hz～70Hz,49m/s^2(5g) 70Hz～100Hz,0.5mm double amplitude 100Hz～500Hz,98m/s^2(10g)
Weight		Approximately 35.00g

Note:Data shown are of initial value

CMA39

AUTOMOTIVE RELAY

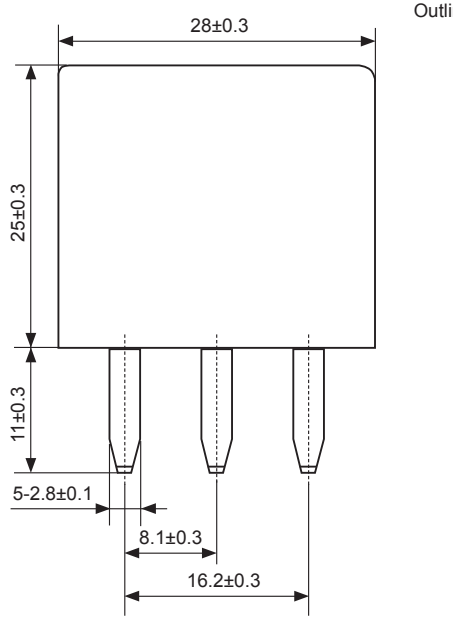
COIL DATA

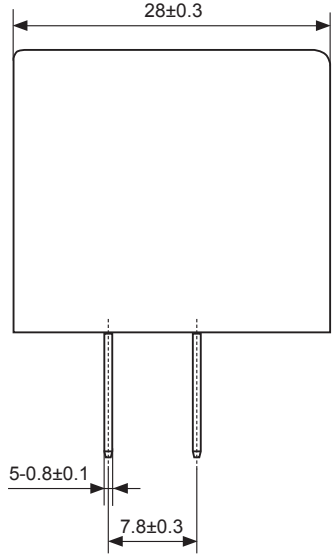
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel resistor (1±5%)Ω	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA39-(S)-DC12V	12	90	–	–	7.2	1.2	1.6
CMA39-(S)-DC12V (R)	12	90	680	79.5	7.2	1.2	1.8
CMA39-(S)-DC24V	24	360	–	–	14.4	2.4	1.6
CMA39-(S)-DC24V (R)	24	360	2700	317.6	14.4	2.4	1.8

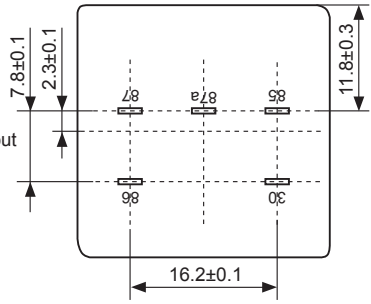
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline

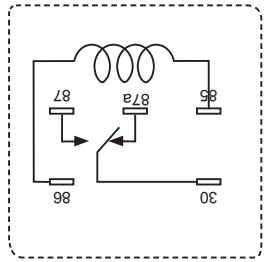




Mounting Hole Layout
(Bottom View)



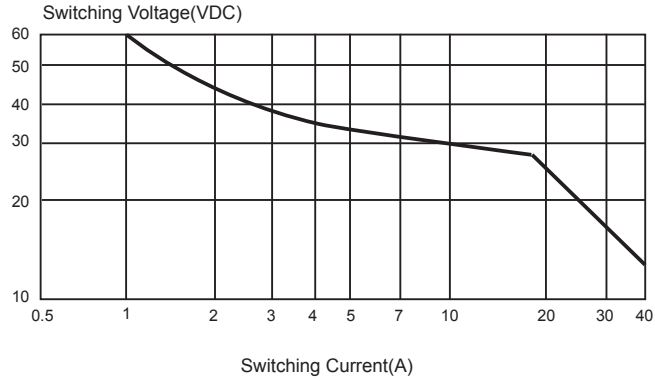
Wiring Diagram
(Bottom View)



Remark: Form A: Without 87a terminal
Form C: With all terminals

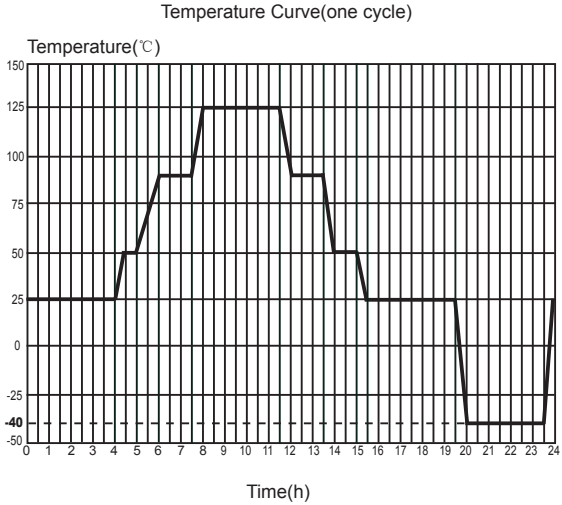
REFERENCE DATA

1.Max.range of permitted load



Note:
(1)It is available for 12VDC of coil voltage, NO contact and resistive load
(2)Please do test again when one of the voltage,current,operate frequency is different from the specified.

2.The temperature curve for endurance test



CMA4

AUTOMOTIVE RELAY

Features

- General purpose automotive relay
  Available in open frame and plastic sealed packages
  Sealed: 25.8×20.6×21.0(mm)
  Open: 18.0×23.4×17.9(mm)
- High contact capacity 40A
- USA or European footprints

Relay Picture

Open Type

Plastic Sealed Type

ORDERING INFORMATION

CMA4 – [S] – [DC12V] – [A] – [E]

Model	Enclosure	Coil Voltage	Contact Form	Footprint
	S - Plastic Sealed Type Blank-Open Type	DC6V, DC9V, DC12V, DC24V	A - 1 Form A C - 1 Form C	E - European footprint U - USA footprint

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A，1 Form C
Contact Material		Ag Alloy
Contact Rating		30A 14VDC Resistive (C) 40A 14VDC Resistive (A)
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Voltage	75VDC
	Max. Switching Current	Refer to table1
	Max. Switching Power	560W
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	1.6W

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC, 1min
	Between coil and contacts	550VAC, 1min
Operate Time		Max. 5ms
Release Time		Max. 3ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 21.0g (Plastic Sealed Type) Approximately 15.0g (Open Type)

Note:Data shown are of initial value

Table 1 (Maximum Switching Current)

Load	1 Form A	1 Form C	
		NO	NC
Contact Rating Current	40A	40A	30A
Max.Make Current	100A	100A	30A
Max.Break Current	40A	40A	30A

CMA4

AUTOMOTIVE RELAY

COIL DATA

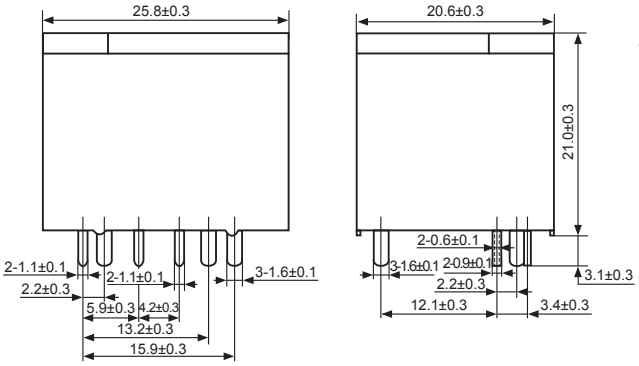
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA4-(S)-DC6V	6	22.5	3.6	0.6	1.6
CMA4-(S)-DC9V	9	51.0	5.4	0.9	
CMA4-(S)-DC12V	12	90.0	7.2	1.2	
CMA4-(S)-DC24V	24	360	14.4	2.4	

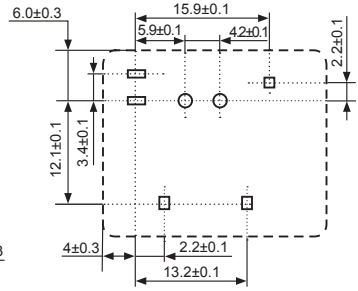
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Plastic Sealed Type
(European footprint)

Outline

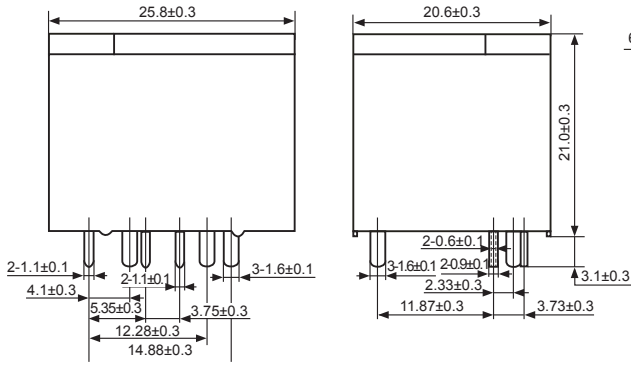


Mounting Hole Layout
(Bottom View)
European footprint (11mm)

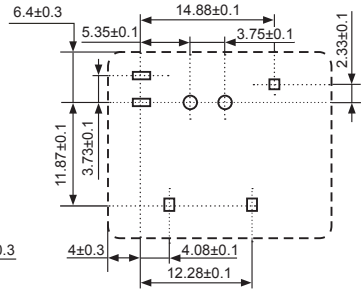


Plastic Sealed Type
(USA footprint)

Outline



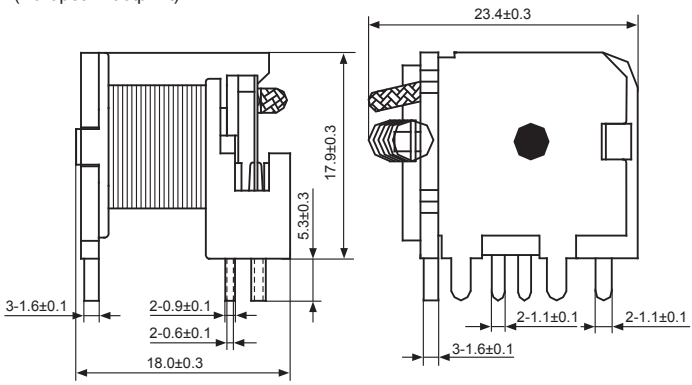
Mounting Hole Layout
(Bottom View)
USA footprint (8mm)



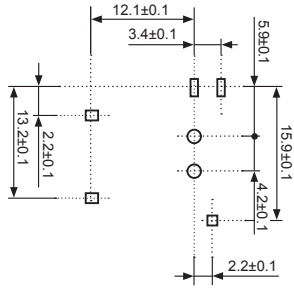
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Open Type
(European footprint)

Outline

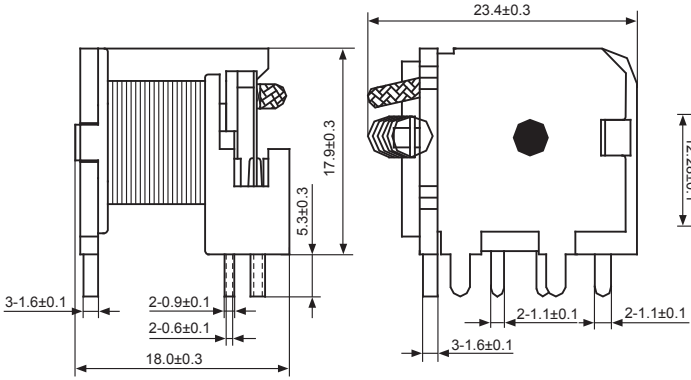


Mounting Hole Layout
(Bottom View)

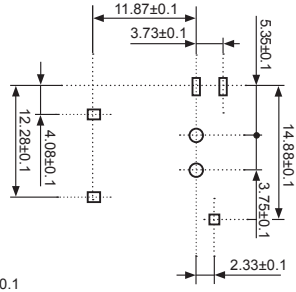


Open Type
(USA footprint)

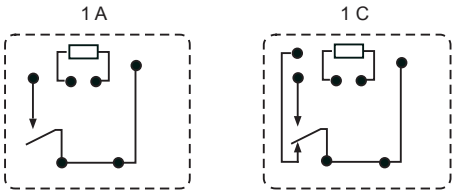
Outline

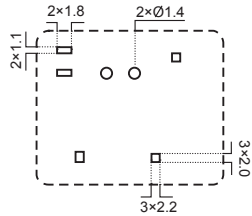


Mounting Hole Layout
(Bottom View)



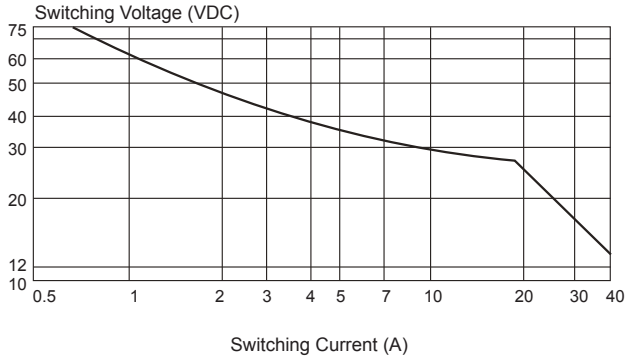
Wiring Diagram
(Bottom View)



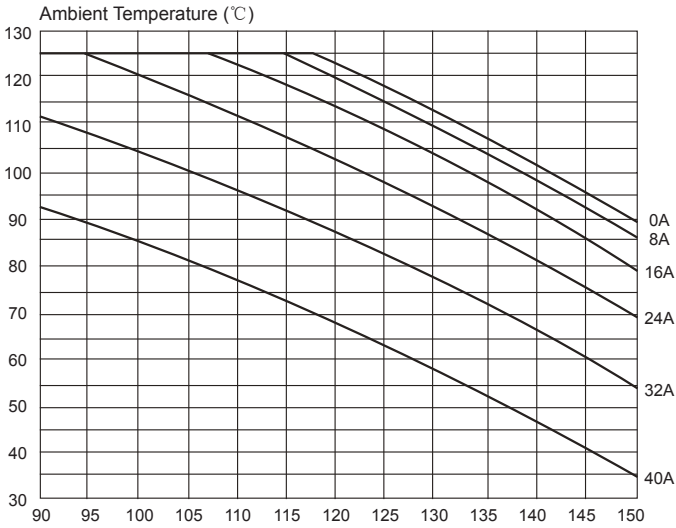


REFERENCE DATA

Limiting Curve for Power Load



Ambient Temperature vs. Coil Voltage for Continuous Duty



CMA51

AUTOMOTIVE RELAY

Features

- Compact microminiature general purpose automotive relay Dimensions: 15.6×12.2×13.7(mm)
- High inrush capability: 60A
- Contains no lead and features cadmium-free contacts ensuring
- environment-friendly use Applications: car alarm, power window, central locking system, seat adjustment control, etc

Relay Picture

ORDERING INFORMATION

CMA51 [H] - [S] - [DC12V] - [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	H - High Sensitivety (600mW) Blank-Standard (800mW)	S - Plastic Sealed Type	DC6V, DC9V, DC10V, DC12V, DC24V	A - 1 Form A B - 1 Form B C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A, 1 Form B, 1 Form C
Contact Material		Ag Alloy
Contact Rating		A: 20A 14VDC Resistive B, C: 15A 14VDC Resistive
Contact Resistance		Max. 50mΩ (6VDC 1A)
Load	Max. Switching Voltage	30VDC
	Max. Continuous Current	35A/10min.25A/1 Hr
	Max. Switching Current	35A
	Max.Inrush Current	60A
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	0.6W,0.8W

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC, 1min
	Between coil and contacts	550VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 10ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 6.0g

Note:Data shown are of initial value

CMA51

AUTOMOTIVE RELAY

COIL DATA

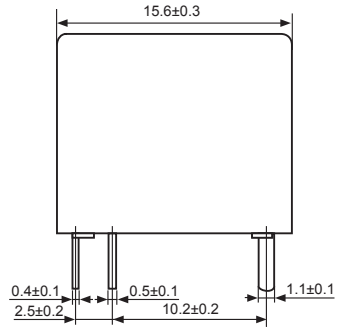
Ambient Temperature: 23℃

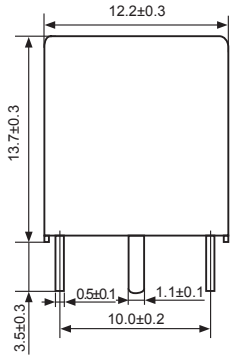
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA51H-S-DC6V	6	60	3.6	0.6	0.6
CMA51H-S-DC9V	9	135	5.4	0.9	
CMA51H-S-DC10V	10	167	6.0	1.0	
CMA51H-S-DC12V	12	240	7.2	1.2	
CMA51H-S-DC24V	24	960	14.4	2.4	
CMA51-S-DC6V	6	45	3.6	0.6	0.8
CMA51-S-DC9V	9	100	5.4	0.9	
CMA51-S-DC10V	10	125	6.0	1.0	
CMA51-S-DC12V	12	180	7.2	1.2	
CMA51-S-DC24V	24	720	14.4	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

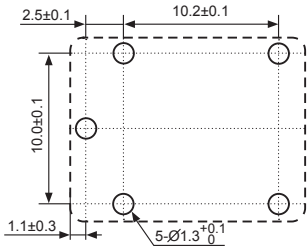
1 Form C

Outline

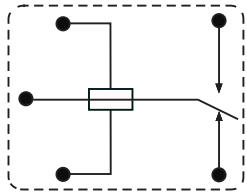




Mounting Hole Layout
(Bottom View)



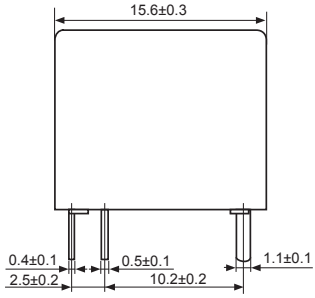
Wiring Diagram
(Bottom View)

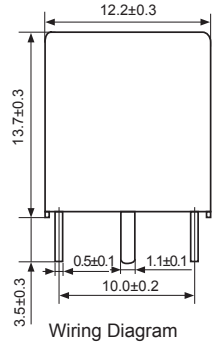


OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

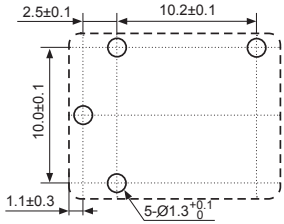
1 Form A

Outline

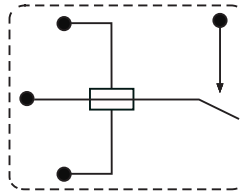




Mounting Hole Layout
(Bottom View)

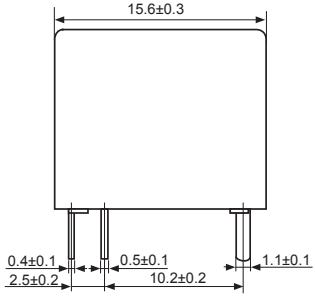


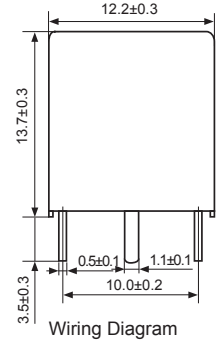
Wiring Diagram
(Bottom View)



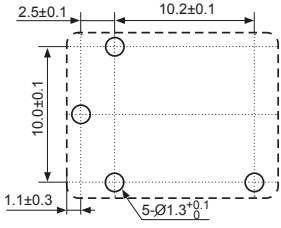
1 Form B

Outline

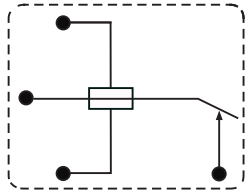




Mounting Hole Layout
(Bottom View)

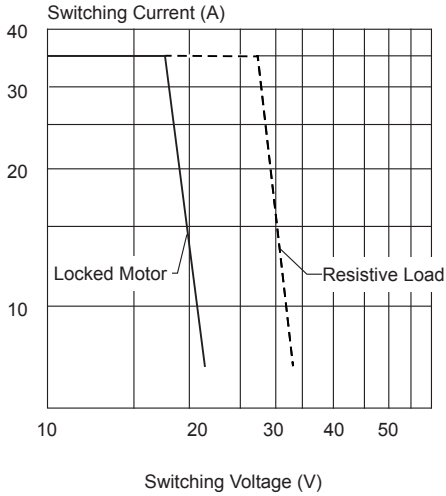


Wiring Diagram
(Bottom View)

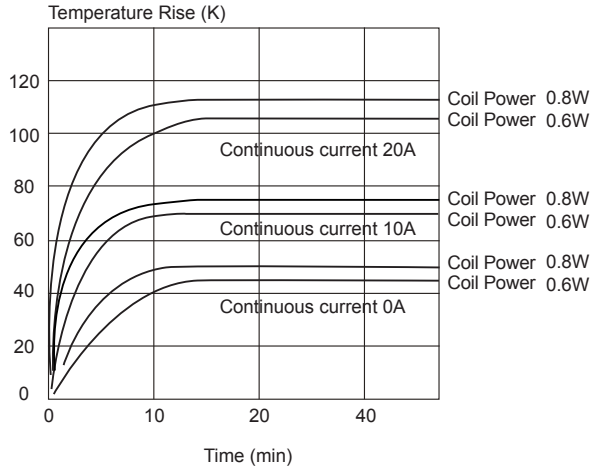


REFERENCE DATA

Maximum Switching Power



Coil Temperature Rise (Ambient Temperature: 23℃)



CMA512

AUTOMOTIVE RELAY

Features

- Miniature automotive twin relay Dimensions:23.2×16.0×14.1(mm)
- High inrush capability: 60A
- Contains no lead and features cadmium-free contacts ensuring environment-friendly use
- Applications: car alarm, power window, central locking system, seat adjustment control, etc

Relay Picture

ORDERING INFORMATION

CMA512 - S - DC12V

Model	Enclosure	Coil Voltage
	S - Plastic Sealed Type	DC6V, DC9V, DC10V, DC12V, DC24V

Remarks: 1. Contact Form: 2×1 Form C 2. Coil Power: 600mW

SPECIFICATION

CONTACT DATA

Contact Form		2×1 Form C
Contact Material		Ag Alloy
Contact Rating		15A 14VDC Resistive
Contact Resistance		Max. 50mΩ (6VDC 1A)
Load	Min. Switching Load	6VDC 1A
	Max. Continuous Current	35A/10min. 25A/1 Hr
	Max. Switching Load	35A
	Max.Inrush Current	60A
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	0.6W

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC, 1min
	Between coil and contacts	550VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 12.0g

Note:Data shown are of initial value

COIL DATA

Ambient Temperature: 23℃

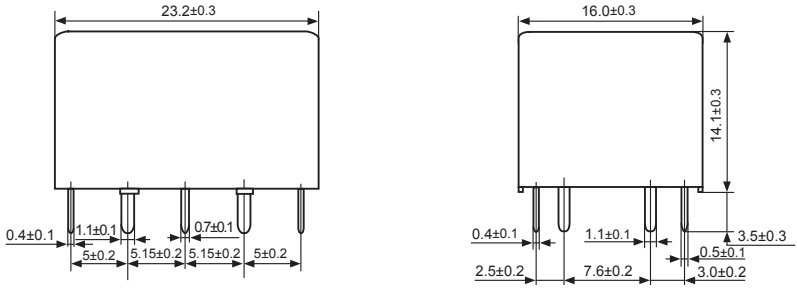
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA512-S-DC6V	6	60	3.6	0.6	0.6
CMA512-S-DC9V	9	135	5.4	0.9	
CMA512-S-DC10V	10	167	6.0	1.0	
CMA512-S-DC12V	12	240	7.2	1.2	
CMA512-S-DC24V	24	960	14.4	2.4	

CMA512

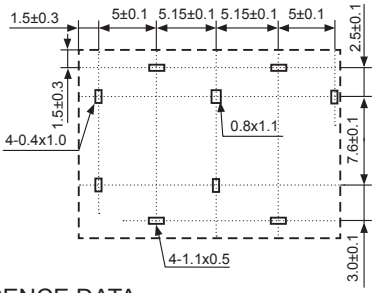
AUTOMOTIVE RELAY

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: MM)

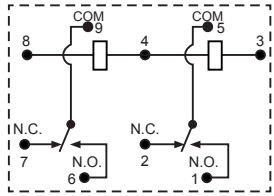
Outline



Mounting Hole Layout
(Bottom View)

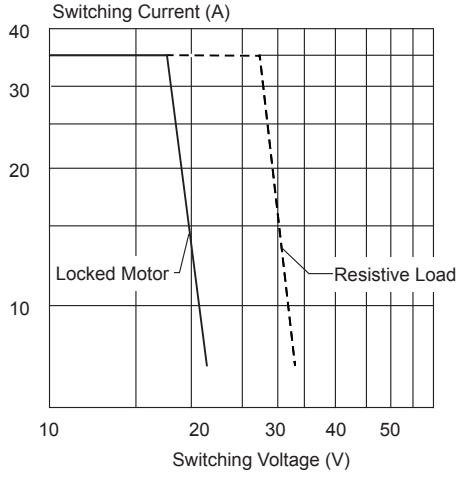


Wiring Diagram
(Bottom View)



REFERENCE DATA

Maximum Switching Power



CMA53
CMA532

AUTOMOTIVE RELAY

Features

- Small and compact
- Available in single and twin relay
  CMA53 - single relay, CMA532 - twin relay
  CMA53 Dimensions: 13.0×12.0×10.0(mm)
  CMA532 Dimensions: 23.6×13.0×10.0(mm)
- High contact capacity 30A
- Low noise operation
- Contains no lead and features cadmium-free contacts ensuring environment-friendly use
- Applications: car alarm, power window, central locking system, seat adjustment control, sunroof motor control, wiper, etc

Relay Picture

CMA53

CMA532

ORDERING INFORMATION

CMA53 [H] – [S] – [DC12V] – [A]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
CMA53 CMA532	H - High Sensitivety (550mW) Blank - Standard (800mW)	S - Plastic Sealed Type	DC6V, DC10V, DC12V, DC24V	CMA53 A-1 Form A, C-1 Form C CMA532 A-2×1 Form A, C-2×1 Form C

Remark: 1. CMA53 single relay, CMA532 twin relay

SPECIFICATION

CONTACT DATA

Contact Form	CMA53：1 Form A, 1 Form C	
	CMA532：2×1 Form A, 2×1 Form C	
Contact Material		Ag Alloy
Contact Rating		NO/NC: 20A/15A 14VDC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max.Continued operation Current	NO: 30A (23℃, 1h) NC: 25A (23℃, 1h)
	Max.Switching Voltage	16VDC
	Max. Switching Current	30A
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	0.55W, 0.8W

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	500VAC, 1min
	Between coil and contacts	500VAC, 1min
Operate Time		Max. 4ms
Release Time		Max. 2ms
Operating Temperature		-40℃ to +105℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	30g, 6ms
	Misoperation	30g, 6ms
Vibration Resistance	Endurance	10 -500Hz, 6g
	Misoperation	10 -500Hz, 6g
Weight		CMA53: Approximately 4.0g CMA532: Approximately 8.0g

Note:Data shown are of initial value

COIL DATA

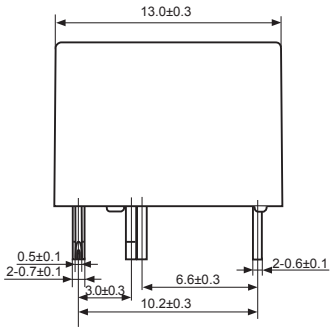
Ambient Temperature: 23℃

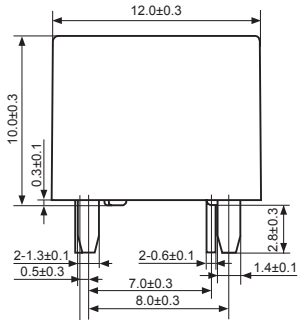
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA53H-S-DC6V	6	65	3.5	0.6	0.55
CMA53H-S-DC10V	10	181	5.7	1.0	
CMA53H-S-DC12V	12	261	6.9	1.2	
CMA53H-S-DC24V	24	1047	13.8	2.4	
CMA532H-S-DC6V	6	65	3.5	0.6	
CMA532H-S-DC10V	10	181	5.7	1.0	
CMA532H-S-DC12V	12	261	6.9	1.2	
CMA532H-S-DC24V	24	1047	13.8	2.4	
CMA53-S-DC6V	6	45	3.5	0.6	0.8
CMA53-S-DC10V	10	125	5.7	1.0	
CMA53-S-DC12V	12	180	6.9	1.2	
CMA53-S-DC24V	24	720	13.8	2.4	
CMA532-S-DC6V	6	45	3.5	0.6	
CMA532-S-DC10V	10	125	5.7	1.0	
CMA532-S-DC12V	12	180	6.9	1.2	
CMA532-S-DC24V	24	720	13.8	2.4	

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

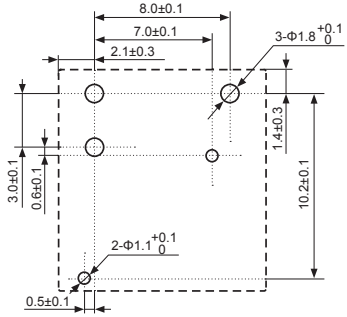
CMA53

Outline

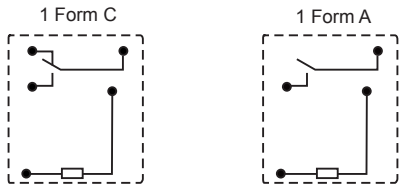




Mounting Hole Layout
(Bottom View)



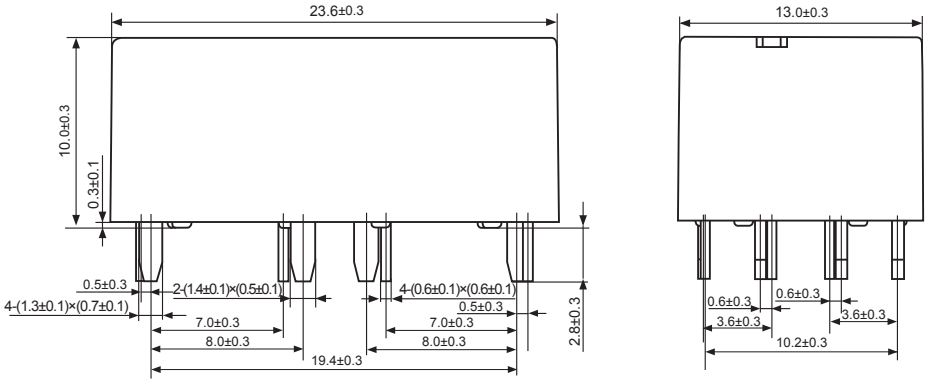
Wiring Diagram
(Bottom View)



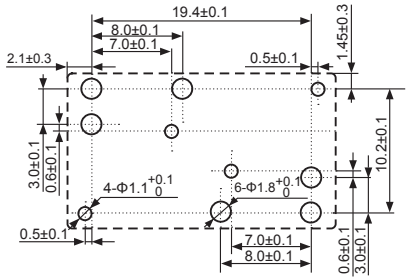
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

CMA532

Outline

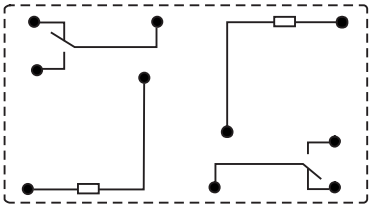


Mounting Hole Layout
(Bottom View)

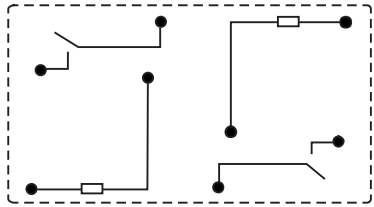


Wiring Diagram
(Bottom View)

1 Form C

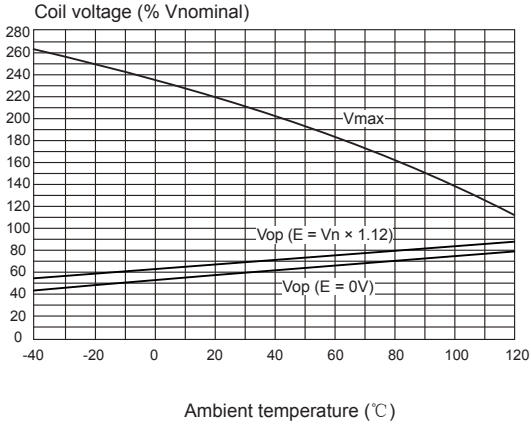


1 Form A



REFERENCE DATA

Operating voltage range



Does not take into account temperature rise due to contact current

Vop = Operation Voltage

E = Pre-energization

CMA54
CMA542

AUTOMOTIVE RELAY

Features

- Small and compact
- Available in single and twin relay
  CMA54 - single relay, CMA542 - twin relay
  CMA54 dimensions: 17.5×9.2×13.2(mm)
  CMA542 dimensions: 17.5×16.9×13.2(mm)
- High contact capacity 25A
- Low noise operation
- Contains no lead and features cadmium-free contacts ensuring environment-friendly use
- Applications: car alarm, power window, central locking system, seat adjustment control, sunroof motor control, wiper, etc

Relay Picture

CMA54 CMA542

ORDERING INFORMATION

CMA54 – [S] – [DC12V] – [C]

Model	Enclosure	Coil Voltage	Contact Form
CMA54 CMA542	S - Plastic Sealed Type	DC12V	CMA54 C - 1 Form C CMA542 C -2×1 Form C

Remark: 1. CMA54 single relay, CMA542 twin relay; 2. Nominal Coil Power: 0. 56W

SPECIFICATION

CONTACT DATA

Contact Form		CMA54：1 Form C
		CMA542：2×1 Form C
Contact Material		Ag Alloy
Contact Rating		CMA54: 20A 14VDC
		CMA542: 2×20A 14VDC
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max. Switching Current	25A
	Max. Switching Voltage	40VDC
	Max. Switching Power	280W
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	0.56W

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	500VAC, 1min
	Between coil and contacts	500VAC, 1min
Operate Time		Max. 3ms
Release Time		Max. 1.3ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	450m/s^2
	Misoperation	300m/s^2
Vibration Resistance	Endurance	10 -200Hz, 100m/s^2
	Misoperation	10 -200Hz, 100m/s^2
Weight		CMA54: Approximately 5.0g CMA542: Approximately 10.0g

Note:Data shown are of initial value

COIL DATA

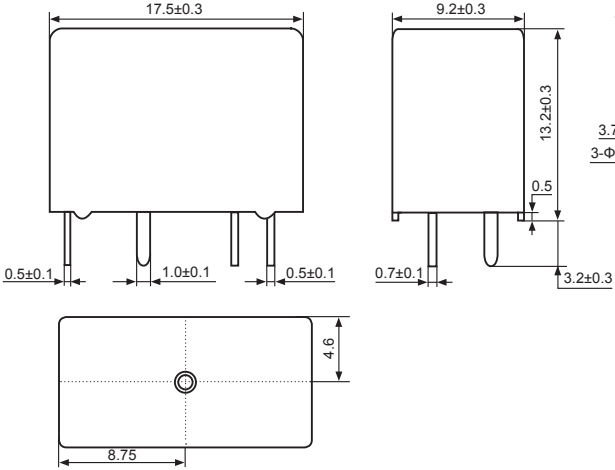
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA54-S-DC12V	12	255	7.2	1.0	0.56
CMA542-S-DC12V	12	255	7.2	1.0	

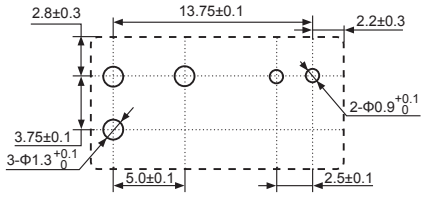
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

CMA54

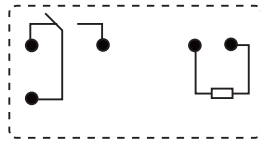
Outline



Mounting Hole Layout
(Bottom View)

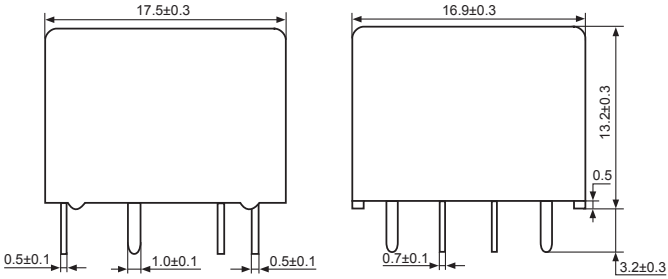


Wiring Diagram
(Bottom View)

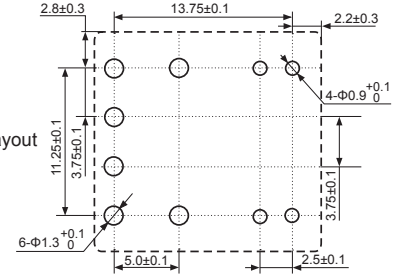


CMA542

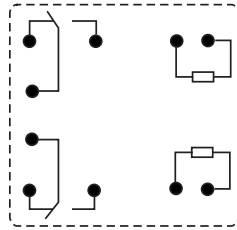
Outline



Mounting Hole Layout
(Bottom View)

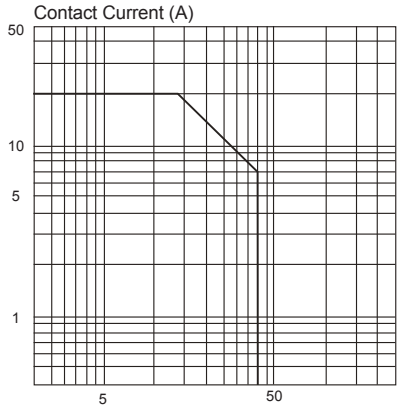


Wiring Diagram
(Bottom View)

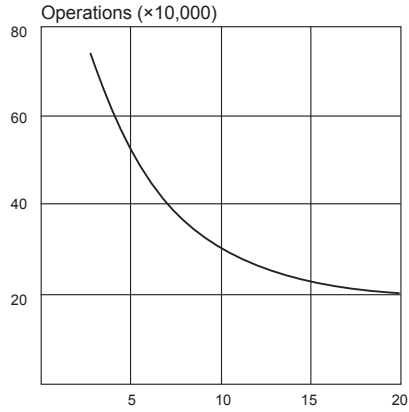


REFERENCE DATA

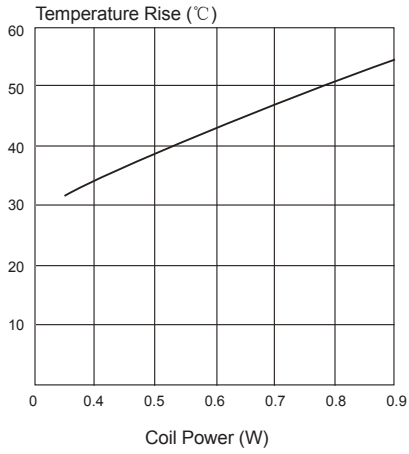
Maximum Switching Power



Life Curve



Coil Temperature Rise



CMA55

AUTOMOTIVE RELAY

Features

- Microminiature automotive relay
  Dimensions: 15.6×12.2×13.7(mm)
- Double make contact
- Applications:car alarm, reverse sensor, etc

Relay Picture

ORDERING INFORMATION

CMA55 – S – DC12V – A

Model	Enclosure	Coil Voltage	Contact Form
	S - Plastic Sealed Type	DC6V, DC9V, DC10V, DC12V, DC24V	A - Double N.O. Contact

SPECIFICATION

CONTACT DATA

Contact Form		Double N.O. Contact
Contact Material		Ag Alloy
Contact Rating		2 × 6A 13.5VDC Resistive
Contact Resistance		Max. 100mΩ (6VDC 1A)
Load	Max.Continuous current	2×10A（23℃,1h）
	Max. Switching Current	2×10A
	Min. Switching Load	6VDC 1A
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

COIL DATA

Nominal Coil Power	1.0W

GENERAL DATA

Insulation Resistance		Min. 100MΩ 500VDC
Dielectric Strength	Between open contacts	500VAC, 1min
	Between coil and contacts	500VAC, 1min
Operate Time		Max. 10ms
Release Time		Max. 5ms
Operating Temperature		-40℃ to +85℃
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	1,000m/s^2
	Misoperation	100m/s^2
Vibration Resistance	Endurance	10~55Hz, 1.5mm double amplitude
	Misoperation	10~55Hz, 1.5mm double amplitude
Weight		Approximately 6.0g

Note:Data shown are of initial value

COIL DATA

Ambient Temperature: 23℃

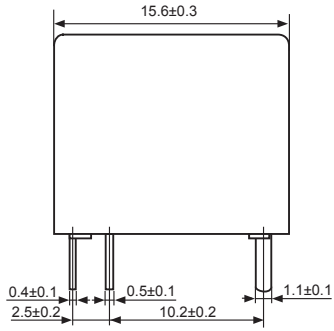
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA55-S-DC6V	6	36	3.5	0.6	1.0
CMA55-S-DC9V	9	81	5.2	0.9	
CMA55-S-DC10V	10	100	5.8	1.0	
CMA55-S-DC12V	12	144	6.9	1.2	
CMA55-S-DC24V	24	576	14.0	2.4	

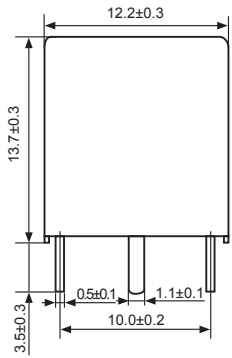
CMA55

AUTOMOTIVE RELAY

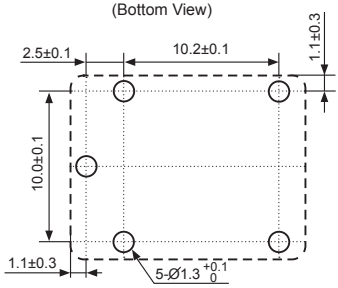
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline



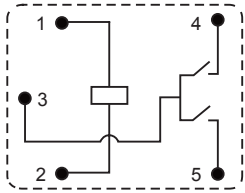


Mounting Hole Layout
(Bottom View)

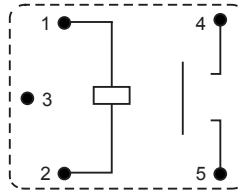


Wiring Diagram
(Bottom View)

Wiring Type 1

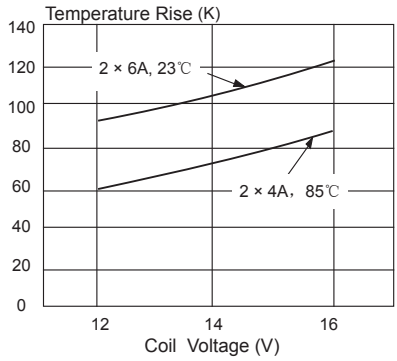


Wiring Type 2

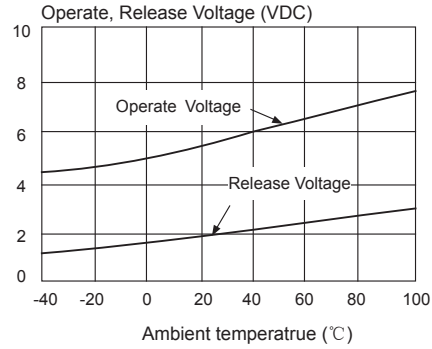


REFERENCE DATA

Coil Temperature Rise



Operate, Release Voltage VS. Temperature（12VDC）



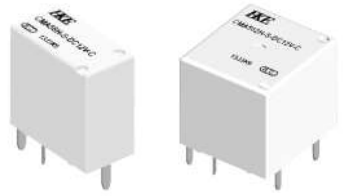
CMA56
CMA562

AUTOMOTIVE RELAY

Features

- Miniature automotive relay
  CMA56 dimensions:14×7.2×13.7mm
  CMA562 dimensions:14×15.4×13.7mm
  CMA56T dimensions:14×7.2×14.2mm
  CMA562T dimensions:14×15.4×14.2mm
- 25A of Motor Load;
- Single relay or twin relay

Relay Picture



CMA56 CMA562

ORDERING INFORMATION

CMA56 [T] [H] - [S] - [DC12V] - [C]

CMA56(Single relay) CMA562(Twin relay)	Soldering	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form
	Blank-Standard T - Reflow	H - High Sensitivety (640mW) Blank-Standard (800mW)	S - Plastic Sealed Type	DC6V,DC9V, DC12V,DC24V	C - 1 Form C

Remark：1. Available in 1 Form C only

SPECIFICATION

CONTACT DATA

Contact Form		C- 1 Form C
Contact Material		Ag Alloy
Contact Rating		Motor:25A(Inrush) 14VDC Resistance:20A 14VDC
Contact Resistance		Max.100mΩ (6VDC 1A)
Load	Max. Switching Voltage	16VDC
	Max. Switching Current	30A
	Max.Continuous current	30A(23℃,1h)
	Min. Switching Load	1A 6VDC
Life	Electrical	1×10^5 ops(720 ops/h)
	Mechanical	1×10^6 ops(300 ops/min)

COIL DATA

Nominal Coil Power	0.64W,0.8W
Max.Permitted Coil Voltage	0.64W: 20VDC(23℃),16VDC(85℃)
	0.8W: 18VDC(23℃), 14VDC(85℃)

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1 min
	Between coil and contacts	550VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +105℃ (Standard)
		-40℃ to +125℃ (Reflow)
Humidity		35～95%RH, +40℃
Shock Resistance	Endurance	100G
	Misoperation	10G
Vibration Resistance	Endurance	10～500Hz,5G Acceleration
	Misoperation	10～500Hz,5G Acceleration
Weight		CMA56:4.0g CMA562:8.0g

Note:Data shown are of initial value

COIL DATA

Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA56(2)(T)-S-DC6V-C	6	45	3.6	0.6	0.8
CMA56(2)(T)-S-DC9V-C	9	100	5.4	0.9	
CMA56(2)(T)-S-DC12V-C	12	180	7.2	1.2	
CMA56(2)(T)-S-DC24V-C	24	720	14.4	2.4	

CMA56
CMA562

AUTOMOTIVE RELAY

COIL DATA

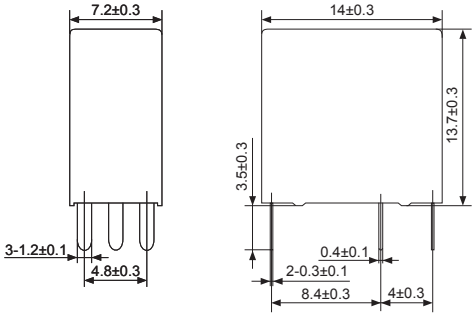
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA56(2)(T)H-S-DC6V-C	6	56	3.6	0.6	0.64
CMA56(2)(T)H-S-DC9V-C	9	127	5.4	0.9	
CMA56(2)(T)H-S-DC12V-C	12	225	7.2	1.2	
CMA56(2)(T)H-S-DC24V-C	24	900	14.4	2.4	

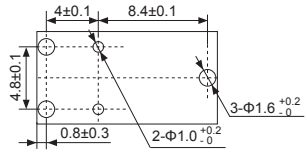
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

CMA56 Single relay

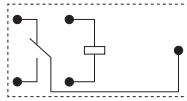
Outline



Mounting Hole Layout
(Bottom View)

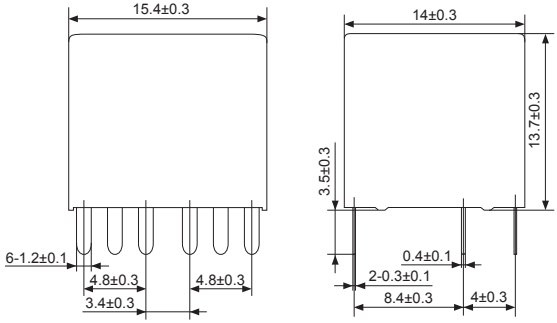


Wiring Diagram
(Bottom View)

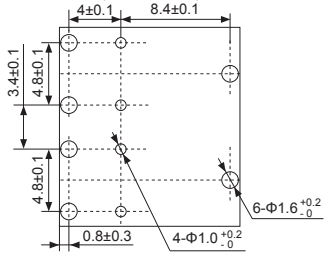


CMA562 Twin relay

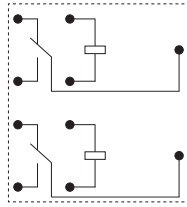
Outline



Mounting Hole Layout
(Bottom View)



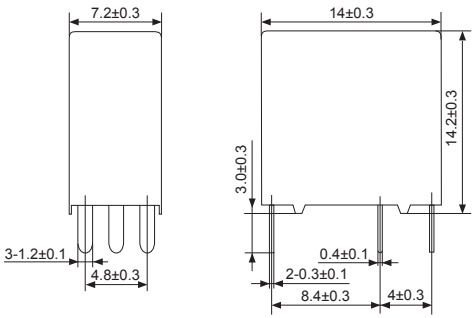
Wiring Diagram
(Bottom View)



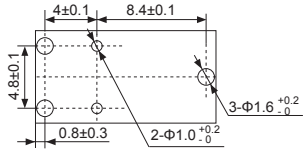
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

CMA56TSingle relay（Reflow）

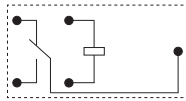
Outline



Mounting Hole Layout
(Bottom View)

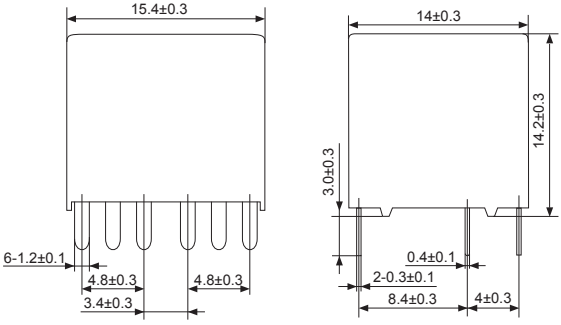


Wiring Diagram
(Bottom View)

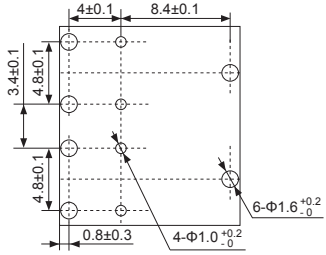


CMA562T Twin relay（Reflow）

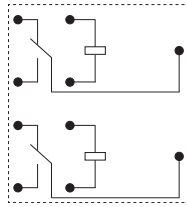
Outline



Mounting Hole Layout
(Bottom View)



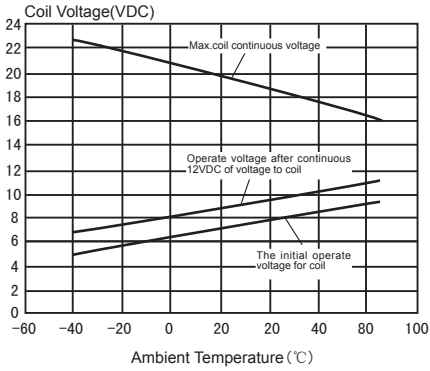
Wiring Diagram
(Bottom View)



REFERENCE DATA

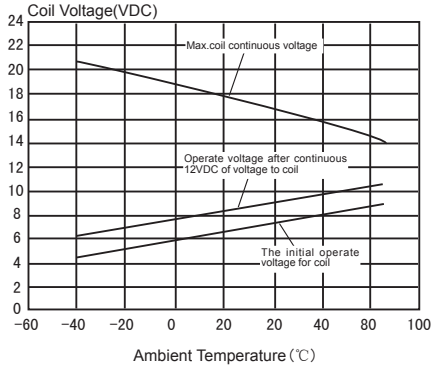
1.The range of coil continuous voltage

The range of coil continuous voltage for 225Ω



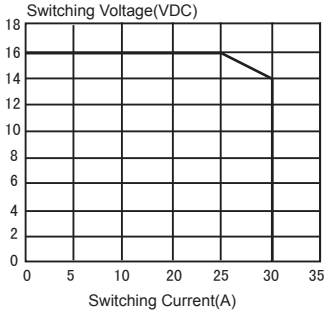
Note:
(1)It is available for no load when Max.continuous coil voltage is energized to relay.
(2)The Operate voltage will be affected by coil pre-applied time and voltage.It will be increased after pre-applied.
(3)The Max.permitted temperature of coil is 180℃.

The range of coil continuous voltage for 180Ω



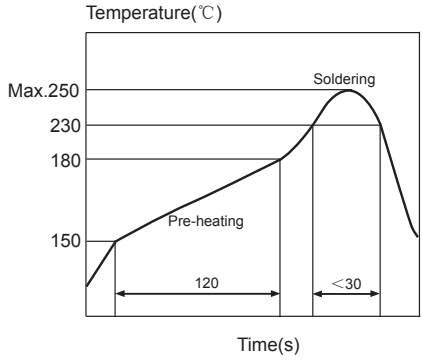
Note:
(1)It is available for no load when Max.continuous coil voltage is energized to relay.
(2)The Operate voltage will be affected by coil pre-applied time and voltage.It will be increased after pre-applied.
(3)The Max.permitted temperature of coil is 180℃.

2.Max.range of permitted load(23℃)



Note:
(1)It is avaible for Normal Open Contact(NO side), resistance load.
(2)It shall be conducted the electrical endurance by specified load. It is desirable that the product to be tested again if any one of the actually used contact voltage , current, frequency is different from specified.

3.Reflow Solder，PCB Temperature (recommended solder temperature)



CMA57

AUTOMOTIVE RELAY

Features

- Microminiature：(15.6×15.2×16.5)mm
- 125℃ of operating ambient temperature
- 2.8mm of Flat quick connection terminal
- Compliance to Rohs、ELV Directive

Relay Picture

ORDERING INFORMATION

CMA57 - [S] - [DC12V] - [A] - [R]

Model	Enclosure	Coil Voltage	Contact Form	Parallel Resistor
	S - Plastic Sealed Type	DC12V	A - 1 Form A	R- With Resistor(1000Ω) Blank-Standard

SPECIFICATION

CONTACT DATA

Contact Form		A- 1 Form A
Contact Material		Ag Alloy
Contact Rating		20A 14VDC
Contact Resistance		Max.50mΩ
Load	Max.Continous Current	20A
	Max.Switching Current	Make:100A Break:30A
	Min.Switching Load	6VDC 1A
Life	Electrical	100,000 operations
	Mechanical	1,000,000 operations

COIL DATA

Nominal Coil Power	0.95W
Nominal Coil Power(With Resistor)	1.1W

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1 min
	Between coil and contacts	550VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +125℃
Humidity		5～85%RH
Shock Resistance		196m/s^2(20g)
Vibration Resistance		10Hz～40Hz,1.27mm Double Amplitude 40Hz～70Hz,49m/s^2(5g) 70Hz～100Hz,0.5mm Double Amplitude 100Hz～500Hz,98m/s^2(10g)
Weight		10g

Note:Data shown are of initial value

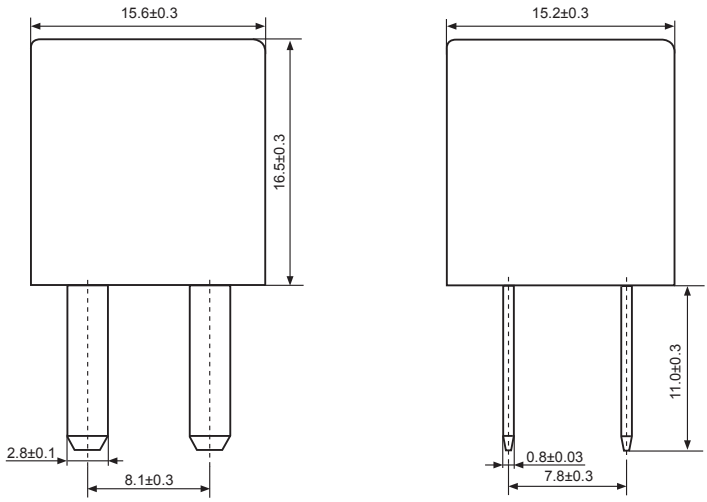
COIL DATA

Ambient Temperature: 23℃

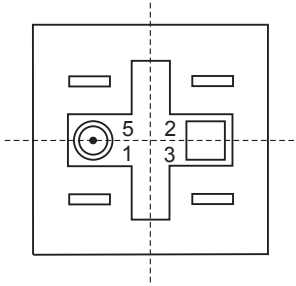
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel resistor (1±5%)Ω	Equivalent Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA57-S-DC12V-A	12	155	-	-	7.2	1.2	0.95
CMA57-S-DC12V-A-R	12	155	1000	135	7.2	1.2	1.1

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

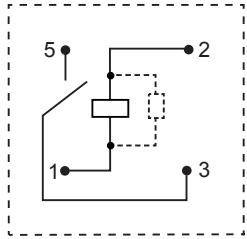
Outline



Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



Note: The degree of vertical for terminals is 0.3mm.

CMA58

AUTOMOTIVE RELAY

Features

- Reduction of 20dB sound pressure
- Saving Space
- Plastic Cover Sealed
- Compliance to Rohs、ELV Directive

Relay Picture

ORDERING INFORMATION

CMA58 - S - DC12V - C

Model	Enclosure	Coil Voltage	Contact Form
	S - Plastic Sealed Type	DC12V	C - 1 Form C

SPECIFICATION

CONTACT DATA

Contact Form		1 Form C
Contact Material		Ag Alloy
Contact Rating		NO/NC:20A/10A 14VDC
Contact Resistance		Max.50mΩ(1A 6VDC)
Load	Max.Continous Current	NO:35A/2min,25A/1h(20℃) NO:30A/2min,20A/1h(85℃)
	Max.Switching Current	20A
	Min.Switching Load	1A 14VDC
Life	Electrical	100,000 operations
	Mechanical	10,000,000 operations

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1 min
	Between coil and contacts	550VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +85℃
Humidity		5～85%RH
Shock Resistance		1000m/s^2(100g)
Vibration Resistance		10Hz～500Hz,44.1m/s^2(4.5g)
Weight		6.5g

Note:Data shown are of initial value

COIL DATA

Nominal Coil Power	0.64W

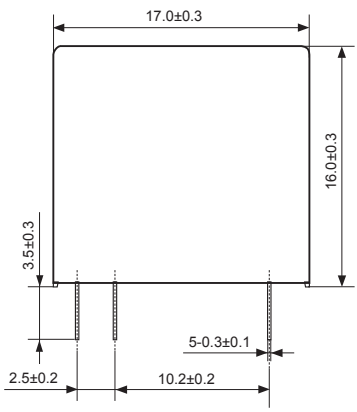
COIL DATA

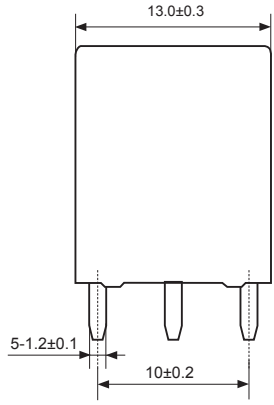
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Release Voltage ≥VDC	Coil Power W
CMA58-S-DC12V-C	12	225	7.2	1.0	0.64

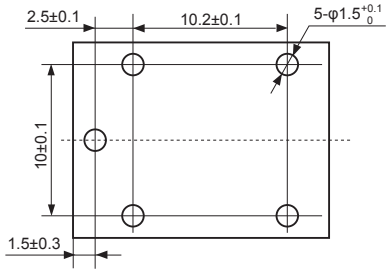
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline

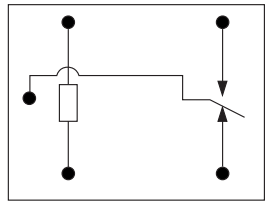




Mounting Hole Layout
(Bottom View)

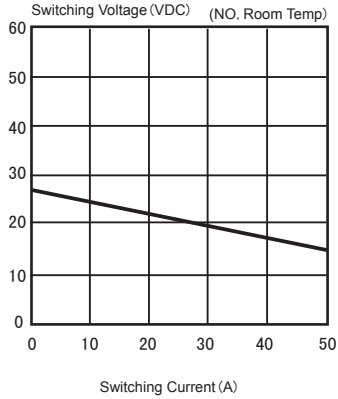


Wiring Diagram
(Bottom View)

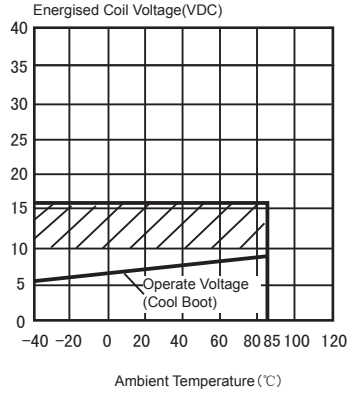


REFERENCE DATA

1.Max.permitted Load(Resistance,Initial)

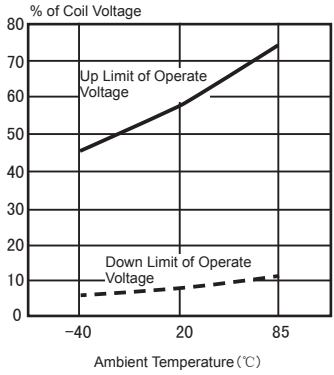


2.Ambient Temperature and the range of coil voltage



3.The performance of Ambient Temperature

3.The performance of Ambient Temperature



CMA59

AUTOMOTIVE RELAY

Features

- Automative Mute Relay
  Dimensions：20.4×15.1×22.0mm
- 100,000operations for 25A 14VDC
  (Locked rotor current)
- Quick-Flat connection terminal
- sound pressure≤50dB
- Compliance to RoHS and ELV

Relay Picture

ORDERING INFORMATION

CMA59 - [S] - [DC12V] - [A] - [R]

Model	Enclosure	Coil Voltage	Contact Form	Parallel Resistor
	S - Plastic Sealed Type	DC12V	A - 1 Form A C - 1 Form C	Blank-Standard R- With Resistor (12V - 680Ω)

SPECIFICATION

CONTACT DATA

Contact Form		A-1 Form A,C-1 Form C
Contact Material		Ag Alloy
Contact Rating		A(Resistive)：20A 14VDC C(Resistive)：NO:20A 14VDC NC:10A 14VDC Motor：25A(peak) 14VDC
Contact Resistance		Max.100mΩ(6VDC 1A)
Load	Max. Switching Voltage	16VDC
	Max. Switching Current	30A
	Max.Continous Current	30A(23℃,1h)
	Min. Switching Load	1A 6VDC
Life	Electrical	100,000ops (720ops/h)
	Mechanical	1,000,000ops (300ops/min)

COIL DATA

Nominal Coil Power	0.64W
Nominal Coil Power(With Resistor)	0.85W
Max.nominal coil voltage(5A)	DC14V(Continuous) DC16V(15 min.)

GENERAL DATA

Insulation Resistance		Min.100MΩ 500VDC
Dielectric Strength	Between open contacts	550VAC,50/60Hz,1 min
	Between coil and contacts	550VAC,50/60Hz,1 min
Operate Time		Max.10ms
Release Time		Max.10ms
Operating Temperature		-40℃ to +125℃
Humidity		35～95%RH，+40℃
Shock Resistance	Endurance	1,000m/s^2(10g)
	Misoperation	100m/s^2(100g)
Vibration Resistance	Endurance	10～55Hz,1.5mm double amplitude
	Misoperation	10～55Hz,1.5mm double amplitude
Weight		Approximately11.6g

Note:Data shown are of initial value

CMA59

AUTOMOTIVE RELAY

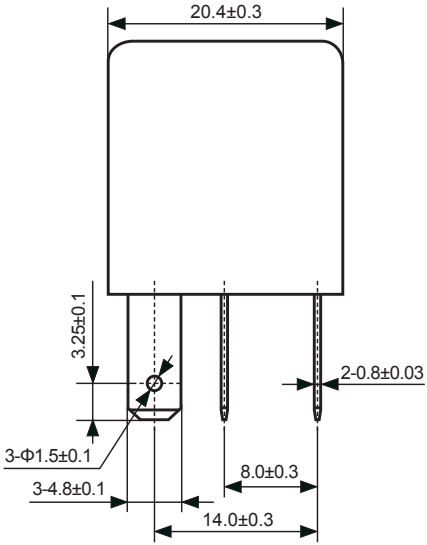
COIL DATA

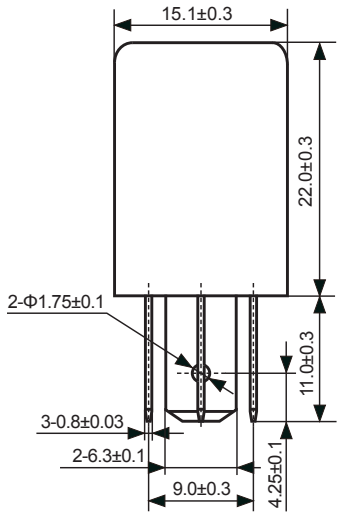
Ambient Temperature: 23℃

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Parallel resistor Ω+/-5%	Equivalent resistance(Ω+/-10%)	Operate Voltage ≤VDC	Release Voltage ≥VDC	Max. Allowable Voltage (5A)	Coil Power W
CMA59-S-DC12V	12	225	–	–	7.2	1.2	14	0.64
CMA59-S-DC12V (R)	12	225	680	169	7.2	1.2	14	0.85

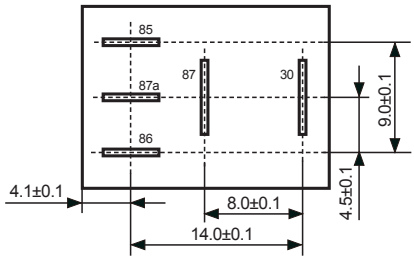
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline

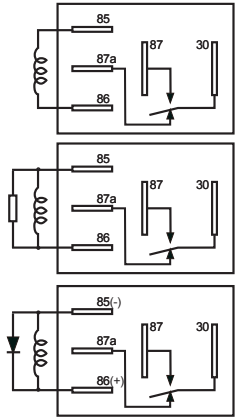




Mounting Hole Layout
(Bottom View)



Wiring Diagram
(Bottom View)



HKE16

Magnetic Latching Relay

Features

- Outline Dimension: 29.0×12.7×16.0mm
- DPST 16A Magetic latching relay Max.Surge Current 350A/2ms
- Energy-saving and Environmental
- Friendly product(RoHS Compliant)

Safety Approval

cUL us NO.E322375

Relay Picture

ORDERING INFORMATION

HKE16 [H] - [S] - [DC12V] - [2A] - [L1]

Model	Coil Sensitivity	Enclosure	Coil Voltage	Contact Form	Coil Type
	H - High Sensitivity Blank-Standard	S - Plastic Sealed Type	DC3V,DC5V,DC6V,DC9V, DC12V,DC24V,DC48V	2A-DPST	L1 - Single coil L2 - Double coil

SPECIFICATION

CONTACT DATA

Contact Form		2A-DPST
Contact Material		Ag Alloy
Contact Rating		16A 250VAC,5×10^4 (Res) 20A 250VAC,2×10^4 (Res) 1.5HP 250VAC,3×10^4 (HP) 8A 220VAC,cosφ0.4,3×10^4 3300W 277VAC,2×10^4 (Electronic Ballast)
Contact Resistance		Max.20mΩ(24VDC 1A)
Load	Max. Switching Voltage	277VAC
	Max. Switching Current	20A
	Max.Continous Current	20A(23℃,1h)
	Min. Switching Load	1A 24VDC
Life	Electrical	Refer to "contact load"
	Mechanical	1×10^6 ops(300ops/min)

GENERAL DATA

Insulation Resistance		Min.1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC,50/60Hz,1min
	Between coil and contacts	4,000VAC,50/60Hz,1min
Operate Time		Max.15ms
Reset Time		Max.15ms
Operating Temperature		-40℃ to +85℃
Humidity		5～85%RH, +40℃
Shock Resistance	Destruction	1,000m/s^2
	Functional	100m/s^2
Vibration Resistance	Destruction	10～55Hz,1.5mmdouble amplitude
	Functional	10～55Hz,1.5mmdouble amplitude
Weight		Approximately12g

Note:Data shown are of initial value

COIL DATA

Coil Power for standard type	L1: 0.8W,L2: 1.2W
Coil Power for high sensitivity	L1: 0.6W,L2: 0.8W

SAFETY APPROVAL

File Number	Contact Form	Power Consumption	Coil Voltage	Contact Rating	Remarks
UL E322375	2A	L1: 0.8W,L2: 1.2W L1: 0.6W,L2: 0.8W	3,5,6,9,12,24,48VDC	16A 250VAC(GP)	Ambient Temperature: 85℃
	2A		3,5,6,9,12,24,48VDC	20A 250VAC(GP)	Ambient Temperature: 85℃
	2A		3,5,6,9,12,24,48VDC	TV-8 125VAC	Ambient Temperature: 40℃
	2A		3,5,6,9,12,24,48VDC	1.5HP 250VAC	Ambient Temperature: 85℃

Specifications subject to change without notice

COIL DATA

Ambient Temperature: 23℃

Standard

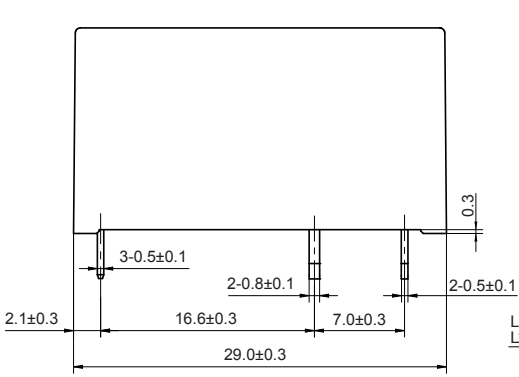
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Reset Voltage ≤VDC	Coil Power W	Pulse width ≥ms
HKE16-S-DC3V-2A-L1	3	11.3	2.4	2.4	0.8	30
HKE16-S-DC5V-2A-L1	5	31.3	4.0	4.0		
HKE16-S-DC6V-2A-L1	6	45	4.8	4.8		
HKE16-S-DC9V-2A-L1	9	101.3	7.2	7.2		
HKE16-S-DC12V-2A-L1	12	180	9.6	9.6		
HKE16-S-DC24V-2A-L1	24	720	19.2	19.2		
HKE16-S-DC48V-2A-L1	48	2880	38.4	38.4		
HKE16-S-DC3V-2A-L2	3	7.5+7.5	2.4	2.4	1.2	30
HKE16-S-DC5V-2A-L2	5	20.8+20.8	4.0	4.0		
HKE16-S-DC6V-2A-L2	6	30+30	4.8	4.8		
HKE16-S-DC9V-2A-L2	9	67.5+67.5	7.2	7.2		
HKE16-S-DC12V-2A-L2	12	120+120	9.6	9.6		
HKE16-S-DC24V-2A-L2	24	480+480	19.2	19.2		
HKE16-S-DC48V-2A-L2	48	1920+1920	38.4	38.4		

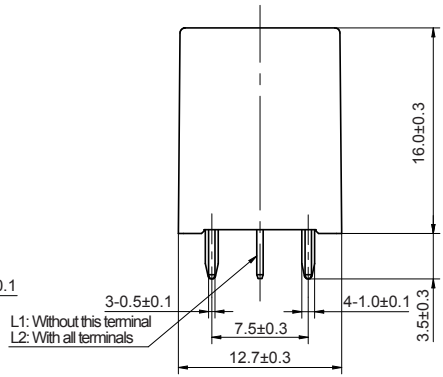
High Sensitivity

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Reset Voltage ≤VDC	Coil Power W	Pulse width ≥ms
HKE16H-S-DC3V-2A-L1	3	15	2.4	2.4	0.6	30
HKE16H-S-DC5V-2A-L1	5	42	4.0	4.0		
HKE16H-S-DC6V-2A-L1	6	60	4.8	4.8		
HKE16H-S-DC9V-2A-L1	9	135	7.2	7.2		
HKE16H-S-DC12V-2A-L1	12	240	9.6	9.6		
HKE16H-S-DC24V-2A-L1	24	960	19.2	19.2		
HKE16H-S-DC3V-2A-L2	3	11.3+11.3	2.4	2.4	0.8	30
HKE16H-S-DC5V-2A-L2	5	31.3+31.3	4.0	4.0		
HKE16H-S-DC6V-2A-L2	6	45+45	4.8	4.8		
HKE16H-S-DC9V-2A-L2	9	101.3+101.3	7.2	7.2		
HKE16H-S-DC12V-2A-L2	12	180+180	9.6	9.6		
HKE16H-S-DC24V-2A-L2	24	720+720	19.2	19.2		

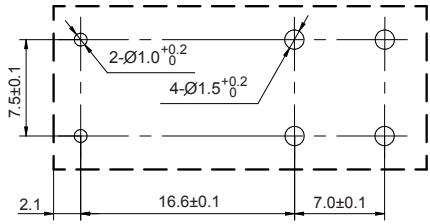
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline

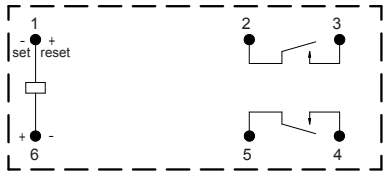




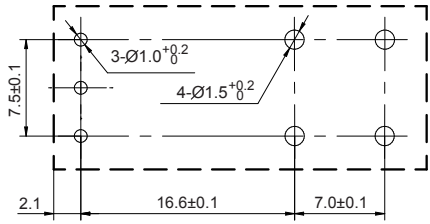
Mounting Hole for L1
(Bottom View)



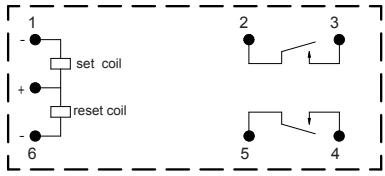
Wiring for L1
(Bottom View)



Mounting Hole for L2
(Bottom View)



Wiring for L2
(Bottom View)



HKE17

Magnetic Latching Relay

Features

- Magnetic Latching Relay
- Outline Dimension：24.0×10.0×18.8mm
- SPST 16A Magetic latching relay
- Max.Surge Current 100A/2ms
- Comply to IEC 60335-1:household and similar electrical appliances-safety
- Impulse voltage is 12000V,Dielectric strength is 5000V

Relay Picture

ORDERING INFORMATION

HKE17 - [S] - [DC12V] - [A] [T] - [L1]

	Enclosure	Coil Voltage	Contact Form	Contact Rating	Coil Type
Model	S - Plastic Sealed Type	DC3V,DC5V,DC6V,DC9V, DC12V,DC24V	A-1 Form A	Blank-Standard 8A T- 16A(surge100A)	L1 - Single coil L2 - Double coil

SPECIFICATION

CONTACT DATA

Contact Form		1 Form A	
Contact Material		$AgSnO_2$	
Contact Rating		Standard：8A 250VAC T ： 16A 277VAC	
Contact Resistance		Max.20mΩ(6VDC 1A)	
Load	Max. Switching Voltage	250VAC	277VAC
	Max. Switching Current	8A	16A
	Max. Switching Power	2000VA	4432VA
	Min. Switching Load	1A 6VDC	
Life	Electrical*1	5×10^4(8A,20ops/min) 2×10^4(16A,frequency 1s:5s) 2.5×10^4 (600W/120VAC/100Asurge current tungsten)	
	Mechanical	1×10^6 (180ops/min)	

COIL DATA

Nominal Coil Power	L1(Single coil): 0.2W(8A),0.6W(16A) L2(Double coil): 0.4W(8A),1.0W(16A)
Max.permitted voltage	110% of nominal voltage

GENERAL DATA

Insulation Resistance		Min.1000MΩ 500VDC
Dielectric Strength	Between open contacts	1,000VAC,50/60Hz,1min
	Between coil and contacts	5,000VAC,50/60Hz,1min
Impulse voltage(Between coil and contacts)		12000V
Operate Time*2		Max.15ms
Reset Time *2		Max.15ms
Operating Temperature		-40℃ to +85℃(8A) -40℃ to +70℃(8A～16A)
Humidity		5～85%RH, +40℃
Shock Resistance	Destruction	1,000m/s^2
	Functional	100m/s^2
Vibration Resistance	Destruction	10～55Hz,1.5mmdouble amplitude
	Functional	10～55Hz,1.5mmdouble amplitude
		Approximately8g

Note:Data shown are of initial value

*1:The frequency for tungsten is 1s:59s
*2:nominal voltage,containing contact bouncing time

COIL DATA

Ambient Temperature: 23℃

Single coil L1

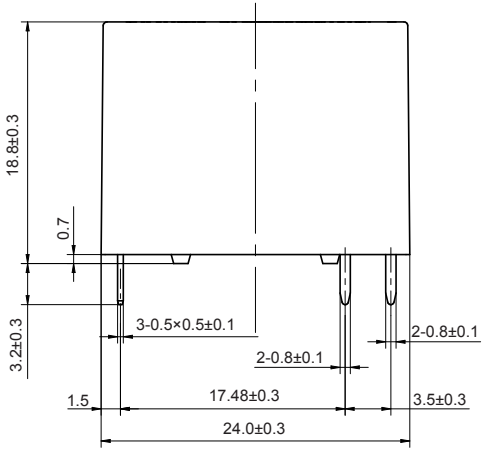
Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%	Operate Voltage ≤VDC	Reset Voltage ≤VDC	Coil Power W
HKE17-S-DC3V-A-L1	3	45	2.4	2.4	0.2
HKE17-S-DC5V-A-L1	5	125	4.0	4.0	
HKE17-S-DC6V-A-L1	6	180	4.8	4.8	
HKE17-S-DC9V-A-L1	9	405	7.2	7.2	
HKE17-S-DC12V-A-L1	12	720	9.6	9.6	
HKE17-S-DC24V-A-L1	24	2880	19.2	19.2	
HKE17-S-DC3V-AT-L1	3	15	2.4	2.4	0.6
HKE17-S-DC5V-AT-L1	5	42	4.0	4.0	
HKE17-S-DC6V-AT-L1	6	60	4.8	4.8	
HKE17-S-DC9V-AT-L1	9	135	7.2	7.2	
HKE17-S-DC12V-AT-L1	12	240	9.6	9.6	
HKE17-S-DC24V-AT-L1	24	960	19.2	19.2	

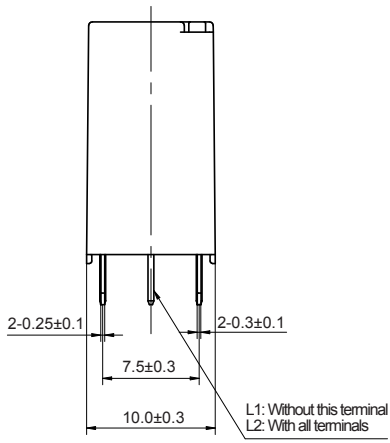
Double coil L2

Model	Nominal Voltage VDC	Coil Resistance Ω+/-10%		Operate Voltage ≤VDC	Reset Voltage ≤VDC	Coil Power W	
		SET	RESET			SET	RESET
HKE17-S-DC3V-A-L2	3	22.5	22.5	2.4	2.4	0.4	0.4
HKE17-S-DC5V-A-L2	5	62.5	62.5	4.0	4.0		
HKE17-S-DC6V-A-L2	6	90	90	4.8	4.8		
HKE17-S-DC9V-A-L2	9	202.5	202.5	7.2	7.2		
HKE17-S-DC12V-A-L2	12	360	360	9.6	9.6		
HKE17-S-DC24V-A-L2	24	1440	1440	19.2	19.2		
HKE17-S-DC3V-AT-L2	3	9	9	2.4	2.4	1.0	1.0
HKE17-S-DC5V-AT-L2	5	25	25	4.0	4.0		
HKE17-S-DC6V-AT-L2	6	36	36	4.8	4.8		
HKE17-S-DC9V-AT-L2	9	81	81	7.2	7.2		
HKE17-S-DC12V-AT-L2	12	144	144	9.6	9.6		
HKE17-S-DC24V-AT-L2	24	576	576	19.2	19.2		

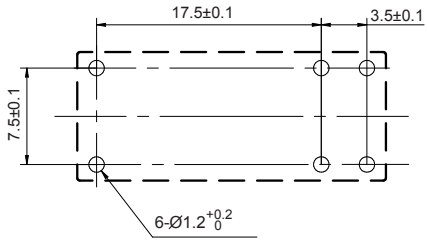
OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

Outline

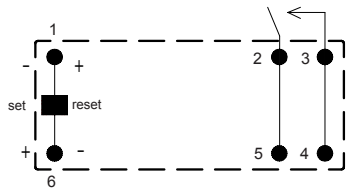




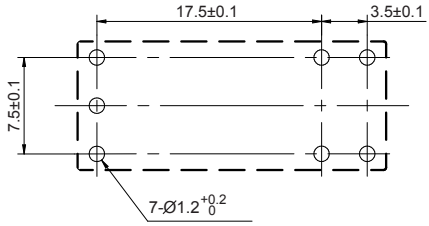
Mounting Hole for L1
(Bottom View)



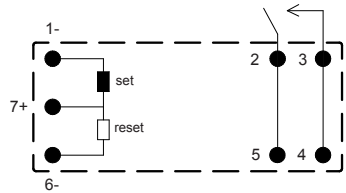
Wiring for L1
(Bottom View)



Mounting Hole for L2
(Bottom View)



Wiring for L2
(Bottom View)



CMAF01

FLASHER

Features

- Special integrate circuit,stable reliable performance
- Use of special high performance contacts, ultra-long electrical endurance
- Surface mounting technology,advanced technology
- Solid base design,stable structure
- Protection IP50
- Steering light of the automobile control, Hazard warning flash lamp control

Flasher Picture

ORDERING INFORMATION

CMAF01 [L] - [DC12V] - [A] - [Z] - [P]

Model	Cover height	Coil Voltage	Contact Form	Mounting	Polarity source
	Blank - High cover L - Low cover	DC12V DC24V	A - NO	Blank - With bracket Z - Without of bracket	Blank - Positive polarity P - Reverse polarity

Remark: CMAF01L is not applicable for 24V

SPECIFICATION

Type		CMAF01	CMAF01L
Output Mode		Single output	Single output
Norminal Voltage		12VDC/24VDC	12VDC
Operating Voltage	12V System	9VDC～16VDC	9VDC～16VDC
	24V System	18VDC～32VDC	-
Norminal Load	Turning Mode	2×21W+5W	2×21W+5W
	Hazard warning mode	2×(2×21W+5W)	2×(2×21W+5W)
	Failure mode	21W+5W	21W+5W
Flash Frequency		(6～110)ops/min	(6～110)ops/min
Lamp Failure Flash Frequency		(140～230)ops/min	(140～230)ops/min
Electrical Endurance	12V	1000h(Turning15s on / 15s off)	1000h(Turning15s on / 15s off)
		360h(hazard warning continuously)	360h(hazard warning continuously)
	24V	400h(Turning15s on / 15s off)	-
		200h(hazard warning continuously)	-
Duty cycle		30%～70%	30%～70%
Ambient temperature		-40℃～85℃	-40℃～85℃
Vibration resistance		10Hz～200Hz,49m/s^2	10Hz～200Hz,49m/s^2
Shock resistance		196m/s^2	196m/s^2
Mechnical	Cover retention	≥160N	≥160N
	Terminal retention	≥100N	≥100N
Weight		Approximately 40g	Approximately 30g

CMAF01

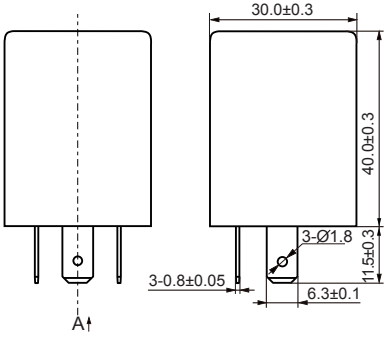
FLASHER

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

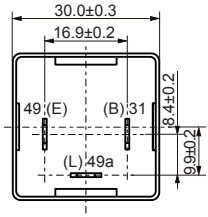
CMAF01

With bracket

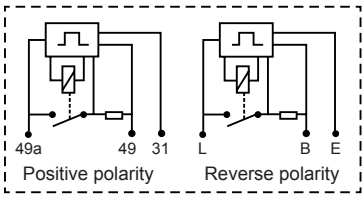
Outline



Mounting Hole Layout
(Bottom View)

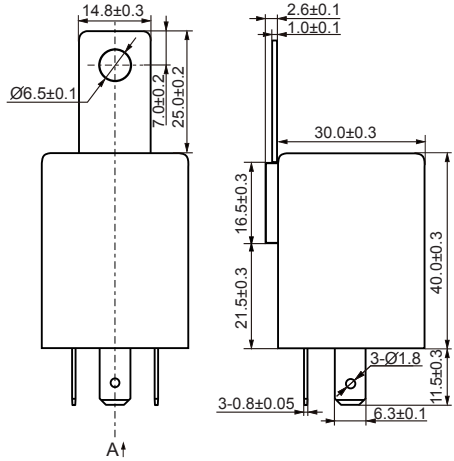


Wiring Diagram
(Bottom View)

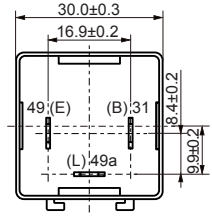


Without of bracke

Outline



Mounting Hole Layout
(Bottom View)



As shown in wiring diagram (refer to bottom view), terminal of 49(B) is connected with positive polarity of 12V or 24V power supply,terminal of 31(E) is connected with reserve polarity of power supply,terminal of 49a(L) is connected with lamp load.The flasher will operate by the frequency of (6~110) ops/min when the lamp load is 2×21W+ 5W or 4×21W+ 2×5W; The flasher will operate by the frequency of (140~230) ops/min when the lamp load is 1×21W+ 5W(one of 21W lamp is failure).

CMAF01

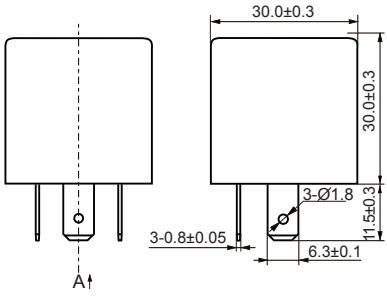
FLASHER

OUTLINE, WIRING DIAGRAM, MOUNTING HOLE LAYOUT (UNIT: mm)

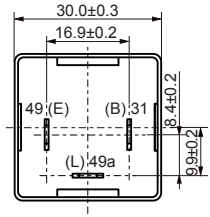
CMAF01L

With bracket

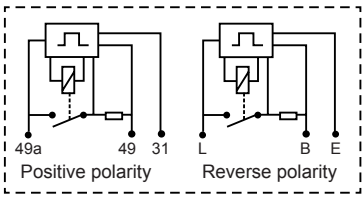
Outline



Mounting Hole Layout
(Bottom View)

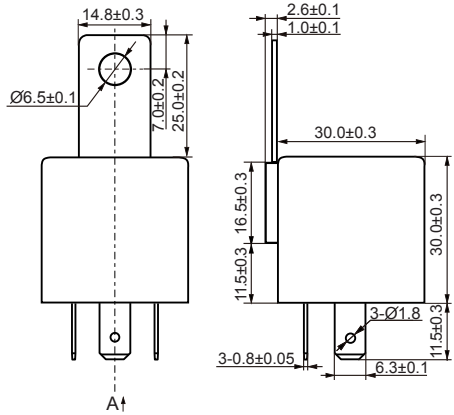


Wiring Diagram
(Bottom View)

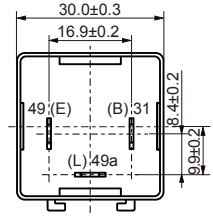


Without of bracke

Outline



Mounting Hole Layout
(Bottom View)



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