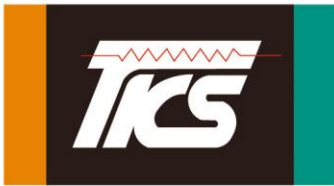


THINKING Catalogue - Aldinet

1. Index.....	1
2. Shortform Catalogue 2023	2

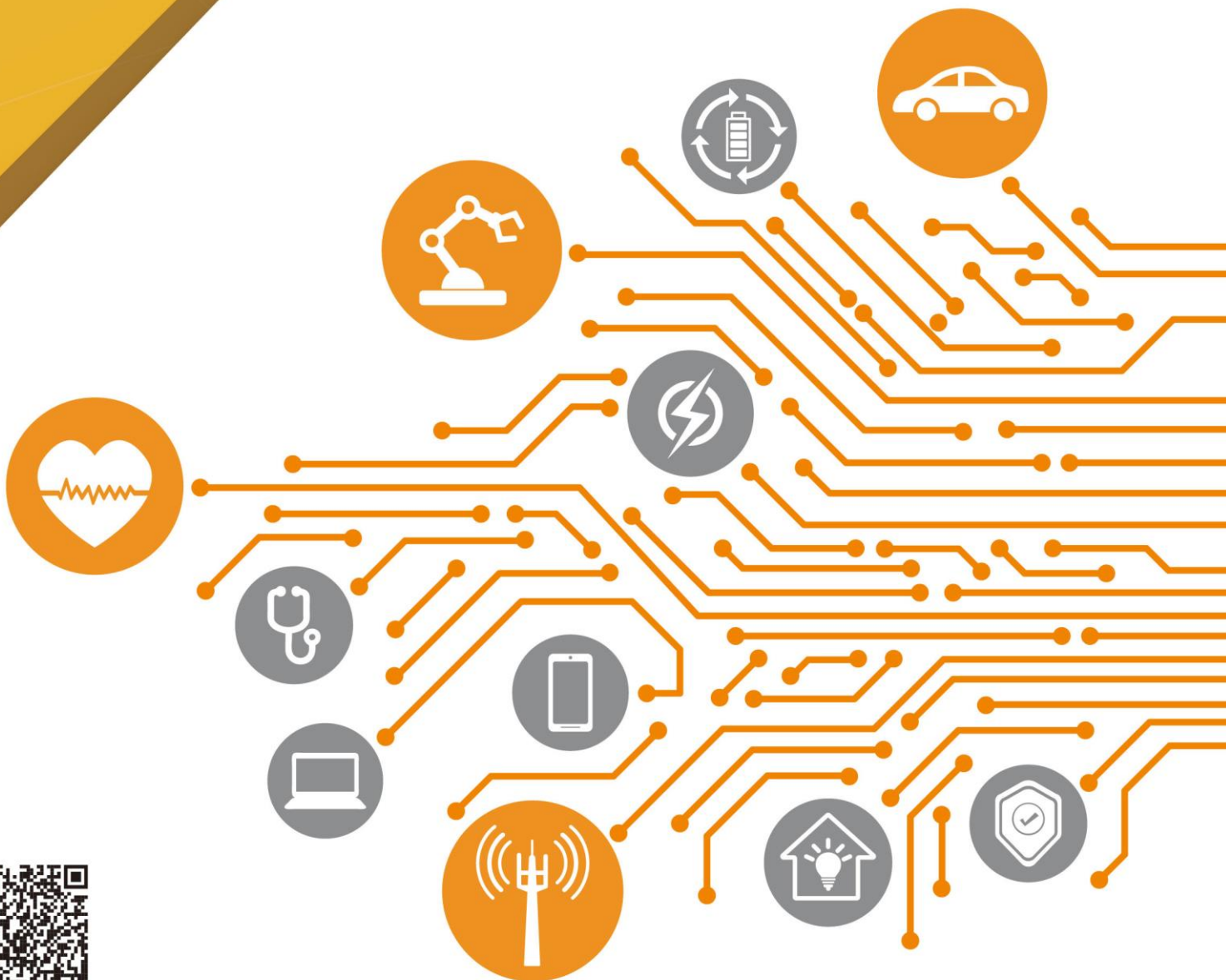


THINKING
Your Best Choice

THINKING

Shortform Catalogue

www.thinking-ec.com



Products for Over-Current Protection

NTC Thermistor

SCK Series (Inrush Current Limiter)



Size (mm)	Φ5~Φ30
R25 (Ω)	0.7~120
Tolerance of R25 (±%)	15, 20, 25
I _{max} (A)	0.3~30

SCH Series (High Power Type Inrush Current Limiter)



Size (mm)	Φ20, Φ25, Φ30
R25 (Ω)	0.7~120
Tolerance of R25 (±%)	15, 20
I _{max} (A)	3~22.5

PTC - Ceramic Positive Temperature Thermistor

PPD/PPL Series for Overload Protection (Disc/Lead Type)



R25 (Ω)	1.1~10K
Rated Voltage (Vac)	24~1000
I _n (mA)	5~870
I _{trip} (mA)	10~1750

TPM-P Series for Overload Protection (SMD Type)



Size	0603, 0805, 1210
R25 (Ω)	15~1500
V _{max} (Vdc)	20~400
I _n (mA)	10~90
I _{trip} (mA)	21~180

Automotive grade product of this series is available

PPL Series for Telecom Application (Lead Type)



R25 (Ω)	7~50
V _{max} (Vac)	250, 300
I _n (mA)	60~180
I _{trip} (mA)	165~540

PPL Series for Telecom Application (Twin SMD Type)



R25 (Ω)	10~50
V _{max} (Vac)	250, 300
I _n (mA)	60~130
I _{trip} (mA)	165~390

PPL Series for Inrush Current Limiting (Dip Type)



R25 (Ω)	10~1000
V _{max} (Vac)	270~500

Automotive grade product of this series is available

PSB Series for Inrush Current Limiting (Case Type)



R25 (Ω)	10~100
V _{max} (Vac)	140~560

PPTC-Polymer PTC Resettable Fuse

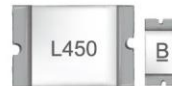
KMC Series (SMD Type)



Size	0603, 0805, 1206, 1812
Max. Voltage (Vdc)	6~60
I _{hold} (A)	0.05~2
I _{trip} (A)	0.15~3.5

Automotive grade product of this series is available

KLM Series (SMD Type)



Size	0603, 0805, 1206, 1210, 1812
Max. Voltage (Vdc)	6~12
I _{hold} (A)	0.5~7.5
I _{trip} (A)	1~15

KRG006/016/030/060/072 Series (Lead Type)



V _{max} (Vdc)	6, 16, 30, 60, 72
I _{hold} (A)	0.1~15
I _{trip} (A)	0.2~25.5

Automotive grade product of this series is available

KRL Series (Lead Type)



V _{max} (Vac)	120, 240
I _{hold} (A)	0.05~3
I _{trip} (A)	0.12~6

KRT Series for Telecom Application (Lead Type)



V _{max} (Vdc)	100, 250
Max. Interrupt Voltage (Vdc)	250, 600
I _{hold} (A)	0.08~0.4
I _{trip} (A)	0.16~1

Products for Specific Applications

PTC - Ceramic Positive Temperature Thermistor

Motor Starter

Application: Air conditioner, freezer, refrigerator, etc

PSA Series (Disc Type)



R25 (Ω)	4.7~68
V _{max} (Vac)	160~430
I _{max} (A)	4~12

Heater

Application: Heater, dryer

PHC/PHR Series (Circle/Rectangular Type)



R25 (Ω)	2~12K
Rated Voltage (Vdc)	12~800
Surface Temperature (°C)	85~280

Automotive grade product of this series is available

Products for Over-Temperature Protection

NTC Thermistor

TTC3/TTC05 Series (Lead Type)



Size (mm)	Φ3, Φ5
R25 (Ω)	0.9~470K
B25/50, B25/85 (K)	2400~5200
Tolerance of R25 & B (±%)	1, 2, 3, 5, 10, 15
Operating Temperature (°C)	-40/-30 ~ +125

Automotive grade product of TTC3 series is available

TTS Series (Epoxy Bead Type)



Size (mm)	Φ1.8, Φ2.6
R25 (Ω)	2K~470K
B25/50, B25/85 (K)	3380~4570
Tolerance of R25 & B (±%)	1, 2, 3, 5
Operating Temperature (°C)	-40 ~ +100

TTF Series (Insulation Film Type)



Size (mm)	3.6 x 10/25/50
R25 (Ω)	5K~100K
B25/85 (K)	3435~4080
Tolerance of R25 & B (±%)	1, 2, 3, 5
Operating Temperature (°C)	-40 ~ +100

DHT Series (Glass Axial Type)



Size (mm)	Φ2 x 4
R25 (Ω)	5K~200K
B25/50, B25/85 (K)	3435~4350
Tolerance of R25 & B (±%)	1, 2, 3, 5, 10
Operating Temperature (°C)	-40 ~ +200

TGM Series (Glass Encapsulated Type)



Size (mm)	Φ2.5
R25, R100, R200 (Ω)	550~100K
B0/100, B25/85, B100/200(K)	3970~4300
Tolerance of R & B (±%)	1.5, 2, 3, 5
Operating Temperature (°C)	-40 ~ +250

INT Series (High Precision Type)



Size (mm)	Φ2.4
R25 (Ω)	1K~30K
Accuracy (0~70°C)	±0.1, ±0.2, ±0.5
Operating Temperature (°C)	-40 ~ +100

TSM Series (SMD Type) / TSM-H Series (High Temperature SMD Type)



Size	TSM Series: 0201, 0402, 0603, 0805 TSM-H Series: 0402, 0603, 0805
R25 (Ω)	1K~470K
B25/50, B25/85 (K)	3380~4750
Tolerance of R25 & B (±%)	0.5, 0.75, 1, 2, 3, 5, 10
Operating Temperature (°C)	TSM Series: -40~ +125 TSM-H Series: -40~ +150

Automotive grade product of this series is available

PTC - Ceramic Positive Temperature Thermistor

TPM-S Series (SMD Type)



Size (mm)	0402, 0603, 0805
R25 (Ω)	1~680
Max. Voltage (Vdc)	24, 32
Sensing Temperature (°C)	+65 ~ +135

Automotive grade product of this series is available

PTL/PTM Series (Leaded/Metal Terminal Type)



Max. R25 (Ω)	100, 330
Max. Voltage (Vdc)	16, 30
Sensing Temperature (°C)	+55 ~ +140

NTC Thermistor Sensor

Customizable cable lengths, R/T characteristics, and connectors are available



Automotive grade products are available

NTSE Series (Epoxy Coating Type)



Feature	1. Small size 2. Short response time 3. Good quality at fair price
Recommended Application	Battery, notebook computer, fan

NTSA Series (Screw-On Type)



Feature	Fast and simple screw-on installation
Recommended Application	Power, UPS

NTSF Series (Metal Case Type)



Feature	1. NTC thermistor potted into metal case 2. Suitable for corrosive environments (suds, water) 3. Fast heat transfer
Recommended Application	Household appliances, oven, cooking table, washing machine, microwave oven, etc

NTSG Series (Plastic Case Type)



Feature	1. NTC thermistor molded in plastic case 2. Highly resistant to water / moisture 3. Highly resistant to high withstand voltage
Recommended Application	Air conditioner, freezer, dishwasher

NTSH Series (Multiple-Sensor Structure)



Feature	Two or more NTC thermistor sensors assembled with connector
---------	---

NTSB Series (Customizable Structure)



Feature	Customizable structure
---------	------------------------

Products for Over-Voltage Protection

Varistor - Zinc Oxide Varistor

TVM-B Series (SMD Type)



Size	0402, 0603, 0805, 1206, 1210, 1812, 2220, 3025
Varistor Voltage (V)	8~100
Vac (V)	4~60
Vdc (V)	5.5~85
Imax (@8/20us) (A)	10~1.2K



Automotive grade product of this series is available

TVB Series (Plastic Encapsulated Type)



Size	3225, 4032, 5548, 6255
Varistor Voltage (V)	18~750
Vac (V)	11~465
Vdc (V)	14~615
Imax (@8/20us) (A)	150~4.5K

TVR Series (Lead Wire Type)



Size (mm)	Φ5~Φ20
Varistor Voltage (V)	18~1800
Vac (V)	11~1000
Vdc (V)	14~1465
Imax (@8/20us) (A)	100~6.5K

TVR-U Series (Ultra High Surge Series of Lead Wire Type)



Size (mm)	Φ10, Φ14
Varistor Voltage (V)	240~1100
Vac (V)	150~680
Vdc (V)	200~895
Imax (@8/20us) (A)	6K, 10K

TVR-D Series (High Surge Series of Lead Wire Type)



Size (mm)	Φ7~Φ20
Varistor Voltage (V)	180~1100
Vac (V)	115~680
Vdc (V)	150~895
Imax (@8/20us) (A)	1.8K~13K

TVR-V Series (Medium Surge Series of Lead Wire Type)



Size (mm)	Φ10, Φ14
Varistor Voltage (V)	200~1100
Vac (V)	130~680
Vdc (V)	170~895
Imax (@8/20us) (A)	3.5K, 6K

TVR-M Series (High Temperature Series of Lead Wire Type)



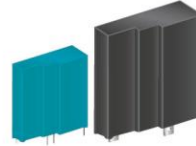
Size (mm)	Φ5~Φ20
Varistor Voltage (V)	200~750
Vac (V)	130~465
Vdc (V)	170~615
Imax (@8/20us) (A)	0.4K~10K



Automotive grade product of this series is available

Varistor - Zinc Oxide Varistor

TVT Series (Thermally Protected Varistor)



Size (mm)	25x25, 34x34
Varistor Voltage (V)	27~1800
Surge Operating Duty Test (@8/20us) (In) (A)	5K, 10K, 15K, 20K
Imax (@8/20us) (A)	10K, 20K, 25K, 40K

TVT-AK&BK Series (High Temperature Thermally Protected Varistor)



Size (mm)	Φ14, Φ20, Φ25
Varistor Voltage (V)	82~1800
Vac (V)	50~1000
Vdc (V)	65~1462
Imax (@8/20us) (A)	5K~20K

TVA-G Series (Lead Wire Type)



Size (mm)	Φ25, Φ32, Φ40
Varistor Voltage (V)	200~1800
Vac (V)	130~1000
Vdc (V)	170~1465
Imax (@8/20us) (A)	25K~50K

TVA-Q Series (Terminal Type)



Size (mm)	Φ25~Φ60, 34x34
Varistor Voltage (V)	200~1800
Vac (V)	130~1000
Vdc (V)	170~1465
Imax (@8/20us) (A)	25K~80K

TVA-T Series (Terminal Type with Parallel Connection)



Size (mm)	34x34
Varistor Voltage (V)	200~1200
Vac (V)	130~750
Vdc (V)	170~980
Imax (@8/20us) (A)	80K

TVA-B Series (Case Type)



Size (mm)	Φ25, Φ32, Φ34
Varistor Voltage (V)	200~1800
Vac (V)	130~1000
Vdc (V)	170~1465
Imax (@8/20us) (A)	25K~50K

TVA22 Series (Strap Type)



Size (mm)	22x25
Varistor Voltage (V)	82~1200
Vac (V)	50~750
Vdc (V)	65~980
Imax (@8/20us) (A)	25K

Products for Over-Voltage Protection

TVS Diode

SMF Series (SMD Type)



Package	SOD-123
Peak Pulse Power Dissipation (W)	200
Reverse Standoff Voltage (V)	5~170

SMAF Series (SMD Low Profile Type)



Package	SMA-FL
Peak Pulse Power Dissipation (W)	400
Reverse Standoff Voltage (V)	8.5~170

SMAJ/P4SMA Series (SMD Type)



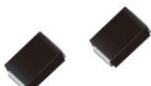
Package	DO-214AC
Peak Pulse Power Dissipation (W)	400
Reverse Standoff Voltage (V)	5~513

SMBJ/P6SMB Series (SMD Type)



Package	DO-214AA
Peak Pulse Power Dissipation (W)	600
Reverse Standoff Voltage (V)	5~513

SMCJ/1.5SMC/SMDJ/5.0SMDJ Series (SMD Type)



Package	DO-214AB
Peak Pulse Power Dissipation (W)	1500, 3000, 5000
Reverse Standoff Voltage (V)	5~513

P4KE Series (Axial Leaded Type)



Package	DO-41
Peak Pulse Power Dissipation (W)	400
Reverse Standoff Voltage (V)	5.8~376

P6KE Series (Axial Leaded Type)



Package	DO-15
Peak Pulse Power Dissipation (W)	600
Reverse Standoff Voltage (V)	5.8~376

1.5KE Series (Axial Leaded Type)



Package	DO-27
Peak Pulse Power Dissipation (W)	1500
Reverse Standoff Voltage (V)	5.8~408

TVS Diode

3KP/5KP/15KP Series (Axial Leaded Type)



Package	P600
Peak Pulse Power Dissipation (W)	3000, 5000, 15000
Reverse Standoff Voltage (V)	5~440

SM8S Series (SMD Type)



Package	DO-218AB
Peak Pulse Power Dissipation (W)	6600
Reverse Standoff Voltage (V)	10~43



SM8S series is automotive grade product

Spark Gap Protector

SPGA Series (Axial Lead Type)



Size (mm)	Φ2.6x6.5
DC Spark-over Voltage (V)	160~600
Insulation Resistance (IR) (MΩ)	100
Insulation Resistance (DC) (V)	50~250

SPCC Series (Axial Leadwire Type)



Size (mm)	Φ2.6x4.3
DC Spark-over Voltage (V)	140~600
Insulation Resistance (IR) (MΩ)	100
Insulation Resistance (DC) (V)	50~250

SPCC Series (No Lead Type)



Size (mm)	Φ2.6x5
DC Spark-over Voltage (V)	140~200
Insulation Resistance (IR) (MΩ)	100
Insulation Resistance (DC) (V)	50~100

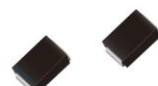
Thyristor Surge Suppressor

TSSxxxxTA Series (SMD Type)



Package	DO-214AC
Peak Pulse Current (A)	75
Median Voltage (V)	008~230

TSSxxxxSB/TSSxxxxSC Series (SMD Type)



Package	DO-214AA
Peak Pulse Current (A)	75, 100
Median Voltage (V)	030~350

Products for Over-Voltage Protection

Gas Discharge Tube

GS2/GS22Y Series (SMD Type)



Size (mm)	3.2x1.6x1.6
DC Spark-Over Voltage (V)	150~600
Impulse Discharge Current (8/20us@10times) (A)	0.5K

GF32R/GF32Y Series (SMD Type)



Size (mm)	4.5x3.2x2.7
DC Spark-Over Voltage (V)	75~600
Impulse Discharge Current (8/20us@10times) (A)	2K, 3K

GF4/GF6 Series (SMD 2-Electrode Type)



Size (mm)	Φ3.5x4, Φ4.2x4, Φ6.2x4.2
DC Spark-Over Voltage (V)	75~1200
Impulse Discharge Current (8/20us@10times) (A)	3K, 5K

GD52Y-M Series (2-Electrode Type)



Size (mm)	Φ5.4x5.4x4
DC Spark-Over Voltage (V)	90~600
Impulse Discharge Current (8/20us@10times) (A)	2.5K

GD52Y-C Series (SMD 2-Electrode Square Type)



Size (mm)	Φ5x5x4.2
DC Spark-Over Voltage (V)	90~1000
Impulse Discharge Current (8/20us@10times) (A)	2.5K, 5K

GPF3Y-C Series (SMD 3-Electrode Square Type)



Size (mm)	Φ5x5x7.6
DC Spark-Over Voltage (V)	90~600
Impulse Discharge Current (8/20us@10times) (A)	10K

GQF/GPF3Y-M Series (SMD 3-Electrode Type)



Size (mm)	Φ5x7.2, Φ5x7.6
DC Spark-Over Voltage (V)	75~1100
Impulse Discharge Current (8/20us@10times) (A)	5K, 10K

GC/GD Series (2-Electrode Type)



Size (mm)	Φ5.5x6, Φ8x6, Φ8x8, Φ8x10
DC Spark-Over Voltage (V)	70~6000
Impulse Discharge Current (8/20us@10times) (A)	1.5K~20K

Gas Discharge Tube

GRC Series (High Voltage and Surge Series of 2-Electrode Type)



Size (mm)	Φ8x6, Φ8x7.9
DC Spark-Over Voltage (V)	230~6500
Impulse Discharge Current (8/20us@10times) (A)	5K

GB/GC Series (3-Electrode Type)



Size (mm)	Φ6x8, Φ8x10
DC Spark-Over Voltage (V)	75~600
Impulse Discharge Current (8/20us@10times) (A)	5K, 10K, 20K

G12D8A Series (2-Electrode Type)



Size (mm)	Φ11.8x8
DC Spark-Over Voltage (V)	230~800
Impulse Discharge Current (8/20us@10times) (A)	20K

G12D12 Series (2-Electrode Type)



Size (mm)	Φ11.8x12
DC Spark-Over Voltage (V)	230~800
Impulse Discharge Current (8/20us@10times) (A)	30K

G12D17 Series (2-Electrode Type)



Size (mm)	Φ11.8x17
DC Spark-Over Voltage (V)	230~2200
Impulse Discharge Current (8/20us@10times) (A)	20K, 40K

G12D18 Series (2-Electrode Type)



Size (mm)	Φ11.8x18
DC Spark-Over Voltage (V)	230~800
Impulse Discharge Current (8/20us@10times) (A)	40K

G16D5A Series (2-Electrode Type)



Size (mm)	Φ15.5x5
DC Spark-Over Voltage (V)	500~800
Impulse Discharge Current (8/20us@10times) (A)	20K

G20D5F Series (2-Electrode Type)



Size (mm)	Φ20x5.5
DC Spark-Over Voltage (V)	150~1000
Impulse Discharge Current (8/20us@10times) (A)	40K

Products for Over-Voltage Protection

Gas Discharge Tube

G25D10/25D10-H Series (2-Electrode Type)



Size (mm)	Φ25x10
DC Spark-Over Voltage (V)	500~800
Impulse Discharge Current (8/20us@10times) (A)	G25D10 Series: 60K G25D10-H Series: 80K

G25D21 Series (2-Electrode Type)



Size (mm)	Φ25x21
DC Spark-Over Voltage (V)	500~800
Impulse Discharge Current (8/20us@10times) (A)	80K

G30D12 Series (2-Electrode Type)



Size (mm)	Φ30x12
DC Spark-Over Voltage (V)	500~800
Impulse Discharge Current (8/20us@10times) (A)	100K

ESD Protector

TVM-G Series (SMD Type)



Size	0201, 0402, 0603, 0805
Vdc (V)	5.5~42
Capacitance (PF)	3~990

LCP Series (SMD Type)



Size	0402, 0603
Vdc (V)	3.3~30
Max. Capacitance (PF)	0.2

TEExSD32 Series (SMD Type)



Package	SOD-323
Vdc (V)	3.3~12
Capacitance (PF)	1~160

TEExSD52 Series (SMD Type)



Package	SOD-523
Vdc (V)	3.3~12
Capacitance (PF)	0.5~80

ESD Protector

TEExSD82 Series (SMD Type)



Package	SOD-882
Vdc (V)	5
Capacitance (PF)	0.65~15

TEExSD92 Series (SMD Type)



Package	SOD-923
Vdc (V)	3.3, 5
Capacitance (PF)	15

TEExST23 Series (SMD Type)



Package	SOT-23
Vdc (V)	3.3~24
Capacitance (PF)	0.7~200

TEExST26 Series (SMD Type)



Package	SOT-23-6L
Vdc (V)	5
Capacitance (PF)	0.2~3.5

TEExST14 Series (SMD Type)



Package	SOT-143
Vdc (V)	5
Capacitance (PF)	0.3~1.2

TEExD062 Series (SMD Type)



Package	DFN0603
Vdc (V)	3.3, 5
Capacitance (PF)	0.2~17

TEExD102 Series (SMD Type)



Package	DFN1006-2L
Vdc (V)	3.3-12
Capacitance (PF)	0.4~30

TEExD25A Series (SMD Type)



Package	DFN2510-10L
Vdc (V)	5
Capacitance (PF)	0.25~0.8

HEADQUARTER

12F, No.93, Dashun 1st Rd., Zuoying Dist., Kaohsiung City, Taiwan 81357

Tel: 886-7-5577660

E-mail: thinking@thinking.com.tw

USA

Unit 109D, 1300 E Main Street, Alhambra, CA 91801, USA

Contact Person: Allen Wu

E-mail: sales@thinking-ec.com

TAIPEI, TAIWAN

3F, No.25, Lane 70, Wugong 2nd Rd., Xinzhuang Dist., New Taipei City, Taiwan 24888

Tel: 886-2-22990652

MALAYSIA

Contact Person: HS Chong

Tel: +6016-4323249 / E-mail: hschong@thinking.com.tw

SINGAPORE

Contact Person: Allen Lee

Tel: +65-98307549 / E-mail: Allenlee@thinking.com.tw

JIANGSU, CHINA

No.6, Longmen Rd., Wujin High & New-Tech Industrial Development Zone, Changzhou, Jiangsu, China 213161

Tel: 86-519-86578999

GUANGDONG, CHINA

No.45, East Rd., Sha-Tao Dist., Chang-An Town, Dongguan City, Guangdong, China 523863

Tel: 86-769-85542016

QINGDAO, CHINA

No.696, Hefei Rd., Shibei Dist., Qingdao City, China 266035

Tel: 86-138-08993369

BEIJING, CHINA

Room 2707, Building 1, No. 88 Jian Guo Road, Chaoyang Dist., Beijing City, China 100025

Tel: 86-010-85898940

HUBEI, CHINA

California Sunshine Community, Guanggu Rd., Donghu New Technical Development Zone, Wuhan City, Hubei, China

Tel: 86-134-76148723

Product Webpage of THINKING Website**Products for Over-Current Protection**NTC Thermistor-
SCK & SCH Series

PTC Thermistor

PPTC-Polymer PTC
Resettable Fuse

NTC Thermistor



PTC Thermistor

NTC Thermistor
Sensor**Products for Over-Voltage Protection**Varistor-Zinc
Oxide Varistor

ESD Protector

Gas Discharge
Tube

TVS Diode

Spark Gap
ProtectorThyristor Surge
Protector