



Aluminium Electrolytic Capacitors



Electrolytic Capacitors and the increase in IGBT Voltage Ratings?

Itelcond developed new screw-terminal and snap-in capacitor series.

The new AM/AN series is engineered specifically for high-voltage applications.

These components are custom-designed for these advanced system needs.

Many years of R&D have led to a new technological breakthrough for high-voltage applications.

- ✓ Benchmark electrical performance with low ESR and high ripple current
- ✓ Capability 100 V higher voltage rating with the same footprint (450 V → 550 V)
- ✓ Extended operational lifetime



Solar & Wind Power Inverters

Optimized DC-Link capacitor banks for high-voltage DC buses. The 550 V rating reduces the number of series-connected capacitors, delivering lower total ESR, simplified system design, and lower assembly costs.



UPS Systems & Power Line Filters

Ensures 24/7 operational continuity and protection against critical grid voltage fluctuations in industrial facilities and data centers, thanks to the combination of low ESR and high surge voltage capability.



Industrial Energy Storage Systems

Ideal for pairing with next-generation IGBT modules in BESS applications. The AN series provides up to 15,000 hours of continuous operation, minimizing unscheduled maintenance and maximizing system availability.



EV Fast Charging Infrastructure

High-power EV charging stations require compact capacitors capable of handling very high ripple currents and severe thermal transients. The AM series, rated for 105°C operation, is specifically designed to meet these demanding requirements.



High Ripple Current – 105°C – High voltage – Low ESR – Long Life

AM – 5.000 hrs – 105°C

Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C / 85% Relative Humidity
Voltage	[V]	V_R	200 - 450V
Capacitance	[μF]	C	C_{10} rated value at $t=0$ hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{10} rated value at $t=0$ hrs
Leakage Current	[mA]	$I_f=0,004 \cdot C \cdot V$	I_{f10} rated value at $t=0$ hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t=K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{10} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{10}$	
		$I_f \leq I_{f10}$	
Surge Voltage	[V]	$V_{surge}=1,05 \cdot V_R$	

Ripple Current Coefficient

Hz	50	100	120	200	300	400	500	1000
Kf	0.78	1.00	1.02	1.06	1.08	1.09	1.32	1.37

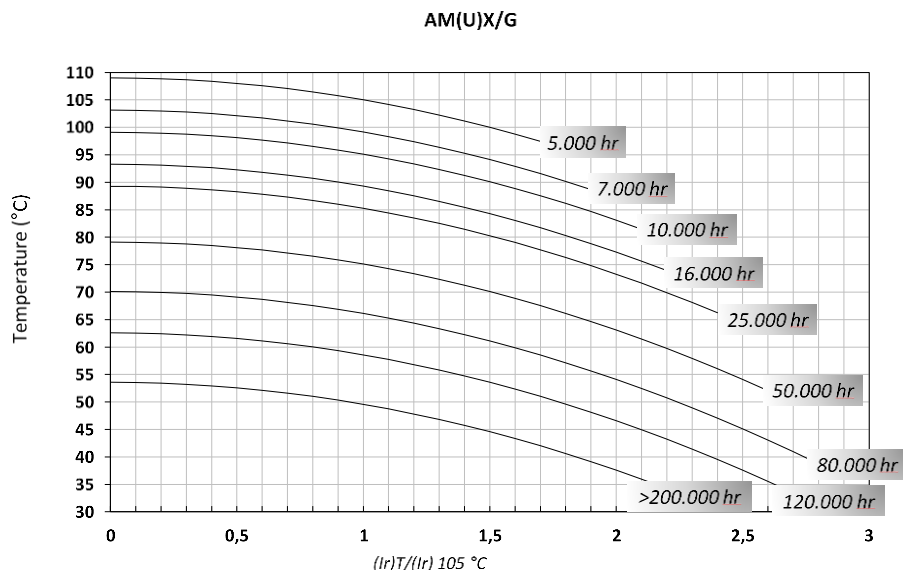
°C	40	55	65	75	85	95	105
Kt	2.50	2.40	2.20	2.00	1.80	1.30	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AMUX472M450DF1

AM	(U)	X	472	M	450	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



High Ripple Current – 105°C – High voltage – Low ESR – Long Life

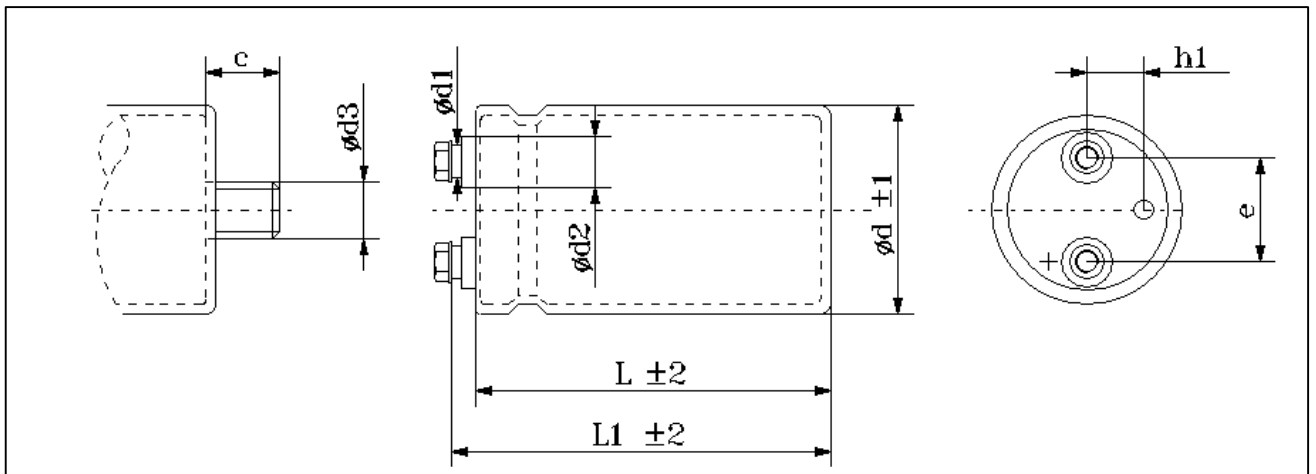
AM – 5.000 hrs – 105°C

	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[mΩ]@10KHz	[A]@55°C	[A]@105°C	(U) for mounting stud
500	1000	BB	51	83	0,10	159	96	119	10,1	4,0	AM(U)X102M500BB1
	1500	BC	51	105	0,10	106	64	80	13,7	5,5	AM(U)X152M500BC1
	2200	CC	63	105	0,10	72	43	54	18,6	7,4	AM(U)X222M500CC1
	3300	DC	76	105	0,10	48	29	36	25,4	10,2	AM(U)X332M500DC1
	4700	DF	76	145	0,10	34	20	25	34,8	13,9	AM(U)X472M500DF1
	5600	EF	90	145	0,10	28	17	21	41,8	16,7	AM(U)X562M500EF1
	6800	EF	90	145	0,10	23	14	18	46,1	18,4	AM(U)X682M500EF1
	6800	DJ	76	222	0,10	23	14	18	50,8	20,3	AM(U)X682M500DJ1
	8200	EJ	90	222	0,10	19	12	15	61,1	24,4	AM(U)X822M500EJ1
	10000	EJ	90	222	0,10	16	10	12	67,5	27,0	AM(U)X102M500EJ1
	12000	EL	90	240	0,10	13	8	10	76,6	30,6	AM(U)X122M500EL1
550	820	BB	51	83	0,10	194	136	146	8,4	3,4	AM(U)X822M550BB1
	1000	BC	51	105	0,10	159	111	119	10,3	4,1	AM(U)X102M550BC1
	1200	BC	51	105	0,10	133	93	100	11,3	4,5	AM(U)X122M550BC1
	1500	CC	63	105	0,10	106	74	80	14,2	5,7	AM(U)X152M550CC1
	2200	CC	63	105	0,10	72	51	54	17,2	6,9	AM(U)X222M550CC1
	3300	DC	76	105	0,10	48	34	36	23,5	9,4	AM(U)X332M550DC1
	3900	DF	76	145	0,10	41	29	31	29,4	11,7	AM(U)X392M550DF1
	4700	DF	76	145	0,10	34	24	25	32,2	12,9	AM(U)X472M550DF1
	5600	EF	90	145	0,10	28	20	21	38,7	15,5	AM(U)X562M550EF1
	6800	DJ	76	222	0,10	23	16	18	47,0	18,8	AM(U)X682M550DJ1
	8200	EJ	90	222	0,10	19	14	15	56,6	22,6	AM(U)X822M550EJ1
	10000	EL	90	240	0,10	16	11	12	64,8	25,9	AM(U)X102M550EL1

High Ripple Current – 105°C – High voltage – Low ESR – Long Life

AM – 5.000 hrs – 105°C

Technical Drawing



High Ripple Current – 105°C – High voltage – Low ESR – Long Life **AMC/AMS – 5.000 hrs – 105°C**

Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	5.000	@rated voltage, temperature and ripple current
Climatic category		40/105/56	-40°C / +105°C / 85% Relative Humidity
Voltage	[V]	V _R	200-450
Capacitance	[µF]	C	C _{t0} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR _{t0} rated value at t=0hrs
Leakage Current	[mA]	I _l =0,004*C*V	I _{lt0} rated value at t=0hrs
I Ripple	[A]	I _R	Ripple current @ rated parameters
		I _t =K _f *K _t *I _R	I _t ripple current at a given T
		K _f	Frequency Correlation Factor See table below
		K _t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{t0} \leq 30\%$	
		$ESR \leq 3 * ESR_{t0}$	
		$I_l \leq I_{lt0}$	
Surge Voltage	[V]	V _{surge} =1,05*V _R	

Ripple Current Coefficient

	Hz	50	100	300	400	500	>1000
Kf	V>160	0.88	1.00	1.20	1.25	1.35	1.40

°C	50	65	75	85	95	105
Kt	2.40	2.20	2.10	1.80	1.30	1.00

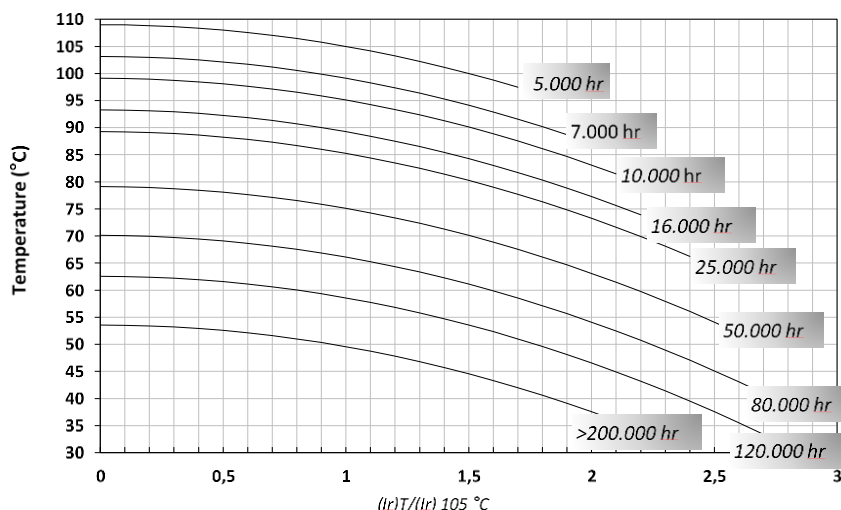
Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – AMC471M450NC1

AMC	471	M	450	NC	1
Series	C with multiplying factor:	Tolerance	V _R	Size	1=sleeve 0=no sleeve
	1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current

AMC - AMS

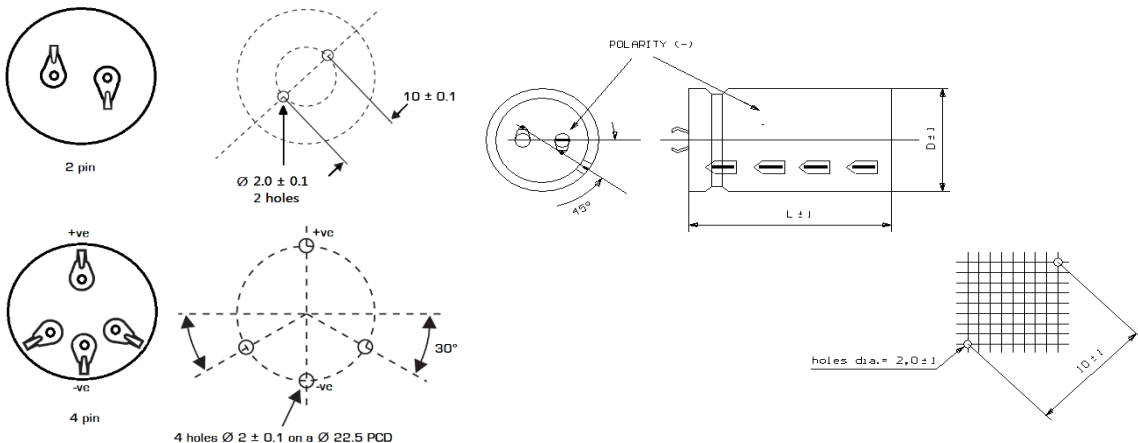


High Ripple Current – 105°C – High voltage – Low ESR – Long Life **AMC/AMS – 5.000 hrs – 105°C**

	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[μF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz	[mΩ]@100Hz	[mΩ]@10KHz	[A]@85°C	[A]@105°C	*= C, 2 Pins S, 4 Pins
500	150	MB	30	40	0,10	1062	552	796	2,3	0,9	AM*151M500MB1
	220	MC	30	50	0,10	724	376	543	3,0	1,2	AM*221M500MC1
	220	NB	35	40	0,10	724	376	543	3,0	1,2	AM*221M500NB1
	270	NC	35	50	0,10	590	307	442	3,6	1,5	AM*271M500NC1
	330	NC	35	50	0,10	483	251	362	4,0	1,6	AM*331M500NC1
	390	NC	35	50	0,10	408	212	306	4,4	1,8	AM*391M500NC1
	470	NN	35	60	0,10	339	176	254	5,2	2,1	AM*471M500NN1
	470	PC	40	50	0,10	339	176	254	5,2	2,1	AM*471M500PC1
	560	PC	40	50	0,10	284	148	213	5,7	2,3	AM*561M500PC1
	680	PN	40	60	0,10	234	122	176	6,7	2,7	AM*681M500PN1
	680	QC	45	50	0,10	234	122	176	6,7	2,7	AM*681M500QC1
	820	PG	40	100	0,10	194	101	146	9,3	3,7	AM*821M500PG1
	1000	QG	45	100	0,10	159	83	119	10,9	4,4	AM*102M500QG1
550	150	MB	30	40	0,10	1062	658	796	2,1	0,8	AM*151M550MB1
	220	NB	35	40	0,10	724	449	543	2,7	1,1	AM*221M550NB1
	270	NC	35	50	0,10	590	366	442	3,3	1,3	AM*271M550NC1
	330	NC	35	50	0,10	483	299	362	3,7	1,5	AM*331M550NC1
	390	NN	35	60	0,10	408	253	306	4,3	1,7	AM*391M550NN1
	470	NN	35	60	0,10	339	210	254	4,8	1,9	AM*471M550NN1
	560	PN	40	60	0,10	284	176	213	5,6	2,2	AM*561M550PN1
	680	PG	40	100	0,10	234	145	176	7,7	3,1	AM*681M550PG1
	820	QG	45	100	0,10	194	120	146	9,1	3,6	AM*821M550PG1
	1000	RG	50	100	0,10	159	99	119	10,6	4,2	AM*102M550RG1

High Ripple Current – 105°C – High voltage – Low ESR – Long Life **AMC/AMS – 5.000 hrs – 105°C**

Technical Drawing



High Ripple Current – 85°C – High voltage – Long Life

AN – 15.000 hrs – 85°C

Parameters	U.M.	Symbol/Value	Notes
Expected lifetime	[hrs]	15.000	@rated voltage, temperature and ripple current
Climatic category		40/85/56	-40°C / +85°C / 56 days-40°C-95%HR
Voltage	[V]	V_R	500 - 550V
Capacitance	[μF]	C	C_{t0} rated value at t=0hrs
Capacitance tolerance	%	M = 20 %	Other capacitance on request as indicated in the data book
Series resistance	[mΩ]	ESR	ESR_{t0} rated value at t=0hrs
Leakage Current	[mA]	$I_f=0,004 \cdot C \cdot V$	I_{f0} rated value at t=0hrs
I Ripple	[A]	I_R	Ripple current @ rated parameters
		$I_t=K_f \cdot K_t \cdot I_R$	I_t ripple current at a given T
		K_f	Frequency Correlation Factor See table below
		K_t	Temperature Correlation Factor See table below
End of Life values		$\Delta C/C_{t0} \leq 30\%$	
		$ESR \leq 3 \cdot ESR_{t0}$	
		$I_f \leq I_{f0}$	
Surge Voltage	[V]	$V_{surge}=1,05 \cdot V_R$	

Ripple Current Coefficient

Hz	50	100	120	200	300	400	500	1000
Kf	0.89	1.00	1.02	1.06	1.08	1.09	1.32	1.37

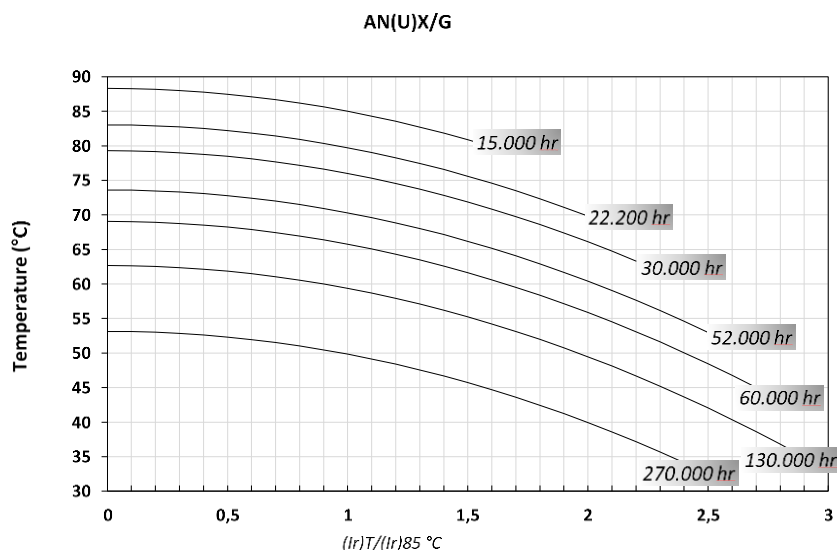
°C	40	55	65	75	85
Kt	1.8	1.65	1.45	1.25	1.00

Note: Superimposed alternating voltage summed to DC voltage must not exceed rated voltage, rated ripple current must not be exceeded and no reverse polarity is allowed

Ordering Code: Example – ANUX472M450DF1

AN	(U)	X	472	M	450	DF	1
Series	U=mounting stud	Terminals	C with multiplying factor:	Tolerance	V_R	Size	1=sleeve 0=no sleeve
	Void=flat bottom		1=x10, 2=x100, 3=x1.000,				

Expected Lifetime Vs Temperature and Ripple Current



High Ripple Current – 85°C – High voltage – Long Life

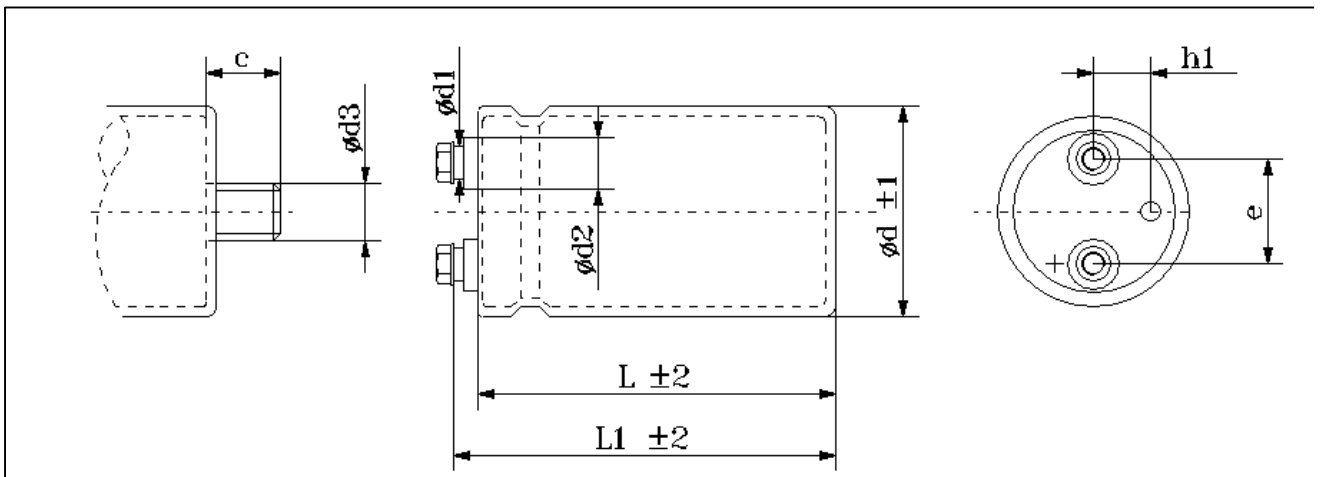
AN – 15.000 hrs – 85°C

	Capacitance	Case	Diam	Height	Tanδ	ESRmax typ		Zmax	Iripple @100Hz		Ordering Code
	[uF]@100Hz		[mm]	[mm]	[%]@100Hz	[mΩ]@100Hz		[mΩ]@10KHz	[A]@55°C	[A]@85°C	(U) for mounting stud
500	2700	CC	63	105	0,10	59	35	44	18,6	11,3	AN(U)X272M500CC1
	3300	DC	76	105	0,10	48	29	36	22,9	13,9	AN(U)X332M500DC1
	3900	DC	76	105	0,10	41	24	31	24,9	15,1	AN(U)X392M500DC1
	4700	DF	76	145	0,10	34	20	25	31,4	19,1	AN(U)X472M500DF1
	5600	DF	76	145	0,10	28	17	21	34,3	20,8	AN(U)X562M500DF1
	6800	DF	76	145	0,10	23	14	18	37,8	22,9	AN(U)X682M500DF1
	6800	DJ	76	222	0,10	23	14	18	45,8	27,8	AN(U)X682M500DJ1
	8200	DJ	76	222	0,10	19	12	15	50,3	30,5	AN(U)X822M500DJ1
	10000	DJ	76	222	0,10	16	10	12	55,6	33,7	AN(U)X102M500DJ1
	12000	EJ	90	222	0,10	13	8	10	66,8	40,5	AN(U)X122M500EJ1
550	1000	BB	51	83	0,10	159	111	119	8,4	5,1	AN(U)X102M550BB1
	1500	BC	51	105	0,10	106	74	80	11,4	6,9	AN(U)X152M550BC1
	2200	CC	63	105	0,10	72	51	54	15,6	9,4	AN(U)X222M550CC1
	3300	DC	76	105	0,10	48	34	36	21,2	12,9	AN(U)X332M550DC1
	4700	DF	76	145	0,10	34	24	25	29,1	17,6	AN(U)X472M550DF1
	5600	EF	90	145	0,10	28	20	21	34,9	21,2	AN(U)X562M550EF1
	6800	EF	90	145	0,10	23	16	18	38,5	23,3	AN(U)X682M550EF1
	6800	DJ	76	222	0,10	23	16	18	42,4	25,7	AN(U)X682M550DJ1
	8200	EJ	90	222	0,10	19	14	15	51,1	31,0	AN(U)X822M550EJ1
	10000	EJ	90	222	0,10	16	11	12	56,4	34,2	AN(U)X102M550EJ1

High Ripple Current – 85°C – High voltage – Low ESR – Long Life

AN – 15.000 hrs – 85°C

Technical Drawing



CONFIDENTIALITY

The information contained in this document, cannot be disclosed partially or completely to third parties without the written consent of Itelcond SRL., please restrict the use of any of this information inside your organization or retained advisors who have been informed of its confidentiality.