

RG SERIES ▪ STANDARD 85°C TYPE

KEY FEATURES



- **ALUMINUM ELECTROLYTIC CAPACITOR** ▪ Screw terminal type
- Useful life: 85°C ▪ 6000 hours
- Wide capacitance range
- All-welded construction ensures highest reliability
- Bottom cooling possible due to the thermal construction



SPECIFICATIONS

Items		Performance Characteristics			
Operating Temperature Range		-40 ~ +85°C		-25 ~ +85°C	
Rated Voltage Range	V _R	160 ~ 450V DC		500 ~ 630V DC	
Surge Voltage	V _S	(V _R ≤ 315V): V _S = 1.15·V _R		(V _R > 315V): V _S = 1.10·V _R	
Capacitance Range	C _R	390 ~ 39000μF		1000 ~ 10000μF	
Cap. Tolerance	ΔC	±20% (120Hz ▪ 20°C)			
Leakage Current (20°C ▪ V _R applied)	I _{LEAK}	≤ 0.018·(C _R ·V _R) ^{0.85} + 4 (μA) or 5mA (whichever is smaller) ▪ After 5 minutes [I _{LEAK} (μA) ; C _R (μF) ; V _R (V)]			
Dissipation Factor % (20°C ▪ 120Hz)	tanδ	V _R (V DC)	160 ~ 450	500 ~ 550	≥ 600
		tanδ	15	20	25
Low Temperature Characteristics at 120Hz	Z ratio max.	V _R (V DC)	160 ~ 450	≥ 500	
		Z-25°C/Z+20°C	4	4	
		Z-40°C/Z+20°C	10	-	

Lifetime Test			
Useful Life 85°C (V _R & I _R applied)	Test	6000 hours	
	ΔC/C _R	≤ ±15% of initial measured value	
	tanδ	≤ 175% of initial specified value	
	I _{Leak}	≤ the initial specified value	
	Deviation Rate at Useful Life: 100 FIT = 0.01%/1000h with 60% confidence level ▪ parts show higher drift as test criteria		
Endurance 85°C (V _R & I _R applied)	Test	2000 hours	
	ΔC/C _R	≤ ±10% of initial measured value	
	tanδ	≤ 130% of initial specified value	
	I _{Leak}	≤ the initial specified value	
Shelf Life 85°C (V _R = 0)	Test	1000 hours	
	ΔC/C _R	≤ ±10% of initial measured value	
	tanδ	≤ 130% of initial specified value	
	I _{Leak}	≤ the initial specified value	
	Before measurement: Restore capacitor to 20°C, apply V _R for 30 min according JIS-C-5101-4		
Vibration Resistance Test	Max. 10g force, f _{RANGE} 10Hz ... 55Hz, amplitude 0.75mm; X/Y/Z-axis each 2h; capacitor rigidly clamped by body to surface ▪ IEC 60068-2-6		

★ Remark: For **Halogen Free** products see chapter **SLEEVE AND PRINTING** selection.

STANDARD RATINGS

□□□ see terminal code at dimensions table

V _R (V)	C _R (μF)	∅ D (mm)	L (mm)	Typ. ESR +20°C • 120Hz (mΩ)	Max. ESR +20°C • 120Hz (mΩ)	I _R - Max. Ripple Current +85°C • 120Hz (mA rms)	CapXon Part Number
160	1000	35	60	120	200	2800	RG102M160P60□□□
	1500	35	60	76	130	3000	RG152M160P60□□□
	2200	35	100	53	90	4000	RG222M160PA00□□□
	3300	35	100	35	60	4700	RG332M160PA00□□□
	3900	51	75	30	51	5300	RG392M160R750□□□
	4700	51	75	25	42	6000	RG472M160R750□□□
	5600	51	96	21	36	7000	RG562M160R960□□□
	6800	51	96	17	29	8500	RG682M160R960□□□
	8200	51	115	14	24	9200	RG822M160RA15□□□
	10000	51	120	12	20	10500	RG103M160RA20□□□
	10000	63.5	96	12	20	10500	RG103M160S960□□□
	12000	51	120	10	17	11500	RG123M160RA20□□□
	12000	63.5	100	10	17	11700	RG123M160SA00□□□
	15000	63.5	120	8	13	14300	RG153M160SA20□□□
	18000	63.5	130	7	11	15600	RG183M160SA30□□□
	22000	76.2	120	5	9	16700	RG223M160TA20□□□
	27000	76.2	130	4	7	20200	RG273M160TA30□□□
	33000	89	130	4	6	23800	RG333M160XA30□□□
39000	89	157	3	5	27900	RG393M160XA57□□□	
200	1000	35	60	120	200	3000	RG102M200P600□□□
	1500	35	80	76	130	3300	RG152M200P800□□□
	2200	35	100	53	90	4200	RG222M200PA00□□□
	2700	35	120	43	74	4700	RG272M200PA20□□□
	3300	35	120	35	60	4800	RG332M200PA20□□□
	3300	51	80	35	60	4900	RG332M200R800□□□
	3900	51	75	30	51	5500	RG392M200R750□□□
	4700	51	96	25	42	6400	RG472M200R960□□□
	5600	51	115	21	36	7600	RG562M200RA15□□□
	6800	51	130	17	29	8800	RG682M200RA30□□□
	8200	63.5	96	14	24	9400	RG822M200S960□□□
	10000	63.5	120	12	20	11200	RG103M200SA20□□□
	10000	63.5	96	12	20	10400	RG103M200S960□□□
	15000	76.2	96	8	13	14400	RG153M200T960□□□
	18000	76.2	130	7	11	16500	RG183M200TA30□□□
	22000	76.2	155	5	9	19600	RG223M200TA55□□□
	22000	89	120	5	9	19200	RG223M200XA20□□□
	27000	89	130	4	7	21500	RG273M200XA30□□□
33000	89	157	4	6	25300	RG333M200XA57□□□	
250	680	35	60	170	290	1800	RG681M250P600□□□
	1000	35	80	120	200	3300	RG102M250P800□□□
	1500	35	80	76	130	3500	RG152M250P800□□□
	1800	35	100	65	110	3500	RG182M250PA00□□□
	2200	35	120	53	90	3800	RG222M250PA20□□□
	2200	51	75	53	90	4000	RG222M250R750□□□

STANDARD RATINGS

□□□ see terminal code at dimensions table

V _R (V)	C _R (μF)	∅ D (mm)	L (mm)	Typ. ESR +20°C • 120Hz (mΩ)	Max. ESR +20°C • 120Hz (mΩ)	I _R • Max. Ripple Current +85°C • 120Hz (mA rms)	CapXon Part Number
250	2700	51	75	43	74	4400	RG272M250R750□□□
	3300	51	96	35	60	5400	RG332M250R960□□□
	3900	51	115	30	51	6300	RG392M250RA15□□□
	4700	51	120	25	42	7000	RG472M250RA20□□□
	4700	63.5	96	25	42	7300	RG472M250S960□□□
	5600	63.5	96	21	36	7800	RG562M250S960□□□
	6800	51	140	17	29	8500	RG682M250RA40□□□
	6800	63.5	115	17	29	9100	RG682M250SA15□□□
	6800	76.2	100	17	29	9500	RG682M250TA00□□□
	8200	63.5	115	14	24	10000	RG822M250SA15□□□
	10000	63.5	130	12	20	11700	RG103M250SA30□□□
	10000	76.2	115	12	20	12200	RG103M250TA15□□□
	12000	76.2	115	10	17	12900	RG123M250TA15□□□
	15000	76.2	130	8	13	15100	RG153M250TA30□□□
	15000	89	120	8	13	15900	RG153M250XA20□□□
	18000	76.2	155	7	11	17700	RG183M250TA55□□□
22000	89	157	5	9	20900	RG223M250XA57□□□	
350	390	35	50	300	510	1700	RG391M350P500□□□
	470	35	80	250	420	2200	RG471M350P800□□□
	560	35	80	210	360	2400	RG561M350P800□□□
	680	35	80	170	290	2600	RG681M350P800□□□
	820	35	100	140	240	3100	RG821M350PA00□□□
	1000	35	100	120	200	3500	RG102M350PA00□□□
	1200	51	75	100	170	3800	RG122M350R750□□□
	1500	51	75	76	130	4300	RG152M350R750□□□
	1800	51	80	65	110	6980	RG182M350R800□□□
	2200	51	96	53	90	8000	RG222M350R960□□□
	2700	51	105	43	74	9100	RG272M350RA05□□□
	2700	63.5	80	43	74	9200	RG272M350S800□□□
	3300	51	115	35	60	10300	RG332M350RA15□□□
	3300	63.5	96	35	60	10900	RG332M350S960□□□
	3900	51	130	30	51	11500	RG392M350RA30□□□
	3900	63.5	100	30	51	11700	RG392M350SA00□□□
	4700	63.5	100	25	42	15100	RG472M350SA00□□□
	5600	63.5	115	21	36	17500	RG562M350SA15□□□
	5600	76.2	96	21	36	18200	RG562M350T960□□□
	6800	63.5	140	17	29	20500	RG682M350SA40□□□
	6800	76.2	100	17	29	20100	RG682M350TA00□□□
	8200	76.2	115	14	24	23400	RG822M350TA15□□□
	10000	76.2	135	12	20	27700	RG103M350TA35□□□
	10000	89	120	12	20	28700	RG103M350XA20□□□
12000	76.2	168	10	17	30100	RG123M350TA68□□□	
12000	89	125	10	17	28900	RG123M350XA25□□□	
15000	89	150	8	13	34900	RG153M350XA50□□□	

STANDARD RATINGS

□□□ see terminal code at dimensions table

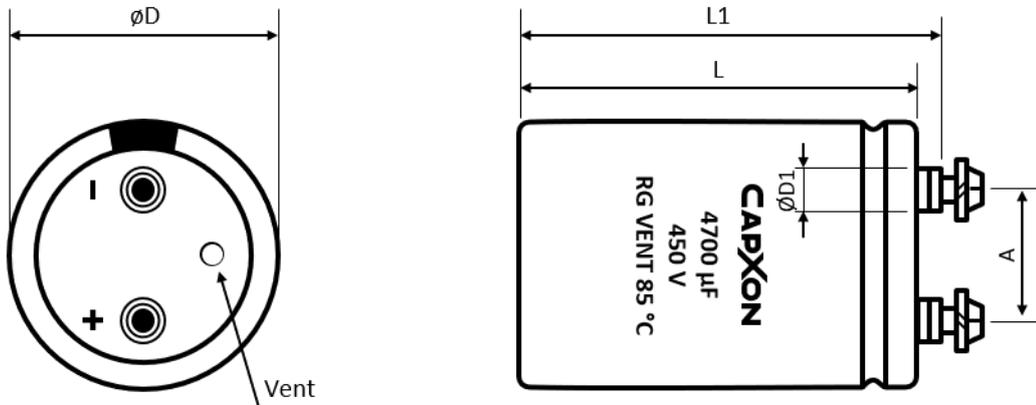
V _R (V)	CR (μF)	∅ D (mm)	L (mm)	Typ. ESR +20°C • 120Hz (mΩ)	Max. ESR +20°C • 120Hz (mΩ)	I _R - Max. Ripple Current +85°C • 120Hz (mA rms)	CapXon Part Number
400	1000	51	75	120	200	3500	RG102M400R750□□□
	1200	51	75	100	170	3850	RG122M400R750□□□
	1500	51	80	76	130	6590	RG152M400R800□□□
	1800	51	96	65	110	7490	RG182M400R960□□□
	2200	51	105	53	90	8500	RG222M400RA05□□□
	2200	63.5	80	53	90	8000	RG222M400S800□□□
	2700	51	118	43	74	9730	RG272M400RA18□□□
	2700	63.5	96	43	74	10000	RG272M400S960□□□
	3300	63.5	96	35	60	12600	RG332M400S960□□□
	3900	63.5	100	30	51	13700	RG392M400SA00□□□
	4700	63.5	115	25	42	16000	RG472M400SA15□□□
	4700	76.2	96	25	42	16700	RG472M400T960□□□
	5600	63.5	130	21	36	18400	RG562M400SA30□□□
	5600	76.2	105	21	36	18600	RG562M400TA05□□□
	6800	76.2	110	17	29	20900	RG682M400TA10□□□
	8200	76.2	130	14	24	24700	RG822M400TA30□□□
	10000	76.2	160	12	20	26900	RG103M400TA60□□□
	10000	89	125	12	20	26400	RG103M400XA25□□□
12000	76.2	190	10	17	31800	RG123M400TA90□□□	
12000	89	145	10	17	30800	RG123M400XA45□□□	
15000	89	236	8	13	38200	RG153M400XB36□□□	
450	1000	51	75	120	200	3500	RG102M450R750□□□
	1200	51	80	100	170	5360	RG122M450R800□□□
	1500	51	96	76	130	6220	RG152M450R960□□□
	1500	63.5	80	76	130	6250	RG152M450S800□□□
	1800	51	96	65	110	7910	RG182M450R960□□□
	2200	51	118	53	90	8000	RG222M450RA18□□□
	2200	63.5	96	53	90	8260	RG222M450S960□□□
	2700	63.5	100	43	74	11400	RG272M450SA00□□□
	3300	63.5	105	35	60	12900	RG332M450SA05□□□
	3900	63.5	115	30	51	14600	RG392M450SA15□□□
	3900	76.2	100	30	51	15200	RG392M450TA00□□□
	4700	63.5	135	25	42	17200	RG472M450SA35□□□
	4700	76.2	105	25	42	17000	RG472M450TA05□□□
	5600	76.2	115	21	36	19300	RG562M450TA15□□□
	6800	76.2	135	17	29	22800	RG682M450TA35□□□
	10000	76.2	190	12	20	29000	RG103M450TA90□□□
	10000	89	150	12	20	28500	RG103M450XA50□□□
	12000	89	236	10	17	33000	RG123M450XB36□□□
500	1000	51	115	160	270	4600	RG102M500RA15□□□
	1000	51	85	160	270	4020	RG102M500R850□□□
	1200	51	96	130	220	4220	RG122M500R960□□□
	1500	51	115	110	180	5140	RG152M500RA15□□□
	1500	63.5	96	110	180	5420	RG152M500S960□□□
	1800	51	130	88	150	5940	RG182M500RA30□□□

STANDARD RATINGS

□□□ see terminal code at dimensions table

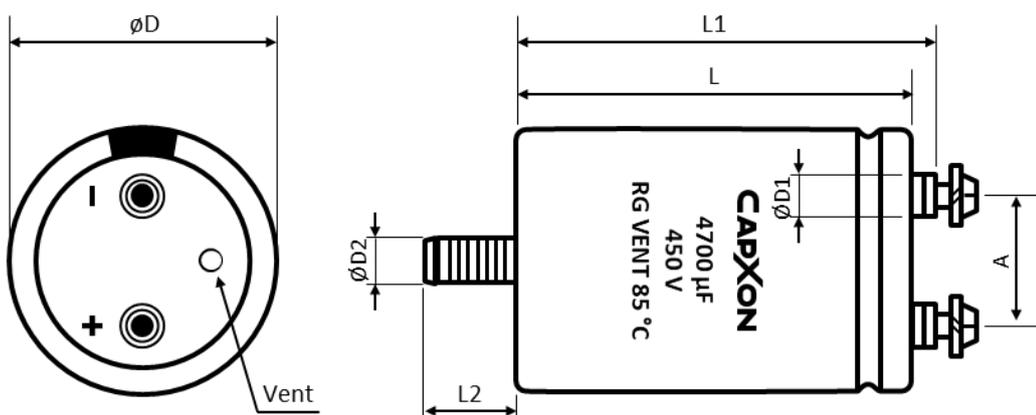
V _R (V)	C _R (μF)	∅ D (mm)	L (mm)	Typ. ESR +20°C • 120Hz (mΩ)	Max. ESR +20°C • 120Hz (mΩ)	I _R • Max. Ripple Current +85°C • 120Hz (mA rms)	CapXon Part Number
500	1800	63.5	96	88	150	5950	RG182M500S960□□□
	2200	63.5	115	71	120	7100	RG222M500SA15□□□
	2200	76.2	96	71	120	7300	RG222M500T960□□□
	2700	63.5	130	58	98	8310	RG272M500SA30□□□
	3300	76.2	115	47	80	9650	RG332M500TA15□□□
	3900	76.2	130	40	68	11100	RG392M500TA30□□□
	4700	76.2	155	33	56	13100	RG472M500TA55□□□
	5600	89	145	28	47	13800	RG562M500XA45□□□
	6800	89	155	23	39	15900	RG682M500XA55□□□
	8200	89	180	19	32	17200	RG822M500XA80□□□
	10000	89	236	16	27	22100	RG103M500XB36□□□
550	1200	51	115	130	220	4600	RG122M550RA15□□□
	1500	63.5	96	110	180	5420	RG152M550S960□□□
	1800	76.2	80	88	150	6120	RG182M550T800□□□
	2200	76.2	96	71	120	7300	RG222M550T960□□□
	2700	76.2	115	58	98	8730	RG272M550TA15□□□
	3300	76.2	130	47	80	10200	RG332M550TA30□□□
	3900	76.2	155	40	68	12100	RG392M550TA55□□□
	4700	76.2	180	33	56	15100	RG472M550TA80□□□
	5600	89	155	28	47	14500	RG562M550XA55□□□
600	1200	63.5	96	160	280	7700	RG122M600S960□□□
	1500	63.5	115	130	220	8300	RG152M600SA15□□□
	1500	76.2	96	130	220	8500	RG152M600T960□□□
	1800	63.5	130	110	180	10300	RG182M600SA30□□□
	1800	76.2	96	110	180	10100	RG182M600T960□□□
	2200	76.2	115	88	150	12000	RG222M600TA15□□□
	2700	76.2	130	71	120	12100	RG272M600TA30□□□
	3000	76.2	155	65	110	15600	RG302M600TA55□□□
	3300	76.2	155	59	100	16400	RG332M600TA55□□□
	3300	89	130	59	100	16570	RG332M600XA30□□□
	3900	76.2	190	50	85	17700	RG392M600TA90□□□
	3900	89	145	50	85	17400	RG392M600XA45□□□
	4700	89	157	41	71	21000	RG472M600XA57□□□
	5600	89	190	35	59	22800	RG562M600XA90□□□
6800	89	220	29	49	24400	RG682M600XB20□□□	
630	1000	63.5	130	190	330	6000	RG102M630SA30□□□
	1200	76.2	115	160	280	6700	RG122M630TA15□□□
	1500	76.2	130	130	220	8100	RG152M630TA30□□□
	1800	76.2	155	110	180	9800	RG182M630TA55□□□
	2200	89	130	88	150	10700	RG222M630XA30□□□
	2700	89	157	71	120	12800	RG272M630XA57□□□
	3300	89	171	59	100	14700	RG332M630XA71□□□
	3900	89	196	50	85	17900	RG392M630XA96□□□
	4700	100	220	41	71	21600	RG472M630DB20□□□
5600	100	250	35	59	24900	RG562M630DB50□□□	

DIMENSIONS • Ring clamp mounting • All dimensions in mm



Terminal	Dimensions (mm) with insulating sleeve					Min. Full Thread (mm)	Max. Torque (Nm)	Terminal code
	$D \pm 2$	$L \pm 3$	$L1 \pm 3$	$D1$ max.	$A \pm 0.5$			
M5	35	50 ~ 120	56.5 ~ 126.5	8.3	12.7	8	2	A50
M5	51	50 ~ 140	56.5 ~ 146.5	10.3	22	8	2	A50
M5	63.5	80 ~ 140	86.5 ~ 146.5	10.3	28.6	8	2	A50
M5	63.5	80 ~ 140	86.5 ~ 146.5	13	28.6	8	2	A53
M5	76.2	100 ~ 240	106.5 ~ 246.5	10.3	31.8	12	2.5	A50
M5	76.2	100 ~ 240	106.5 ~ 246.5	17.5	31.8	12	2.5	A57
M6	76.2	100 ~ 240	106.5 ~ 246.5	17.5	31.8	12	2.5	A67
M6	89	100 ~ 240	106.5 ~ 246.5	17.5	31.8	12	2.5	A67
M8	100	100 ~ 240	110 ~ 250	17.5	41.5	16	5	A87

DIMENSIONS • Threaded stud mounting • All dimensions in



DIMENSIONS • Threaded stud mounting • All dimensions in mm

Terminal	Dimensions (mm) with insulating sleeve							Min. Full Thread (mm)	Max. Torque (Nm)	Terminal code
	D ± 2	L ± 3	L1 ± 3	L2 ± 1	D1 max.	D2	A ± 0.5			
M5	35	50 ~ 120	56.5 ~ 126.5	12	8.3	M8	12.7	8	2	E50
M5	51	50 ~ 140	56.5 ~ 146.5	16	10.3	M12	22	8	2	E50
M5	63.5	80 ~ 140	86.5 ~ 146.5	16	10.3	M12	28.6	8	2	E50
M5	63.5	80 ~ 140	86.5 ~ 146.5	16	13	M12	28.6	8	2	E53
M5	76.2	100 ~ 240	106.5 ~ 246.5	16	10.3	M12	31.8	12	2.5	E50
M5	76.2	100 ~ 240	106.5 ~ 246.5	16	17.5	M12	31.8	12	2.5	E57
M6	76.2	100 ~ 240	106.5 ~ 246.5	16	17.5	M12	31.8	12	2.5	E67
M6	89	100 ~ 240	106.5 ~ 246.5	16	17.5	M12	31.8	12	2.5	E67
M8	100	100 ~ 240	110 ~ 250	16	17.5	M12	41.5	16	5	E87

SLEEVE AND PRINTING SELECTION TABLE

Diameter ØD (mm)	Sleeve Material	Sleeve Printing	CapXon Standard	Halogen Free	Product Code Suffix	Product Code Example
35	PET	Ink	Yes	Yes	-	RG332M160PA00E50
> 35	PVC	Thermo	Yes	No	-	RG103M200SA20E50
> 35	PET	Thermo	No	No	(*) Note	RG103M200SA20E50*
> 35	PET	Ink	No	Yes	(**) Note	RG103M200SA20E50**

Note: (*) and (**) consult CapXon for further details.

ACCESSORIES

- The capacitors are supplied with suitable screws, serrated washers and plain washers. Accessories are not fastened to the capacitor.
- Suitable ring clamps and further assembly material see packaging information “Accessories”.

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

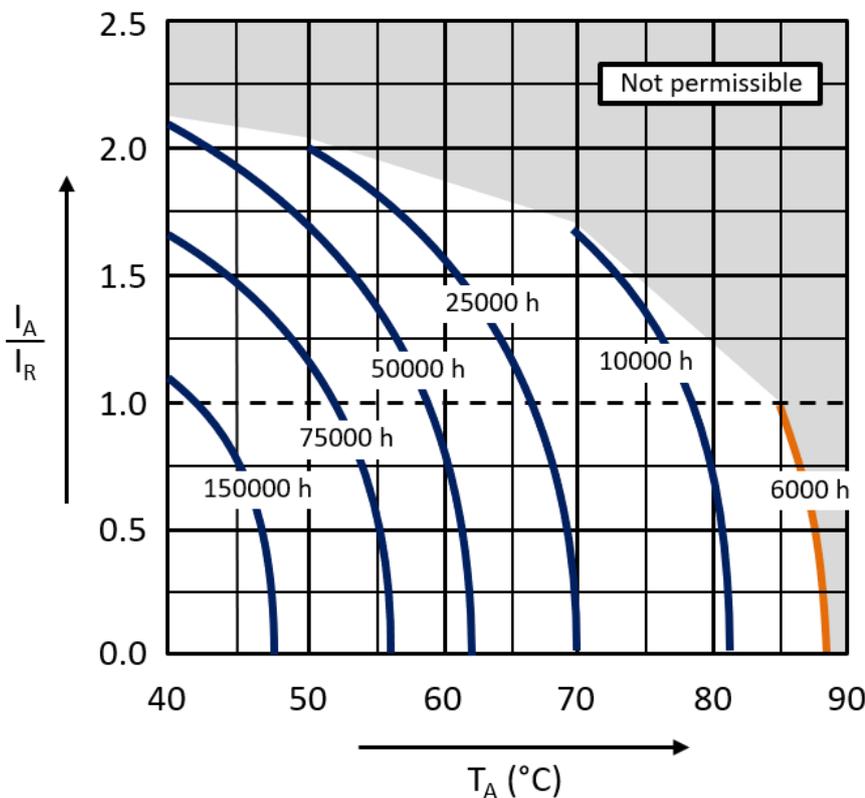
Frequency (Hz)	50/60	100/120	300	1k	≥ 3k
K_f	0.8	1	1.2	1.3	1.4

PRECAUTIONS, GUIDELINES AND PACKAGING INFORMATION

Unless otherwise agreed in individual specifications, all products are subject to our “General Precautions and Guidelines” as well as our “Packaging Information”. Please refer to the following links in the table.

General Precautions & Guidelines	Packaging Information	3D Models	Reliability Tests

USEFUL LIFE



With: I_A : Actual application current
 I_R : Maximum permissible rated ripple current (A RMS)
 T_A : Ambient temperature of the capacitor



DISCLAIMER

All product related data (e.g. specification, statements and general information) are subject to change without any notice. It is necessary that the customer observes all product related technical / application information and handling instructions.

CapXon products are designed and manufactured according to severe quality and safety standards. Under no circumstance, CapXon warrants that any CapXon product is suitable for the purposes intended for your application, even CapXon knows the application. It is customer's duty and obligation to check and make sure that CapXon products are suitable for the purposes intended and select the correct and proper CapXon product. Customers are requested to perform a sufficient validation and reliability evaluation to assure needed safety level and reliability performance by suitable designs and to apply proper safeguards (e.g. redundancies, protective circuits).

Particular operating conditions (ambient temperature, ripple current, voltage, thermal resistance, etc.) as well as storage, production or assembly may affect the performance and the lifetime of the capacitor. Please consult CapXon for lifetime estimation, failure mode considerations or worst-case scenarios according to the product technology, product tolerances / deviations or change of the characteristics of the capacitor due to shipment, storage, handling, production and usage.

For aerospace or military application, life-saving, life-sustaining, safety critical applications or any application where failure may cause severe personal injury or death, please consult us before design-in the capacitor in your application.

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