

UD SERIES ▀ ULTRA LONG LIFE 85°C TYPE

KEY FEATURES



- ALUMINUM ELECTROLYTIC CAPACITOR ▀ Snap-In type
- Useful life: 85°C ▀ 10 000 hours
- Extremely stable dissipation factor and leakage current
- High voltage up to 600V
- Especially for applications with demanding operating environment



SPECIFICATIONS

Items		Performance Characteristics				
Operating Temperature Range		-40 ~ +85°C			-25 ~ +85°C	
Rated Voltage Range	V _R	200 ~ 450V DC			500 ~ 600V 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	68 ~ 2700μF			47 ~ 680μF	
Cap. Tolerance	ΔC	±20% (120Hz ▫ 20°C)				
Leakage Current (20°C ▫ V _R applied)	I _{LEAK}	≤ 3 · √C _R · V _R ▫ After 5 minutes [I _{LEAK} (μA) ; C _R (μF) ; V _R (V)]				
Dissipation Factor % (20°C ▫ 120Hz)	tanδ	V _R (V DC)	200 ~ 400		450 ~ 600	
		tanδ	15		20	
Self-Resistance (20°C ▫ 120Hz)	ESR	Not to exceed the values shown in standard ratings				
Low Temperature Characteristics at 120Hz	Z ratio max.	V _R (V DC)	200 ~ 250	315 ~ 450	500	550 ~ 600
		Z-25°C/Z+20°C	4	5	6	7
		Z-40°C/Z+20°C	7	10	-	-

Lifetime Test		
Useful Life 85°C (V_R & I_R applied)	Test	10 000 hours
	$\Delta C/C_R$	$\leq \pm 20\%$ of initial measured value
	$\tan \delta$	$\leq 200\%$ of initial specified value
	I_{Leak}	$\leq$ 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	5 000 hours
	$\Delta C/C_R$	$\leq \pm 15\%$ of initial measured value
	$\tan \delta$	$\leq 175\%$ of initial specified value
	I_{Leak}	$\leq$ the initial specified value
Shelf Life 85°C ($V_R = 0$)	Test	1 000 hours
	$\Delta C/C_R$	$\leq \pm 15\%$ of initial measured value
	$\tan \delta$	$\leq 175\%$ of initial specified value
	I_{Leak}	$\leq$ 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

STANDARD RATINGS

V _R (V)	C _R (μF)	ø 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
200	330	22	25	330	600	1550	UD331M200M250A
	330	25	25	330	600	1650	UD331M200N250A
	390	22	30	280	510	1760	UD391M200M300A
	390	25	25	280	510	1660	UD391M200N250A
	470	22	30	230	420	1980	UD471M200M300A
	470	25	25	230	420	1930	UD471M200N250A
	560	22	35	200	360	2250	UD561M200M350A
	560	25	30	200	360	2150	UD561M200N300A
	680	22	40	160	290	2620	UD681M200M400A
	680	25	35	160	290	2560	UD681M200N350A
	680	30	25	160	290	2480	UD681M200O250A
	820	22	45	130	240	2990	UD821M200M450A
	820	25	35	130	240	2840	UD821M200N350A
	820	30	30	130	240	2600	UD821M200O300A
	820	35	25	130	240	2420	UD821M200P250A
	1000	25	45	110	200	3290	UD102M200N450A
	1000	30	30	110	200	2760	UD102M200O300A
	1000	35	25	110	200	2700	UD102M200P250A
	1200	25	50	94	170	3750	UD122M200N500A
	1200	30	35	94	170	3540	UD122M200O350A
	1200	35	30	94	170	3540	UD122M200P300A
	1500	30	40	72	130	3920	UD152M200O400A
	1500	35	35	72	130	3920	UD152M200P350A
	1800	30	50	61	110	4750	UD182M200O500A
	1800	35	40	61	110	4700	UD182M200P400A
	2200	30	55	50	90	5310	UD222M200O550A
	2200	35	45	50	90	5300	UD222M200P450A
	2700	35	50	41	74	5480	UD272M200P500A
250	150	22	25	740	1330	950	UD151M250M250A
	180	22	25	620	1110	1150	UD181M250M250A
	220	22	30	500	900	1290	UD221M250M300A
	220	25	25	500	900	1310	UD221M250N250A
	270	22	30	410	740	1470	UD271M250M300A
	270	25	25	410	740	1470	UD271M250N250A
	330	22	30	330	600	1680	UD331M250M300A
	330	25	25	330	600	1680	UD331M250N250A
	390	22	35	280	510	2000	UD391M250M350A
	390	25	30	280	510	1950	UD391M250N300A
	390	30	25	280	510	2100	UD391M250O250A
	470	22	40	230	420	2210	UD471M250M400A
	470	25	30	230	420	2150	UD471M250N300A
	470	35	25	230	420	2200	UD471M250P250A
	560	22	40	200	360	2500	UD561M250M400A
	560	25	35	200	360	2500	UD561M250N350A

see description at end of standard ratings

STANDARD RATINGS

V _R (V)	C _R (μF)	ø 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	560	30	30	200	360	2510	UD561M250O300A
	560	35	25	200	360	2530	UD561M250P250A
	680	22	50	160	290	2910	UD681M250M500A
	680	25	40	160	290	2800	UD681M250N400A
	680	30	30	160	290	2750	UD681M250O300A
	680	35	25	160	290	2640	UD681M250P250A
	820	25	45	130	240	3120	UD821M250N450A
	820	30	35	130	240	3010	UD821M250O350A
	820	35	30	130	240	3000	UD821M250P300A
	1000	25	50	110	200	3600	UD102M250N500A
	1000	30	40	110	200	3460	UD102M250O400A
	1000	35	30	110	200	3390	UD102M250P300A
	1200	30	45	94	170	3930	UD122M250O450A
	1200	35	35	94	170	3810	UD122M250P350A
	1500	30	50	72	130	4520	UD152M250O500A
	1500	35	40	72	130	4520	UD152M250P400A
	1800	35	45	61	110	5210	UD182M250P450A
	2200	35	55	50	90	5700	UD222M250P550A
350	560	35	50	200	360	3210	UD561M350P500A
	680	35	40	160	290	3190	UD681M350P400A
	820	35	50	130	240	3670	UD821M350P500A
	1000	35	55	110	200	4230	UD102M350P550A
	1500	40	80	72	130	6520	UD152M350Q800A
	1500	45	70	72	130	6520	UD152M350V700A
	2200	45	100	50	90	8700	UD222M350VA00A
400	82	22	25	1350	2430	790	UD820M400M250A
	100	22	25	1110	1990	900	UD101M400M250A
	100	25	25	1110	1990	1050	UD101M400N250A
	120	22	30	920	1660	1050	UD121M400M300A
	120	25	25	920	1660	1050	UD121M400N250A
	150	22	30	740	1330	1150	UD151M400M300A
	150	25	25	740	1330	1150	UD151M400N250A
	180	22	35	620	1110	1310	UD181M400M350A
	180	25	30	620	1110	1320	UD181M400N300A
	180	30	25	620	1110	1320	UD181M400O250A
	220	22	40	500	900	1550	UD221M400M400A
	220	25	35	500	900	1520	UD221M400N350A
	220	30	25	500	900	1510	UD221M400O250A
	220	35	25	500	900	1550	UD221M400P250A
	270	22	45	410	740	1800	UD271M400M450A
	270	25	40	410	740	1760	UD271M400N400A
	270	30	30	410	740	1760	UD271M400O300A
	270	35	25	410	740	1720	UD271M400P250A
	330	25	45	330	600	2050	UD331M400N450A

see description at end of standard ratings

STANDARD RATINGS

V _R (V)	C _R (μF)	ø 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	330	30	35	330	600	2020	UD331M400O350A
	330	35	25	330	600	2010	UD331M400P250A
	390	25	50	280	510	2330	UD391M400N500A
	390	30	35	280	510	2180	UD391M400O350A
	390	35	30	280	510	2240	UD391M400P300A
	470	25	55	230	420	2680	UD471M400N550A
	470	30	40	230	420	2650	UD471M400O400A
	470	35	35	230	420	2590	UD471M400P350A
	560	30	45	200	360	3000	UD561M400O450A
	560	35	35	200	360	2980	UD561M400P350A
	680	30	55	160	290	3510	UD681M400O550A
	680	35	40	160	290	3200	UD681M400P400A
	680	35	45	160	290	3420	UD681M400P450A
	820	35	50	130	240	3720	UD821M400P500A
	1000	35	55	110	200	4300	UD102M400P550A
	1200	35	65	94	170	4820	UD122M400P650A
	1200	40	55	94	170	4800	UD122M400Q550A
	1500	40	80	72	130	6620	UD152M400Q800A
	1500	45	60	72	130	6310	UD152M400V600A
	1800	45	80	61	110	7600	UD182M400V800A
450	68	22	25	2170	3900	680	UD680M450M250A
	82	22	25	1790	3230	810	UD820M450M250A
	82	25	25	1790	3230	810	UD820M450N250A
	100	22	30	1470	2650	940	UD101M450M300A
	100	30	25	1470	2650	980	UD101M450O250A
	120	22	30	1230	2210	1050	UD121M450M300A
	120	25	25	1230	2210	1090	UD121M450N250A
	150	22	35	980	1770	1210	UD151M450M350A
	150	25	30	980	1770	1210	UD151M450N300A
	150	30	25	980	1770	1210	UD151M450O250A
	180	22	40	820	1470	1390	UD181M450M400A
	180	25	35	820	1470	1390	UD181M450N350A
	180	30	25	820	1470	1350	UD181M450O250A
	220	22	50	670	1210	1680	UD221M450M500A
	220	25	40	670	1210	1680	UD221M450N400A
	220	30	30	670	1210	1620	UD221M450O300A
	220	35	25	670	1210	1600	UD221M450P250A
	270	25	45	540	980	1850	UD271M450N450A
	270	30	35	540	980	1820	UD271M450O350A
	270	35	30	540	980	1910	UD271M450P300A
	330	25	50	440	800	2180	UD331M450N500A
	330	30	40	440	800	2210	UD331M450O400A
	330	35	30	440	800	2200	UD331M450P300A
	390	30	45	380	680	2510	UD391M450O450A

see description at end of standard ratings

STANDARD RATINGS

V _R (V)	C _R (μF)	ø 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
450	390	35	35	380	680	2500	UD391M450P350A □□
	470	30	50	310	560	2880	UD471M450O500A □□
	470	35	40	310	560	2800	UD471M450P400A □□
	560	30	55	260	470	3250	UD561M450O550A □□
	560	35	45	260	470	3260	UD561M450P450A □□
	680	35	50	220	390	3480	UD681M450P500A □□
	1500	45	100	100	180	7240	UD152M450VA00A □□
500	47	22	25	3130	5640	520	UD470M500M250A □□
	68	22	30	2170	3900	700	UD680M500M300A □□
	68	25	25	2170	3900	700	UD680M500N250A □□
	82	25	30	1790	3230	820	UD820M500N300A □□
	100	25	35	1470	2650	970	UD101M500N350A □□
	100	30	25	1470	2650	970	UD101M500O250A □□
	120	25	35	1230	2210	1090	UD121M500N350A □□
	120	30	30	1230	2210	1100	UD121M500O300A □□
	150	25	40	980	1770	1260	UD151M500N400A □□
	150	30	30	980	1770	1300	UD151M500O300A □□
	150	35	25	980	1770	1320	UD151M500P250A □□
	180	25	45	820	1470	1500	UD181M500N450A □□
	180	30	35	820	1470	1530	UD181M500O350A □□
	180	35	30	820	1470	1550	UD181M500P300A □□
	220	25	55	670	1210	1610	UD221M500N550A □□
	220	30	40	670	1210	1750	UD221M500O400A □□
	220	35	35	670	1210	1800	UD221M500P350A □□
	270	30	45	540	980	2010	UD271M500O450A □□
	270	35	35	540	980	2030	UD271M500P350A □□
	330	30	55	440	800	2320	UD331M500O550A □□
	330	35	40	440	800	2320	UD331M500P400A □□
	390	35	45	380	680	2630	UD391M500P450A □□
	470	35	55	310	560	2990	UD471M500P550A □□
	560	35	65	260	470	3240	UD561M500P650A □□
	680	40	60	220	390	3900	UD681M500Q600A □□
550	56	25	25	2630	4740	660	UD560M550N250A □□
	68	25	30	2170	3900	750	UD680M550N300A □□
	82	25	35	1790	3230	840	UD820M550N350A □□
	82	30	25	1790	3230	870	UD820M550O250A □□
	100	25	35	1470	2650	1010	UD101M550N350A □□
	100	30	30	1470	2650	1010	UD101M550O300A □□
	120	25	40	1230	2210	1120	UD121M550N400A □□
	120	30	35	1230	2210	1150	UD121M550O350A □□
	120	35	25	1230	2210	1150	UD121M550P250A □□
	150	25	50	980	1770	1360	UD151M550N500A □□
	150	30	35	980	1770	1300	UD151M550O350A □□
	150	35	30	980	1770	1450	UD151M550P300A □□

□□ see description at end of standard ratings

STANDARD RATINGS

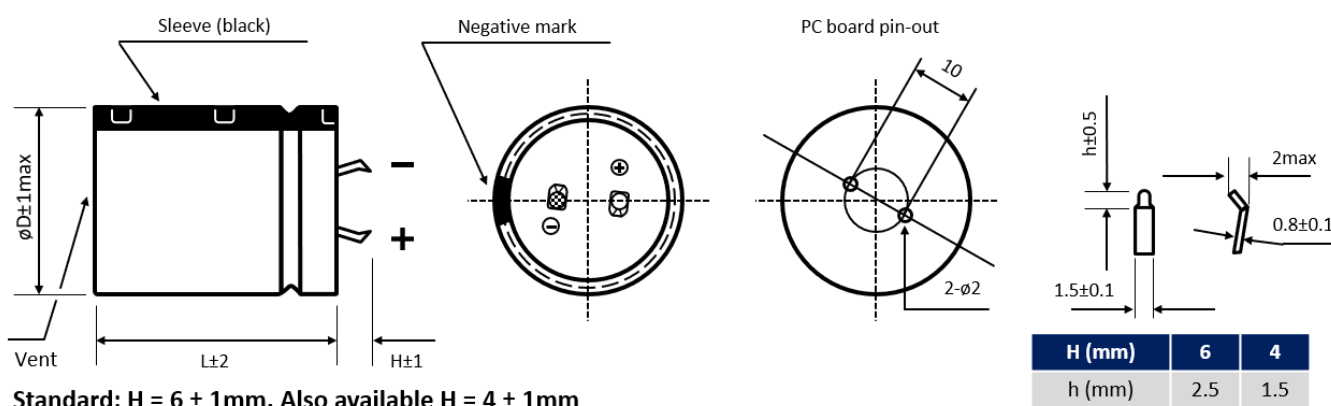
V _R (V)	C _R (μF)	ø D (mm)	L (mm)	Typ. ESR +20°C • 120Hz (mΩ)	Max. ESR +20°C • 120Hz (mΩ)	I _R • Max. Ripple Current +85°C • 120Hz (mA rms)	CapXon Part Number
550	180	25	55	820	1470	1570	UD181M550N550A □□
	180	30	40	820	1470	1580	UD181M550O400A □□
	180	35	35	820	1470	1630	UD181M550P350A □□
	220	30	50	670	1210	1870	UD221M550O500A □□
	220	35	40	670	1210	1870	UD221M550P400A □□
	270	30	55	540	980	2120	UD271M550O550A □□
	270	35	45	540	980	2150	UD271M550P450A □□
	330	35	50	440	800	2450	UD331M550P500A □□
	390	35	55	380	680	2780	UD391M550P550A □□
600	47	25	25	3130	5640	610	UD470M600N250A □□
	56	25	30	2630	4740	680	UD560M600N300A □□
	68	25	35	2170	3900	820	UD680M600N350A □□
	68	30	25	2170	3900	820	UD680M600O250A □□
	82	25	35	1790	3230	880	UD820M600N350A □□
	82	30	30	1790	3230	920	UD820M600O300A □□
	100	25	40	1470	2650	1050	UD101M600N400A □□
	100	30	35	1470	2650	1070	UD101M600O350A □□
	100	35	25	1470	2650	1110	UD101M600P250A □□
	120	25	50	1230	2210	1190	UD121M600N500A □□
	120	30	35	1230	2210	1230	UD121M600O350A □□
	120	35	30	1230	2210	1310	UD121M600P300A □□
	150	25	55	980	1770	1530	UD151M600N550A □□
	150	30	45	980	1770	1530	UD151M600O450A □□
	150	35	35	980	1770	1530	UD151M600P350A □□
	180	30	50	820	1470	1680	UD181M600O500A □□
	180	35	40	820	1470	1720	UD181M600P400A □□
	220	30	55	670	1210	1950	UD221M600O550A □□
	220	35	45	670	1210	1950	UD221M600P450A □□
	270	35	50	540	980	2260	UD271M600P500A □□

□□: Enter **P6** for standard type • 6mm pin length
□□: Enter **Z6** for 3-pin type • 6mm pin length
□□: Enter **Y6** for multipin-type • 6mm pin length

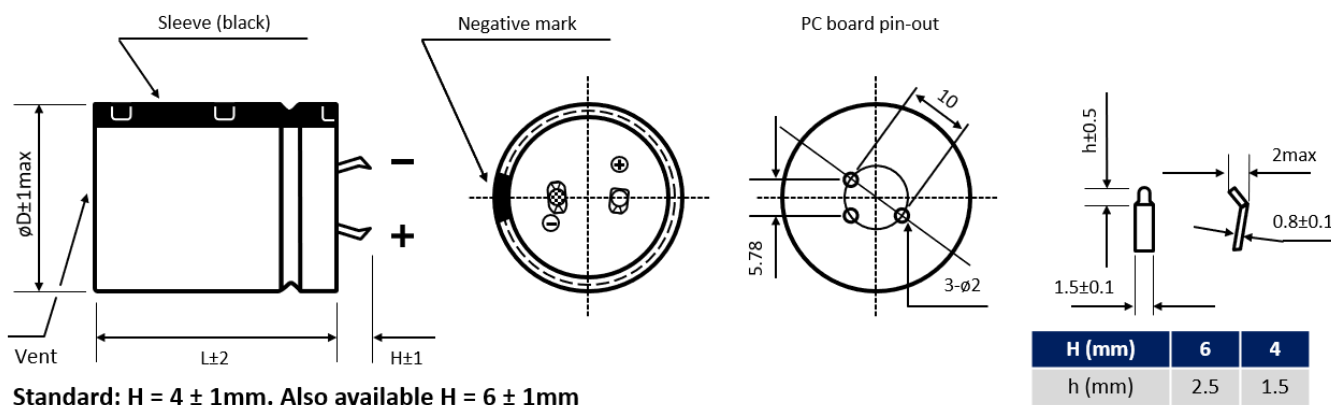
□□: Enter **P4** for standard type • 4mm pin length
□□: Enter **Z4** for 3-pin type • 4mm pin length
□□: Enter **Y4** for multipin type • 4mm pin length

DIMENSIONS ▪ All dimensions in mm

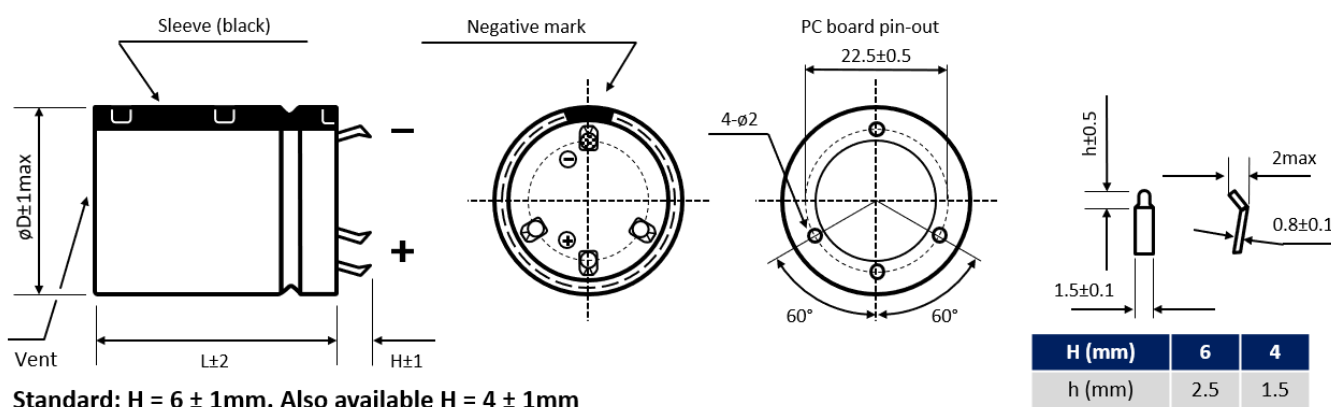
2-pin version ▪ Standard type



3-pin version ▪ Polarity protection



Multipin version ▪ Diameter $\phi D \geq 30 \text{ mm}$



Further possible terminal styles can be found in our packaging information liquid snap-in.

MULTIPLIER K_f for RIPPLE CURRENT vs. FREQUENCY

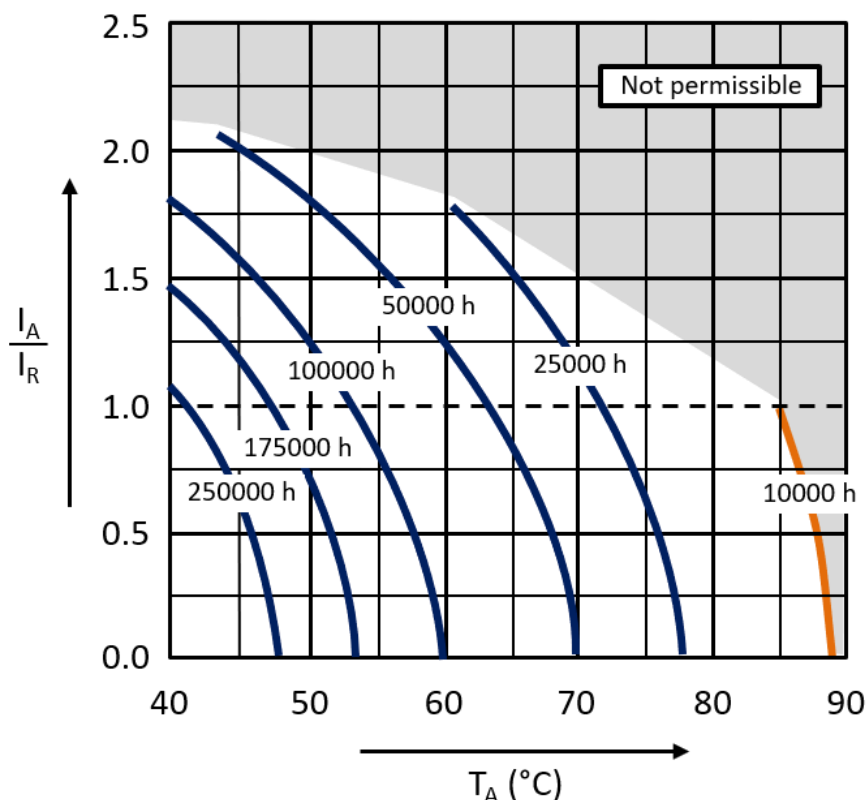
V_R (V) / Frequency (Hz)	50/60	100/120	300	1k	10k	50k - 100k
$200 \leq V_R \leq 250$	0.81	1	1.17	1.32	1.45	1.5
$350 \leq V_R \leq 600$	0.77	1	1.16	1.3	1.41	1.43

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	Vibration Test Profiles	3D Models	Reliability Tests

USEFUL LIFE



With: I_A : Application current
 I_R : Rated ripple current (A RMS)
 T_A : Application 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.

Except for the written expressed warranties, CapXon does not impliedly, by assumption or whatever else, warrant, undertake, promise any other warranty or guaranty for any CapXon product.

For further information, please visit our website www.capxongroup.com or contact CapXon directly.