

MLCA · Screw-Terminal · 85 °C

High Voltage · High Ripple Current

> Specifications · Spezifikationen

Items	Characteristics
Temperature range	-40°C ~ +85 °C at 1.0xU _N
Rated Voltage U _N	600 ~ 2200Vdc (other available on request)
Capacitance tolerance	standard +/- 10 %, +/- 5 % on request
Voltage test between terminals U _{TT}	1.5 x U _N / 10 s
Voltage test terminals to case U _{TC}	≥ 3 000Vac / 10 s
Terminals	M6 x 10 (refer to p. 8)
Stud Bolt	M12 x 16 (refer to p. 8)
Life Time Test / Reference Standard	IEC 61071 : 2007
Life Time Expectancy	100 000 hrs (T _{HOTSPOT} 70 °C, 1.0 x U _N)
Failure Rate	<= 50 FIT = 50 x 10 ⁻⁹ Failures / hour
Dielectric	Polypropylene
Cap	PBT UL94V-0 listed
Case material	Aluminum
Climatic category (IEC 61071)	40/85/56
Product Compliance	RoHS, REACH, Conflict Minerals a.o. - refer to p.12–13

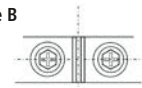


> Dimensions · Abmessungen

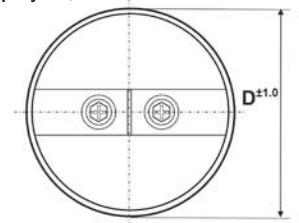
For details refer to p. 8 · Technische Details siehe S. 8

Dimensions (mm)	ØD			
	Ø 76	Ø 86	Ø 116 (L < 100)	Ø 116 (L > 100)
Shape Code for mounting	B, N	B, N	B, N	B, N
Cap Type	B	B	H	I
Terminal Pitch P	32	32	50	50
Diameter at Terminal Ø dT	12	12	14	14
Terminal Length T _L	5	5	5	5
Cap Length L _C	32	32	10	45
Optional Stud Bolt Length L _S	16	16	16	16
Permissible terminal current (Arms)	100	100	100	100

Cap style B



Cap style H, I

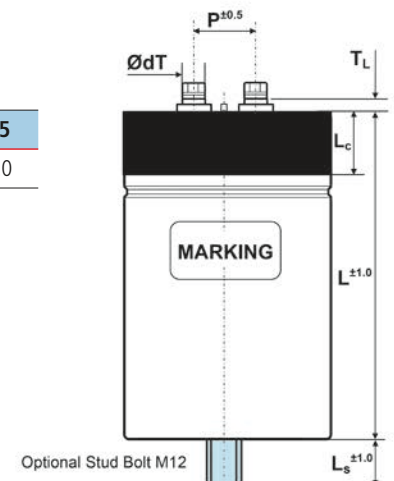


> Ripple Current Multiplier · I_r Strom Multiplikatoren

Temperature [°C]	40	45	50	55	60	65	70	75	80	85
Multiplier (1 kHz)	2.0	1.87	1.75	1.6	1.42	1.2	1.0	0.8	0.6	0.0

I_{max} is to be controlled below the permissible terminal current.

Please contact us if ripple current includes frequencies below 1 kHz and/or above 10 kHz.



> Product Code · Bestellbezeichnung

Example: Series MLCA · 1100V · 2000 µF +/- 10 % · D = 116 mm · L = 345 mm with Stud Bolt

MLCA	1100V	208	K	B	116	345	I	
Series Name	Capacitance code The first two digits are significant. The last digit indicates the number of following zeros in pF.		Shape code B : Stud Bolt N : plain bottom		Case Diameter ØD Length in mm		Cap type B, H, I	Specific features (...)
Rated voltage xxxV		Capacitance tolerance K : ± 10 % J : ± 5 %			Case Length Length in mm			

Rated DC Voltage U_N	Nominal Capacitance C_N [µF]	Ripple Current 1 kHz				Peak Current Maximum value \hat{I} [kA]	ESR [mΩ]	ESL [nH]	Thermal Resistance R_{th} [K/W]	Case Size $D \times L$ [mm]	Product Code
		at 40 °C I_r^* [A RMS]	at 50 °C I_r^* [A RMS]	at 60 °C I_r^* [A RMS]	at 70 °C I_r^* [A RMS]						
600 Vdc U_{TT} 900 Vdc/10s U_{TC} 3 000 Vac/10s	480	70	61	50	35	4.80	1.6	50	5.1	76x95	MLCA600V487K#7695B
	650	67	58	47	33	5.20	1.9	50	4.7	76x120	MLCA600V657K#76120B
		81	70	57	40	5.20	1.1	50	5.6	86x95	MLCA600V657K#8695B
	770	88	76	62	44	6.16	1.2	50	4.3	76x136	MLCA600V777K#76136B
	880	80	69	57	40	6.25	1.3	50	4.8	86x120	MLCA600V887K#86120B
	950	82	71	58	41	6.65	1.4	50	4.2	76x175	MLCA600V957K#76175B
	1000	93	81	66	46	6.70	1.0	50	4.6	86x136	MLCA600V108K#86136B
	1100	81	70	57	40	6.60	1.4	50	4.4	86x155	MLCA600V118K#86155B
	1200	96	83	68	48	7.20	0.8	50	5.4	116x95	MLCA600V128K#11695H
	1300	96	84	68	48	7.80	1.0	60	4.3	86x175	MLCA600V138K#86175B
	1600	94	82	67	47	9.60	0.9	60	5.0	116x120	MLCA600V168K#116120I
	1800	95	83	67	47	10.80	1.1	60	4.0	86x225	MLCA600V188K#86225B
	1900	86	75	61	43	11.40	1.1	60	4.9	116x136	MLCA600V198K#116136I
2100	100	100	85	60	11.55	0.6	60	4.6	116x155	MLCA600V218K#116155I	
2400	100	100	86	61	12.00	0.6	60	4.5	116x175	MLCA600V248K#116175I	
3000	100	100	96	68	15.00	0.8	60	2.7	116x230	MLCA600V308K#116230I	
5000	100	100	100	71	25.00	0.9	80	2.2	116x345	MLCA600V508K#116345I	
700 Vdc U_{TT} 1050 Vdc/10s U_{TC} 3 000 Vac/10s	350	70	61	50	35	3.60	1.6	50	5.1	76x95	MLCA700V357K#7695B
	480	64	55	45	31	3.84	2.1	50	4.7	76x120	MLCA700V487K#76120B
		71	62	51	36	3.84	1.4	50	5.6	86x95	MLCA700V487K#8695B
	580	60	52	43	30	5.80	2.4	50	4.6	76x136	MLCA700V587K#76136B
	620	79	68	56	39	6.20	1.5	50	4.3	76x155	MLCA700V627K#76155B
	700	77	67	55	38	7.20	1.6	50	4.2	76x175	MLCA700V707K#76175B
	750	66	57	47	32	7.20	2.0	50	4.6	86x136	MLCA700V757K#86136B
	780	68	59	48	33	7.80	1.9	50	4.6	86x136	MLCA700V787K#86136B
	920	100	89	73	51	9.20	0.7	50	5.4	116x95	MLCA700V927K#11695H
	950	79	68	56	39	9.50	1.5	60	4.3	86x175	MLCA700V957K#86175B
1200	89	77	63	44	7.20	1.0	60	5.0	116x120	MLCA700V128K#116120I	

* additional information for I, on page 31

Additional designs on request · Weitere Designs auf Anfrage

Rated DC Voltage U_N	Nominal Capacitance C_N [µF]	Ripple Current 1 kHz				Peak Current Maximum value \hat{I} [kA]	ESR [mΩ]	ESL [nH]	Thermal Resistance R_{th} [K/W]	Case Size $D \times L$ [mm]	Product Code # = variable value, see fixing code in the product code
		at 40 °C I_r^* [A RMS]	at 50 °C I_r^* [A RMS]	at 60 °C I_r^* [A RMS]	at 70 °C I_r^* [A RMS]						
700 Vdc U_{TT} 1 050 Vdc/10 s U_{TC} 3 000 Vac/10 s	1 500	86	75	61	43	9.00	1.1	60	4.9	116x136	MLCA700V158K#116136I
		100	90	74	52	9.00	0.8	60	4.6	116x155	MLCA700V158K#116155I
	1 800	94	82	67	47	10.80	1.0	60	4.5	116x175	MLCA700V188K#116175I
		2 300	100	100	96	68	13.80	0.8	60	2.7	116x230
800 Vdc U_{TT} 1 200 Vdc/10 s U_{TC} 3 000 Vac/10 s	280	68	59	48	34	2.80	1.7	50	5.1	76x95	MLCA800V287K#7695B
	370	69	60	49	35	3.70	1.5	50	5.6	86x95	MLCA800V377K#8695B
	430	57	49	40	28	4.30	2.6	50	4.6	76x136	MLCA800V437K#76136B
	470	76	66	54	38	4.70	1.6	50	4.3	76x155	MLCA800V477K#76155B
	510	70	61	50	35	5.10	1.7	50	4.8	86x120	MLCA800V517K#86120B
	560	73	63	51	37	5.60	1.7	50	4.2	76x175	MLCA800V567K#76175B
	580	68	59	48	33	5.80	1.9	50	4.6	86x136	MLCA800V587K#86136B
	640	91	79	64	45	6.40	1.1	50	4.4	86x155	MLCA800V647K#86155B
	710	82	71	58	41	7.10	1.1	50	5.4	116x95	MLCA800V717K#11695H
	750	85	73	60	42	7.50	1.3	60	4.3	86x175	MLCA800V757K#86175B
	970	82	71	58	40	7.76	1.2	60	5.0	116x120	MLCA800V977K#116120I
		1 000	85	73	60	42	8.00	1.4	60	4.0	86x225
			76	66	54	38	8.00	1.4	60	4.9	116x136
	1 200	100	90	74	52	9.60	0.8	60	4.6	116x155	MLCA800V128K#116155I
	1 400	100	91	75	53	11.20	0.8	60	4.5	116x175	MLCA800V148K#116175I
	1 800	100	100	86	60	11.70	1.0	60	2.7	116x230	MLCA800V188K#116230I
3 300	100	100	100	71	19.80	0.9	80	2.2	116x345	MLCA800V338K#116345I	
900 Vdc U_{TT} 1 350 Vdc/10 s U_{TC} 3 000 Vac/10 s	280	63	54	44	31	2.80	2.0	50	5.1	76x95	MLCA900V287K#7695B
	370	67	58	47	33	3.70	1.6	50	5.6	86x95	MLCA900V377K#8695B
	380	56	49	40	28	3.80	2.6	50	4.7	76x120	MLCA900V387K#76120B
	430	55	47	39	27	4.30	2.9	50	4.6	76x136	MLCA900V437K#76136B
	470	74	64	52	36	4.70	1.7	50	4.3	76x155	MLCA900V477K#76155B
	510	68	59	48	34	5.10	1.8	50	4.8	86x120	MLCA900V517K#86120B
	560	69	60	49	34	5.60	2.0	50	4.2	76x175	MLCA900V567K#76175B
	580	64	56	46	32	5.80	2.1	50	4.6	86x136	MLCA900V587K#86136B
	640	87	75	62	43	6.40	1.2	50	4.4	86x155	MLCA900V647K#86155B
	710	79	68	56	39	7.10	1.2	50	5.4	116x95	MLCA900V717K#11695H
	750	82	71	58	40	7.50	1.4	60	4.3	86x175	MLCA900V757K#86175B
	970	78	68	55	39	7.60	1.3	60	5.0	116x120	MLCA900V977K#116120I
		1 000	82	71	58	40	8.00	1.5	60	4.0	86x225
			74	64	52	36	8.00	1.5	60	4.9	116x136
	1 200	93	81	66	47	9.60	1.0	60	4.6	116x155	MLCA900V128K#116155I
	1 400	99	86	70	50	11.20	0.9	60	4.5	116x175	MLCA900V148K#116175I
1 800	100	100	82	58	11.70	1.1	60	2.7	116x230	MLCA900V188K#116230I	
3 300	100	100	95	67	19.80	1.0	80	2.2	116x345	MLCA900V338K#116345I	
1 000 Vdc U_{TT} 1 500 Vdc/10 s U_{TC} 3 000 Vac/10 s	220	57	50	40	29	2.42	2.4	50	5.1	76x95	MLCA1000V227K#7695B
	290	65	56	46	32	3.19	1.7	50	5.6	86x95	MLCA1000V297K#8695B
	300	55	48	39	27	3.30	2.8	50	4.7	76x120	MLCA1000V307K#76120B
	330	54	47	38	26	3.63	3.0	50	4.6	76x136	MLCA1000V337K#76136B

* additional information for I_r on page 31

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Rated DC Voltage U_N	Nominal Capacitance	Ripple Current 1 kHz				Peak Current Maximum value \hat{I} [kA]	ESR [mΩ]	ESL [nH]	Thermal Resistance R_{th} [K/W]	Case Size $D \times L$ [mm]	Product Code # = variable value, see fixing code in the product code
		at 40 °C I_r^* [A RMS]	at 50 °C I_r^* [A RMS]	at 60 °C I_r^* [A RMS]	at 70 °C I_r^* [A RMS]						
1000 Vdc U_{TT} 1500 Vdc/10s U_{TC} 3000 Vac/10s	360	72	62	51	35	3.96	1.8	50	4.3	76x155	MLCA1000V367K#76155B
	400	66	57	47	33	4.40	1.9	50	4.8	86x120	MLCA1000V407K#86120B
	420	69	60	49	34	4.62	2.0	50	4.2	76x175	MLCA1000V427K#76175B
	450	64	56	46	32	4.95	2.1	50	4.6	86x136	MLCA1000V457K#86136B
	500	87	75	62	43	5.00	1.2	50	4.4	86x155	MLCA1000V507K#86155B
	540	79	68	56	39	5.40	1.2	50	5.4	116x95	MLCA1000V547K#11695H
	560	82	71	58	40	5.60	1.4	60	4.3	86x175	MLCA1000V567K#86175B
	740	79	68	55	39	7.40	1.3	60	5.0	116x120	MLCA1000V747K#116120I
	860	71	62	51	35	8.60	1.6	60	4.9	116x136	MLCA1000V867K#116136I
	900	98	85	70	49	8.76	0.9	60	4.6	116x155	MLCA1000V907K#116155I
	1100	99	86	70	50	8.80	0.9	60	4.5	116x175	MLCA1000V118K#116175I
	1400	100	100	82	58	11.20	1.1	60	2.7	116x230	MLCA1000V148K#116230I
2200	100	100	91	64	13.20	1.1	80	2.2	116x345	MLCA1000V228K#116345I	
1100 Vdc U_{TT} 1650 Vdc/10s U_{TC} 3000 Vac/10s	170	54	47	38	27	2.04	2.7	50	5.1	76x95	MLCA1100V177K#7695B
	240	52	45	37	26	2.88	3.1	50	4.7	76x120	MLCA1100V247K#76120B
		61	53	43	31	2.88	1.9	50	5.6	86x95	MLCA1100V247K#8695B
	270	51	44	36	25	3.24	3.4	50	4.6	76x136	MLCA1100V277K#76136B
	300	68	59	48	34	3.60	2.0	50	4.3	76x155	MLCA1100V307K#76155B
	320	62	53	44	31	3.84	2.2	50	4.8	86x120	MLCA1100V327K#86120B
	350	64	56	46	32	4.20	2.3	50	4.2	76x175	MLCA1100V357K#76175B
	420	60	52	43	30	5.04	2.4	50	4.6	86x136	MLCA1100V427K#86136B
		81	70	57	40	5.04	1.4	50	4.4	86x155	MLCA1100V427K#86155B
	450	75	65	53	37	5.40	1.3	50	5.4	116x95	MLCA1100V457K#11695H
	480	76	66	54	38	5.76	1.6	60	4.3	86x175	MLCA1100V487K#86175B
	620	73	63	52	36	6.20	1.5	60	5.0	116x120	MLCA1100V627K#116120I
	650	75	65	53	37	6.50	1.8	60	4.0	86x225	MLCA1100V657K#86225B
	690	69	60	49	34	6.90	1.7	60	4.9	116x136	MLCA1100V697K#116136I
	770	93	81	66	47	7.70	1.0	60	4.6	116x155	MLCA1100V777K#116155I
910	94	82	67	47	9.10	1.0	60	4.5	116x175	MLCA1100V917K#116175I	
1200	100	96	79	55	9.60	1.2	60	2.7	116x230	MLCA1100V128K#116230I	
2000	100	100	84	59	16.00	1.3	80	2.2	116x345	MLCA1100V208K#116345I	
1200 Vdc U_{TT} 1800 Vdc/10s U_{TC} 3000 Vac/10s	140	51	44	36	26	1.68	3.0	50	5.1	76x95	MLCA1200V147K#7695B
	190	58	51	41	29	2.28	2.1	50	5.6	86x95	MLCA1200V197K#8695B
	200	50	43	35	25	2.40	3.4	50	4.7	76x120	MLCA1200V207K#76120B
	220	48	42	34	24	2.64	3.7	50	4.6	76x136	MLCA1200V227K#76136B
	240	65	56	46	32	2.88	2.2	50	4.3	76x155	MLCA1200V247K#76155B
	260	59	51	42	29	3.12	2.4	50	4.8	86x120	MLCA1200V267K#86120B
	280	62	53	44	30	3.36	2.5	50	4.2	76x175	MLCA1200V287K#76175B
	300	58	50	41	28	3.60	2.6	50	4.6	86x136	MLCA1200V307K#86136B
	330	78	67	55	38	3.96	1.5	50	4.4	86x155	MLCA1200V337K#86155B
	360	73	63	51	36	4.32	1.4	50	5.4	116x95	MLCA1200V367K#11695H
	380	72	62	51	35	4.56	1.8	60	4.3	86x175	MLCA1200V387K#86175B
	500	69	59	49	34	5.50	1.7	60	5.0	116x120	MLCA1200V507K#116120I
	540	71	61	50	35	5.94	2.0	60	4.0	86x225	MLCA1200V547K#86225B

* additional information for I_r on page 31

Additional designs on request · Weitere Designs auf Anfrage

Rated DC Voltage U_N	Nominal Capacitance	Ripple Current 1 kHz				Peak Current Maximum value \hat{I} [kA]	ESR [mΩ]	ESL [nH]	Thermal Resistance R_{th} [K/W]	Case Size $D \times L$ [mm]	Product Code # = variable value, see fixing code in the product code
		at 40 °C I_r^* [A RMS]	at 50 °C I_r^* [A RMS]	at 60 °C I_r^* [A RMS]	at 70 °C I_r^* [A RMS]						
1 200 Vdc U_{TT} 1 800 Vdc/10 s U_{TC} 3 000 Vac/10 s	570	66	57	46	32	6.27	1.9	60	4.9	116x136	MLCA1200V577K#116136I
	620	89	77	63	44	6.82	1.1	60	4.6	116x155	MLCA1200V627K#116155I
	720	90	78	64	45	7.92	1.1	60	4.5	116x175	MLCA1200V727K#116175I
	950	100	92	75	53	9.50	1.3	60	2.7	116x230	MLCA1200V957K#116230I
	1 600	100	100	95	67	16.00	1.0	80	2.2	116x345	MLCA1200V168K#116345I
1 300 Vdc U_{TT} 1 950 Vdc/10 s U_{TC} 3 000 Vac/10 s	120	49	42	34	24	1.44	3.3	50	5.1	76x95	MLCA1300V127K#7695B
	160	48	42	34	23	1.92	3.7	50	4.7	76x120	MLCA1300V167K#76120B
		56	48	39	28	1.92	2.3	50	5.6	86x95	MLCA1300V167K#8695B
	180	46	40	33	23	2.16	4.1	50	4.6	76x136	MLCA1300V187K#76136B
	210	62	54	44	31	2.52	2.4	50	4.3	76x155	MLCA1300V217K#76155B
	220	57	49	40	28	2.64	2.6	50	4.8	86x120	MLCA1300V227K#86120B
	240	58	51	41	29	2.88	2.8	50	4.2	76x175	MLCA1300V247K#76175B
	250	55	47	39	27	3.00	2.9	50	4.6	86x136	MLCA1300V257K#86136B
	280	73	63	52	36	3.36	1.7	50	4.4	86x155	MLCA1300V287K#86155B
	310	68	59	48	34	3.72	1.6	50	5.4	116x95	MLCA1300V317K#11695H
	320	70	61	49	34	3.84	1.9	60	4.3	86x175	MLCA1300V327K#86175B
	420	67	58	47	33	5.04	1.8	60	5.0	116x120	MLCA1300V427K#116120I
	450	67	58	48	33	5.40	2.2	60	4.0	86x225	MLCA1300V457K#86225B
	480	62	54	44	31	5.76	2.1	60	4.9	116x136	MLCA1300V487K#116136I
	530	89	77	63	44	6.36	1.1	60	4.6	116x155	MLCA1300V537K#116155I
	600	66	57	50	32	7.2	2.3	60	4.0	86x250	MLCA1300V607K#86250B
630	90	78	64	45	7.56	1.1	60	4.5	116x175	MLCA1300V637K#116175I	
820	99	86	70	49	9.84	1.5	60	2.7	116x230	MLCA1300V827K#116230I	
1 400	100	100	87	61	15.40	1.2	80	2.2	116x345	MLCA1300V148K#116345I	
1 500 Vdc U_{TT} 2 250 Vdc/10 s U_{TC} 3 000 Vac/10 s	140	57	50	40	28	1.4	2.6	50	4.6	86x136	MLCA1500V147K#86136B
	170	52	45	37	26	2.04	3.1	50	4.8	86x120	MLCA1500V177K#86120B
	210	67	58	48	33	2.52	2.0	50	4.4	86x155	MLCA1500V217K#86155B
	310	62	53	44	30	3.72	2.1	60	5.0	116x120	MLCA1500V317K#116120I
	330	63	55	45	31	3.96	2.5	60	4.0	86x225	MLCA1500V337K#86225B
	400	79	68	56	39	4.80	1.4	60	4.6	116x155	MLCA1500V407K#116155I
	600	93	81	66	46	7.20	1.7	60	2.7	116x230	MLCA1500V607K#116230I
	1 000	100	100	95	67	12.00	1.0	80	2.2	116x345	MLCA1500V108K#116345I
1 700 Vdc U_{TT} 2 250 Vdc/10 s U_{TC} 4 000 Vac/10 s	130	49	42	35	24	1.56	3.5	50	4.8	86x120	MLCA1700V137K#86120B
	160	63	54	44	31	1.92	2.3	50	4.4	86x155	MLCA1700V167K#86155B
	240	58	50	41	28	2.88	2.4	60	5.0	116x120	MLCA1700V247K#116120I
	250	59	51	42	29	3.00	2.9	60	4.0	86x225	MLCA1700V257K#86225B
	300	74	64	52	37	3.60	1.6	60	4.6	116x155	MLCA1700V307K#116155I
	460	91	79	64	45	5.52	1.8	60	2.7	116x230	MLCA1700V467K#116230I
2 000 Vdc U_{TT} 3 000 Vdc/10 s U_{TC} 4 000 Vac/10 s	100	46	40	32	23	1.20	4.0	50	4.8	86x120	MLCA2000V107K#86120B
	120	60	52	43	30	1.44	2.5	50	4.4	86x155	MLCA2000V127K#86155B
	190	54	47	38	27	2.28	2.7	60	5.0	116x120	MLCA2000V197K#116120I
		55	48	39	27	2.28	3.3	60	4.0	86x225	MLCA2000V197K#86225B
	240	70	60	49	35	2.88	1.8	60	4.6	116x155	MLCA2000V247K#116155I
	370	82	71	58	41	4.44	2.2	60	2.7	116x230	MLCA2000V377K#116230I
	600	100	100	87	61	6.00	1.2	80	2.2	116x345	MLCA2000V607K#116345I

* additional information for I_r on page 31

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Rated DC Voltage U_N	Nominal Capacitance C_N [μF]	Ripple Current 1 kHz				Peak Current Maximum value \hat{I} [kA]	ESR [mΩ]	ESL [nH]	Thermal Resistance R_{th} [K/W]	Case Size $D \times L$ [mm]	Product Code
		at 40 °C I_r^* [A RMS]	at 50 °C I_r^* [A RMS]	at 60 °C I_r^* [A RMS]	at 70 °C I_r^* [A RMS]						
2200 Vdc U_{TT} 3300 Vdc/10s U_{TC} 4000 Vac/10s	90	48	42	34	24	1.08	3.7	50	4.6	86x136	MLCA2200V906K#86136B
	140	60	52	43	30	1.68	2.2	60	5.0	116x120	MLCA2200V147K#116120I
	150	73	63	51	36	1.80	1.9	60	4.0	86x225	MLCA2200V157K#86225B
	170	59	51	42	29	2.04	2.5	60	4.6	116x155	MLCA2200V177K#116155I
	210	90	78	64	45	2.52	1.1	60	4.5	116x175	MLCA2200V217K#116175I
	290	100	89	73	51	3.48	1.4	60	2.7	116x230	MLCA2200V297K#116230I
	450	100	100	87	61	5.40	1.2	80	2.2	116x345	MLCA2200V457K#116345I

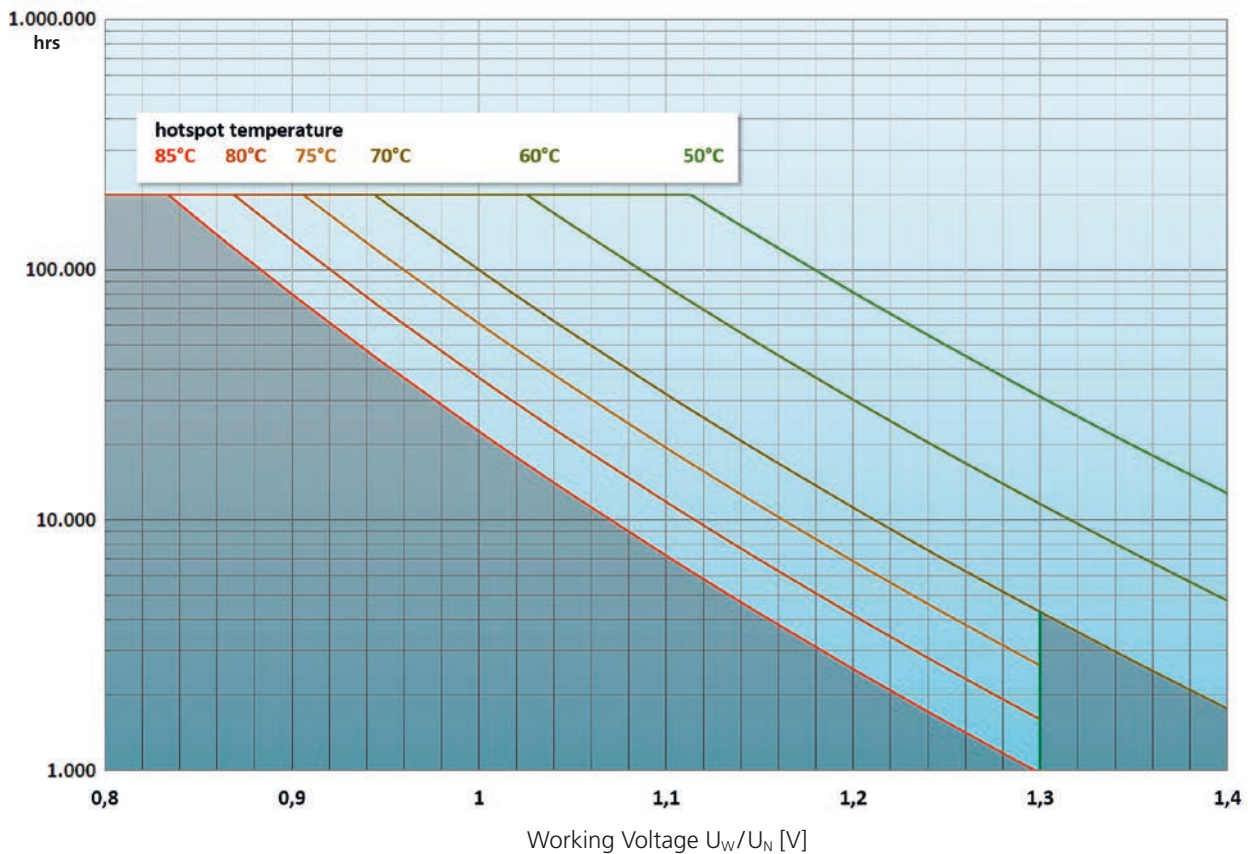
* additional information for I_r on page 31

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> Life Time Graph · Brauchbarkeitsdauer – Diagramm

Lifetime expectancy depending on hotspot temperature $T_{HOTSPOT}$ versus ratio between the effective working voltage U_W and the rated DC voltage U_N

Lebenserwartung in Abhängigkeit von der hotspot Temperatur $T_{HOTSPOT}$ und dem Verhältnis der tatsächlich anliegenden Spannung zur DC Nennspannung U_N



$$T_{HOTSPOT} = T_a + I^2 \times ESR \times R_{th}$$