

MLC2 · Screw-Terminal · 85 °C

Large capacitance · Compact · Fuse Function · high withstanding Voltage

Optional UL 810 standard compliance with series MLCU

Optionale Einhaltung der Norm UL 810 mit der Serie MLCU

> Specifications · Spezifikationen

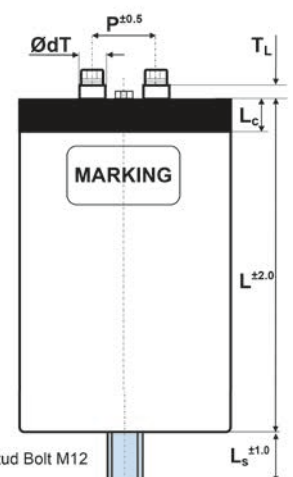
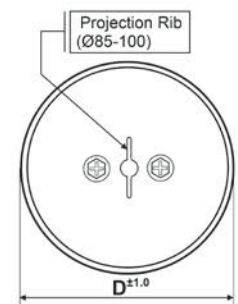
Items	Characteristics
Temperature range	-40 °C ~ +85 °C at 0.7 U _N
	-40 °C ~ +80 °C at 0.8 U _N
	-40 °C ~ +75 °C at 0.9 U _N
	-40 °C ~ +70 °C at 1.0 U _N
Rated Voltage U _N	800 ~ 900Vdc (other available on request)
Voltage test between terminals U _{TT}	1.5 x U _N / 10 s
Voltage test terminals to case U _{TC}	3200Vac / 10 s
Terminals	M6 x 10 (refer to p. 8)
Stud Bolt	M12 x 16 / 18 (refer to p. 8)
Life Time Test / Reference Standard	IEC 61071 : 2007
Life Time Expectancy	150 000 hrs (T _{HOTSPOT} 70 °C, 1.0 x U _N)
Failure Rate	<= 50 FIT = 50 x 10 ⁻⁹ Failures / hour
Dielectric	Polypropylene
Safety Function	Segmented metallized film with Fuse Function
Cap / Impregnants	UL94V-0 listed PBT / Epoxy / Urethane Resin
Case material	Aluminum
Humidity	Class F : 75 % annual average, 95 % 30days/year
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 85	Ø 88.5	Ø 100	Ø 116	Ø 140
Terminal Pitch P	32	32	32	50	50
Diameter at Terminal Ø dT	12	12	12	14	19
Terminal Length T _L	5	5	5	5	5
Cap Length L _C	15	15	15	20	20
Optional Stud Bolt Length L _S	16	16	16	18	18
Clearance distance (mm)	20	20	20	36	31
Creepage distance (mm)	28	28	28	36	31
Permissible terminal current (Arms)	60	60	60	80	100



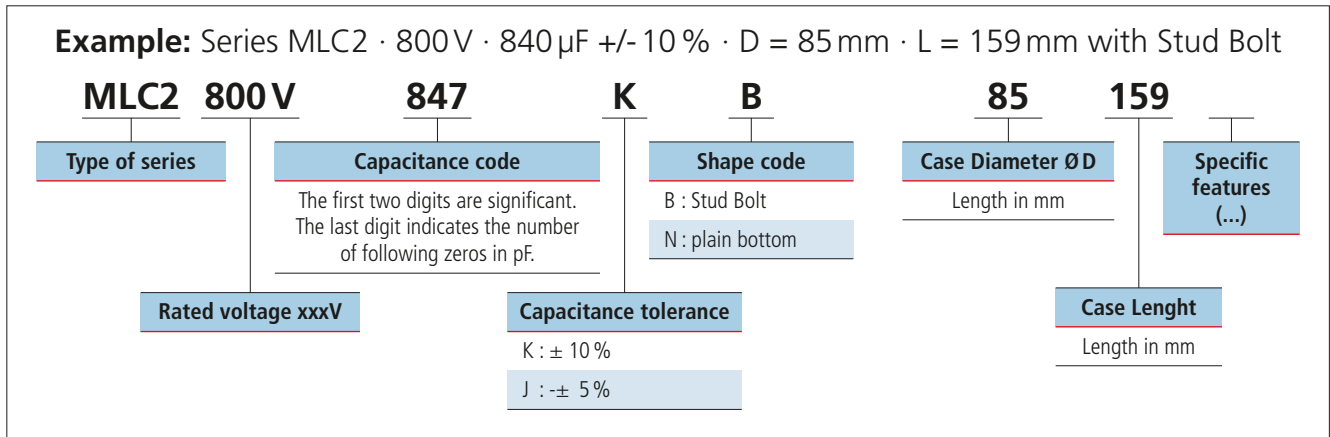
> Ripple Current Multiplier · I_r Strom Multiplikatoren

I _r Multiplier (1 kHz – 10 kHz)				
Ambiant Temp.	0.7x U _N	0.8x U _N	0.9x U _N	1.0x U _N
T _a = 50 °C	1.32	1.22	1.11	1.00
T _a = 60 °C	1.11	1.00	0.86	0.70
T _a = 70 °C	0.86	0.70	0.50	0.00
T _a = 75 °C	0.70	0.50	0.00	
T _a = 80 °C	0.50	0.00		
T _a = 85 °C	0.00			

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.

Optional Stud Bolt M12

> Product Code · Bestellbezeichnung



Rated DC Voltage U_N Max ripple Voltage U_r Non repetitive Surge Volt. U_s	Nominal Capacitance C_N [μF]	Ripple Current at 50°C 1 k–10 kHz I_r^* [A RMS]	Peak Current Maximum value \hat{I} [kA]	Surge Current Maximum value I_S [kA]	ESR ESR [mΩ]	ESL ESL [nH]	Thermal Resistance R_{th} [K/W]	Case Size D x L [mm]	Product Code # = variable value, see fixing code in the product code
800 VDC Ripple Voltage 200 V Surge Voltage 1200 V	300	31	5	15	2.4	60	8.4	85x70	MLC2800V307K#8570
	330	31	5	15	2.6	65	7.8	85x75	MLC2800V337K#8575
	340	33	6	18	2.2	60	8.1	88.5x70	MLC2800V347K#88570
	370	31	5	15	2.8	65	7.2	85x80	MLC2800V377K#8580
		33	6	18	2.4	65	7.5	88.5x75	MLC2800V377K#88575
	410	33	6	18	2.6	65	6.9	88.5x80	MLC2800V417K#88580
	440	40	7	21	1.8	60	6.8	100x70	MLC2800V447K#10070
	450	31	5	15	3.0	75	6.8	85x87	MLC2800V457K#8587
	470	33	6	18	2.8	75	6.4	88.5x87	MLC2800V477K#88587
	480	30	5	15	3.4	80	6.4	85x95	MLC2800V487K#8595
	490	40	7	21	1.9	65	6.4	100x75	MLC2800V497K#10075
	530	32	6	18	3.1	80	6.1	88.5x95	MLC2800V537K#88595
	540	30	5	15	3.9	90	5.6	85x106	MLC2800V547K#85106
		39	7	21	2.1	65	6.1	100x80	MLC2800V547K#10080
	600	31	6	18	3.6	90	5.6	88.5x106	MLC2800V607K#885106
	610	57	10	30	1.2	40	5.0	85x125	MLC2800V617K#85125
		39	7	21	2.3	75	5.6	100x87	MLC2800V617K#10087
	620	47	10	30	1.5	60	5.9	116x70	MLC2800V627K#11670
	630	29	5	15	4.6	100	5.1	85x120	MLC2800V637K#85120
	670	57	10	30	1.3	40	4.6	85x135	MLC2800V677K#85135
680	62	11	33	1.1	40	4.6	88.5x125	MLC2800V687K#885125	
	47	10	30	1.6	65	5.5	116x75	MLC2800V687K#11675	
690	39	7	21	2.6	80	4.9	100x95	MLC2800V697K#10095	
700	31	6	18	4.2	100	4.9	88.5x120	MLC2800V707K#885120	
750	57	10	30	1.4	45	4.3	85x145	MLC2800V757K#85145	
760	62	11	33	1.2	40	4.2	88.5x135	MLC2800V767K#885135	
	46	10	30	1.7	65	5.4	116x80	MLC2800V767K#11680	
780	38	7	21	3.0	90	4.5	100x106	MLC2800V787K#100106	

* additional information for I_r on page 25

Additional designs on request · Weitere Designs auf Anfrage

Rated DC Voltage U_N Max ripple Voltage U_r Non repetitive Surge Volt. U_s	Nominal Capacitance C_N [μ F]	Ripple Current at 50°C 1 k–10 kHz I_r^* [A RMS]	Peak Current Maximum value \hat{I} [kA]	Surge Current Maximum value I_s [kA]	ESR		Thermal Resistance		Case Size $D \times L$ [mm]	Product Code # = variable value, see fixing code in the product code
					ESR [m Ω]	ESL [nH]	R_{th} [K/W]			
800 VDC Ripple Voltage 200 V Surge Voltage 1200 V	830	61	11	33	1.3	45	4.1	88.5x145	MLC2800V837K#885145	
	840	57	10	30	1.6	50	3.8	85x159	MLC2800V847K#85159	
	850	46	10	30	1.9	75	4.9	116x87	MLC2800V857K#11687	
	890	71	15	45	1.0	40	3.9	100x125	MLC2800V897K#100125	
	920	37	7	21	3.4	100	4.2	100x120	MLC2800V927K#100120	
	930	49	15	45	1.2	60	6.8	140x70	MLC2800V937K#14070	
	940	61	12	36	1.5	50	3.5	88.5x159	MLC2800V947K#885159	
	960	56	10	30	1.8	55	3.5	85x175	MLC2800V967K#85175	
	970	45	10	30	2.1	80	4.6	116x95	MLC2800V977K#11695	
	980	71	15	45	1.0	40	3.9	100x135	MLC2800V987K#100135	
	1000	54	10	30	2.2	60	3.1	85x197	MLC2800V108K#85197	
		59	11	33	1.7	55	3.3	88.5x175	MLC2800V108K#885175	
		69	14	42	1.2	45	3.4	100x145	MLC2800V108K#100145	
		44	10	30	2.5	90	4.0	116x106	MLC2800V108K#116106	
		49	15	45	1.3	65	6.2	140x75	MLC2800V108K#14075	
	1100	49	15	45	1.4	65	5.8	140x80	MLC2800V118K#14080	
	1200	54	10	30	2.5	70	2.7	85x225	MLC2800V128K#85225	
		60	12	36	1.9	60	2.9	88.5x197	MLC2800V128K#885197	
		70	15	45	1.2	50	3.3	100x159	MLC2800V128K#100159	
		43	10	30	2.8	100	3.8	116x120	MLC2800V128K#116120	
		83	20	60	0.8	40	3.6	116x125	MLC2800V128K#116125	
		48	15	45	1.5	75	5.6	140x87	MLC2800V128K#14087	
	1300	69	14	42	1.4	55	3.0	100x175	MLC2800V138K#100175	
		83	20	60	0.9	40	3.2	116x135	MLC2800V138K#116135	
	1400	59	11	33	2.2	70	2.6	88.5x225	MLC2800V148K#885225	
		48	15	45	1.7	80	5.0	140x95	MLC2800V148K#14095	
	1500	68	14	42	1.6	60	2.7	100x197	MLC2800V158K#100197	
		83	20	60	0.9	45	3.2	116x145	MLC2800V158K#116145	
	1600	47	15	45	1.9	90	4.7	140x106	MLC2800V168K#140106	
	1700	83	21	63	1.0	50	2.9	116x159	MLC2800V178K#116159	
	1800	68	15	45	1.8	70	2.4	100x225	MLC2800V188K#100225	
		86	30	90	0.7	40	3.8	140x125	MLC2800V188K#140125	
	1900	83	20	60	1.1	55	2.6	116x175	MLC2800V198K#116175	
		47	15	45	2.1	100	4.2	140x120	MLC2800V198K#140120	
	2000	86	30	90	0.7	40	3.8	140x135	MLC2800V208K#140135	
	2100	80	20	60	1.3	60	2.4	116x197	MLC2800V218K#116197	
	2300	87	31	93	0.8	45	3.2	140x145	MLC2800V238K#140145	
	2500	80	20	60	1.5	70	2.1	116x225	MLC2800V258K#116225	
		86	30	90	0.8	50	3.3	140x159	MLC2800V258K#140159	
	2900	86	31	93	0.9	55	3.0	140x175	MLC2800V298K#140175	
3300	86	31	93	1.0	60	2.7	140x197	MLC2800V338K#140197		
3800	85	30	90	1.2	70	2.3	140x225	MLC2800V388K#140225		

* additional information for I_r on page 25

Additional designs on request · Weitere Designs auf Anfrage

MLC2 · Screw-Terminal · 85 °C

Rated DC Voltage U_N Max ripple Voltage U_r Non repetitive Surge Volt. U_s	Nominal Capacitance C_N [μF]	Ripple Current at 50°C 1 k–10 kHz I_r^* [A RMS]	Peak Current Maximum value \hat{I} [kA]	Surge Current Maximum value I_s [kA]	ESR		Thermal Resistance		Case Size D x L [mm]	Product Code # = variable value, see fixing code in the product code
					ESR [mΩ]	ESL [nH]	R_{th} [K/W]			
900 VDC Ripple Voltage 200 V Surge Voltage 1350 V	230	30	4	12	2.6	60	8.3	85x70	MLC2900V237K#8570	
	250	29	4	12	2.9	65	8.0	85x75	MLC2900V257K#8575	
		31	5	15	2.5	60	8.1	88.5x70	MLC2900V257K#88570	
	280	29	4	12	3.1	65	7.5	85x80	MLC2900V287K#8580	
		31	5	15	2.6	65	7.8	88.5x75	MLC2900V287K#88575	
	310	31	5	15	2.9	65	7.0	88.5x80	MLC2900V317K#88580	
	320	29	5	15	3.4	75	6.8	85x87	MLC2900V327K#8587	
	350	31	5	15	3.2	75	6.3	88.5x87	MLC2900V357K#88587	
		39	7	21	2.0	60	6.5	100x70	MLC2900V357K#10070	
	360	28	4	12	3.8	80	6.5	85x95	MLC2900V367K#8595	
	390	38	7	21	2.1	65	6.4	100x75	MLC2900V397K#10075	
	400	30	5	15	3.5	80	6.2	88.5x95	MLC2900V407K#88595	
	410	28	5	15	4.4	90	5.7	85x106	MLC2900V417K#85106	
	430	38	7	21	2.3	65	6.0	100x80	MLC2900V437K#10080	
	450	30	5	15	4.1	90	5.3	88.5x106	MLC2900V457K#885106	
	460	55	9	27	1.4	40	4.6	85x125	MLC2900V467K#85125	
	470	37	7	21	2.6	75	5.6	100x87	MLC2900V477K#10087	
		45	9	27	1.6	60	6.0	116x70	MLC2900V477K#11670	
	480	27	4	12	5.1	100	5.3	85x120	MLC2900V487K#85120	
	510	55	9	27	1.5	40	4.3	85x135	MLC2900V517K#85135	
		59	10	30	1.3	40	4.3	88.5x125	MLC2900V517K#885125	
	530	45	9	27	1.7	65	5.7	116x75	MLC2900V517K#11675	
		29	5	15	4.7	100	4.9	88.5x120	MLC2900V537K#885120	
	540	37	7	21	2.8	80	5.1	100x95	MLC2900V547K#10095	
	570	54	9	27	1.6	45	4.2	85x145	MLC2900V577K#85145	
		59	10	30	1.4	40	4.0	88.5x135	MLC2900V577K#885135	
	590	44	9	27	1.9	65	5.3	116x80	MLC2900V577K#11680	
		36	6	18	3.3	90	4.6	100x106	MLC2900V597K#100106	
	620	56	8	24	1.8	55	3.5	85x175	MLC2900V627K#85175R	
	630	57	10	30	1.5	45	4.0	88.5x145	MLC2900V637K#885145	
	640	54	9	27	1.8	50	3.7	85x159	MLC2900V647K#85159	
	650	44	9	27	2.0	75	5.0	116x87	MLC2900V657K#11687	
	690	34	6	18	3.8	100	4.4	100x120	MLC2900V697K#100120	
		69	13	39	1.0	40	4.0	100x125	MLC2900V697K#100125	
	710	57	10	30	1.6	50	3.8	88.5x159	MLC2900V717K#885159	
		48	14	42	1.3	60	6.5	140x70	MLC2900V717K#14070	
730	54	9	27	2.0	55	3.4	85x175	MLC2900V737K#85175		
	43	9	27	2.3	80	4.6	116x95	MLC2900V737K#11695		
780	69	13	39	1.1	40	3.7	100x135	MLC2900V787K#100135		
	48	14	42	1.4	65	6.0	140x75	MLC2900V787K#14075		
810	57	10	30	1.8	55	3.4	88.5x175	MLC2900V817K#885175		
820	53	9	27	2.3	60	3.0	85x197	MLC2900V827K#85197		
830	43	9	27	2.6	90	4.1	116x106	MLC2900V837K#116106		

* additional information for I_r on page 25

Additional designs on request · Weitere Designs auf Anfrage

Rated DC Voltage U_N Max ripple Voltage U_r Non repetitive Surge Volt. U_s	Nominal Capacitance C_N [μF]	Ripple Current at 50°C 1 k–10 kHz I_r^* [A RMS]	Peak Current Maximum value \hat{I} [kA]	Surge Current Maximum value I_s [kA]	ESR		ESL		Thermal Resistance R_{th} [K/W]	Case Size $D \times L$ [mm]	Product Code # = variable value, see fixing code in the product code
					ESR [mΩ]	ESL [nH]					
900 VDC Ripple Voltage 200 V Surge Voltage 1350 V	860	68	13	39	1.2	45	3.5	100x145	MLC2900V867K#100145		
	870	47	14	42	1.5	65	5.9	140x80	MLC2900V877K#14080		
	910	56	10	30	2.1	60	3.0	88.5x197	MLC2900V917K#885197		
	930	68	13	39	1.4	50	3.0	100x159	MLC2900V937K#100159		
	940	80	18	54	0.9	40	3.4	116x125	MLC2900V947K#116125		
	960	52	9	27	2.7	70	2.7	85x225	MLC2900V967K#85225		
	970	42	9	27	3.0	100	3.7	116x120	MLC2900V977K#116120		
	980	47	14	42	1.6	75	5.5	140x87	MLC2900V987K#14087		
	1 000	54	9	27	2.6	70	2.6	88.5x225	MLC2900V108K#885225		
		66	12	36	1.6	55	2.8	100x175	MLC2900V108K#100175		
		79	17	51	0.9	40	3.5	116x135	MLC2900V108K#116135		
	1 100	64	13	39	1.8	60	2.7	100x197	MLC2900V118K#100197		
		78	17	51	1.0	45	3.2	116x145	MLC2900V118K#116145		
		46	13	39	1.8	80	5.1	140x95	MLC2900V118K#14095		
	1 200	100	17	51	1.0	50	2.8	116x159	MLC2900V128K#116159S		
		45	13	39	2.0	90	4.8	140x106	MLC2900V128K#140106		
	1 300	79	18	54	1.1	50	2.9	116x159	MLC2900V138K#116159		
	1 400	66	13	39	2.0	70	2.3	100x225	MLC2900V148K#100225		
		78	17	51	1.3	55	2.5	116x175	MLC2900V148K#116175		
		45	13	39	2.4	100	4.0	140x120	MLC2900V148K#140120		
		84	27	81	0.7	40	4.0	140x125	MLC2900V148K#140125		
	1 500	83	26	78	0.8	40	3.6	140x135	MLC2900V158K#140135		
	1 600	77	17	51	1.4	60	2.4	116x197	MLC2900V168K#116197		
	1 700	83	26	78	0.8	45	3.6	140x145	MLC2900V178K#140145		
	1 900	77	18	54	1.6	70	2.1	116x225	MLC2900V198K#116225		
		84	26	78	0.9	50	3.1	140x159	MLC2900V198K#140159		
	2 200	84	27	81	1.0	55	2.8	140x175	MLC2900V228K#140175		
	2 500	83	27	81	1.1	60	2.6	140x197	MLC2900V258K#140197		
2 900	81	27	81	1.3	70	2.3	140x225	MLC2900V298K#140225			

* additional information for I_r on page 25

Additional designs on request · Weitere Designs auf Anfrage

> Life Time Table · Brauchbarkeitsdauer – Tabelle

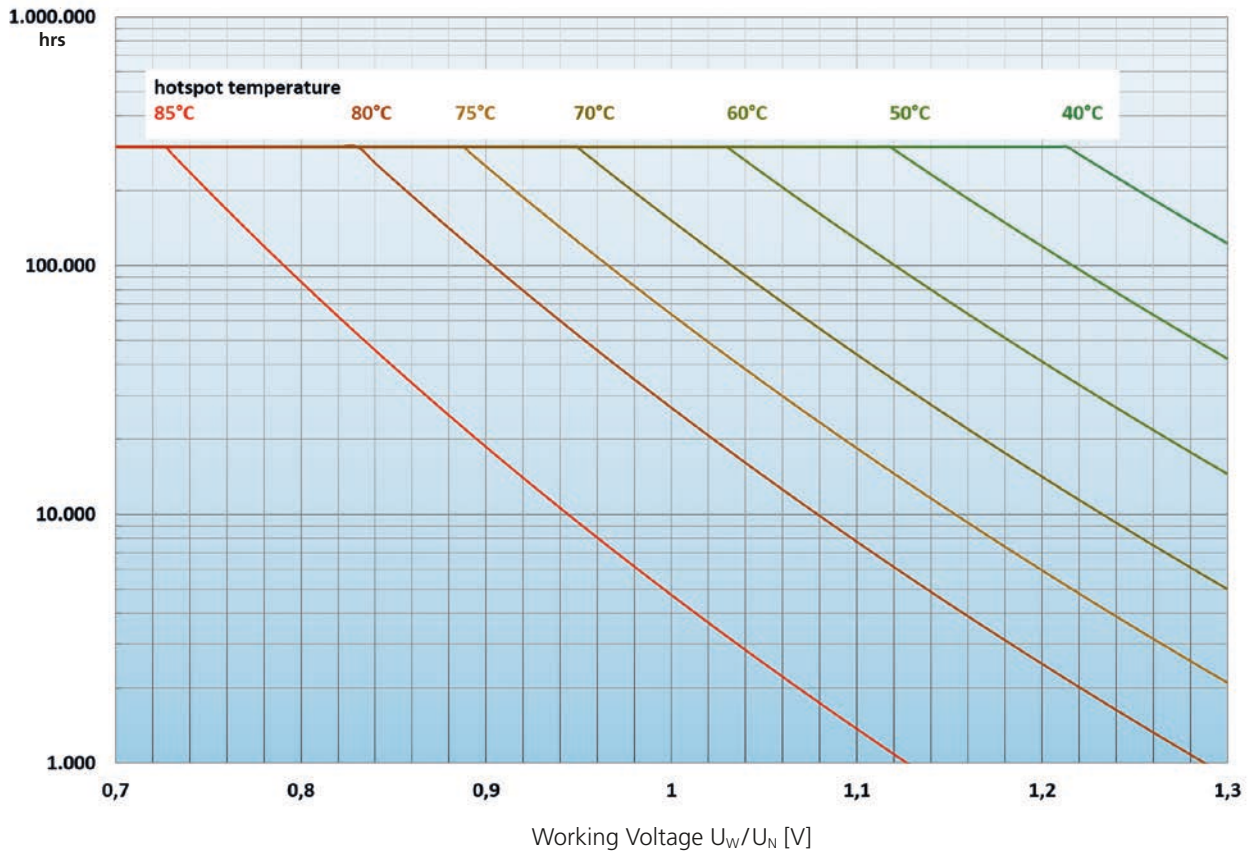
Lifetime as function of ratio between the effective working voltage U_w and the rated DC voltage U_N													
$T_{HOTSPOT}$	x 0.7	x 0.75	x 0.8	x 0.85	x 0.9	x 0.95	x 1.0	x 1.05	x 1.1	x 1.15	x 1.2	x 1.25	x 1.30
40°C	300	300	300	300	300	300	300	300	300	300	300	204	123
45°C	300	300	300	300	300	300	300	300	300	300	203	120	72
50°C	300	300	300	300	300	300	300	300	300	208	120	70	42
55°C	300	300	300	300	300	300	300	300	217	122	70	41	25
60°C	300	300	300	300	300	300	300	233	128	71	41	24	15
65°C	300	300	300	300	300	300	258	137	75	42	24	14	9
70°C	300	300	300	300	300	295	151	80	44	25	14	8	5
75°C	300	300	300	300	251	124	64	33	19	11	6	3.5	2
80°C	300	300	300	221	105	52	27	14	8	4	2.5	1.5	
85°C	300	199	86	39	19	9	5	2.5	1.5				

khrs value limited to 300 000 hours.

> 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



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