HUC · Snap-In · 5000 h/105 °C

Standard Performances · Most Compact Design

› Specifications · Spezifikationen

Items	Characteristics
Temperature range	-25°C ~ + 105°C
Capacitance tolerance (at 20°C)	Standard +/- 20%, -10%/+30% on request
Surge voltage	max. 30 sec per 6 Minutes, 1.000 times
Leakage current max. I_L (20°C, 5 min)	0.02 • C • V_r [µA] or 3 mA, which is smaller.
Useful life	5000 hours at 105°C
Field failure rate	0.5 FIT = 0.5 • 10^{-9} Failures/hour
Reference standards	IEC 60384-4, JIS C 5101-4
Vibration	0.75mm, 10...55Hz, 10g, 3x2h
Sleeve withstanding voltage	3000 Vac/1 min between terminals bundled and plate*
Product Compliance	RoHS, REACH, Conflict Minerals a.o. - refer to p. 14–15

* Typical value using sleeve which is free from any scratches and damages

› Outline Drawings · Bauformen

Refer to page 9 for available terminal shapes and dimensions. · Auf Seite 9 finden Sie die verfügbaren Bauformen und Maße.

› Product Code · Bestellbezeichnung

Example: Series HUC · 450 V · 1500 µF ±20 % · 35x65 mm · 2-pin short · without plate

HUC **2W** **152** **M** **C** **A** **S10** **WPEC**

Type of series

Capacitance code

The first two digits are significant. The last digit indicates the number of following zeros in µF.

Terminal symbol code

- R: 2-claw 6.3 mm
- S: 4-claw 6.3 mm
- C: 2-claw short 4.0 mm
- X: 4-claw short 4.0 mm
- E: 3-claw short 4.0 mm
- T: 2-lugs 4.5 mm

Diameter code

Code	ØD
X	20
Y	25
Z	30
A	35

Outer design code

None:
PET sleeve and PVC plate

WPEC:
PET sleeve without plate

Rated voltage code

Code	Voltage
2W	450

Capacitance tolerance

- M : ± 20%
- Q : -10% ~ +30%

Length Code

Code	L	Code	L
S7	50	S11	70
S8	55	S12	75
S9	60	S13	80
S10	65		

Rated VoltageCode (Surge Voltage) V_r [V DC]	Capacitance C_r [µF]	Ripple Current at 105°C/120Hz I_r [A RMS]	Ripple Current at 40°C/120Hz [A RMS]	ESR (typ) at 20°C/100Hz [mΩ]	Dissipation Factor at 20°C/100Hz Tan δ	DxL [mm]	Product Code # = variable value, see terminal code in the product code
450 VDC Code: 2W Surge Voltage 500 VDC	**450**	1.43	3.15	544	0.3	22x50	HUC2W451M#XS7
	500	1.55	3.41	490	0.3	22x55	HUC2W501M#XS8
	550	1.67	3.68	445	0.3	22x60	HUC2W551M#XS9
	590	1.70	3.74	415	0.3	25x50	HUC2W591M#YS7
	670	1.87	4.12	365	0.3	25x55	HUC2W671M#YS8
	740	2.01	4.43	331	0.3	25x60	HUC2W741M#YS9
	890	2.19	4.82	275	0.3	30x50	HUC2W891M#ZS7
	990	2.37	5.22	247	0.3	30x55	HUC2W991M#ZS8
	1 100	2.56	5.64	223	0.3	30x60	HUC2W112M#ZS9
	1 170	2.57	5.66	209	0.3	35x50	HUC2W1170UFM#AS7
	1 180	2.68	5.90	207	0.3	30x65	HUC2W1180UFM#ZS10
	1 310	2.80	6.16	187	0.3	35x55	HUC2W1310UFM#AS8
	1 320	2.86	6.30	185	0.3	30x70	HUC2W1320UFM#ZS11
	1 360	2.92	6.43	180	0.3	30x75	HUC2W1360UFM#ZS12
	1 440	3.03	6.67	170	0.3	30x80	HUC2W1440UFM#ZS13
	1 450	3.01	6.63	169	0.3	35x60	HUC2W1450UFM#AS9
	1 500	3.09	6.80	163	0.3	35x65	HUC2W152M#AS10
	1 620	3.24	7.13	151	0.3	35x70	HUC2W1620UFM#AS11
	1 720	3.36	7.40	142	0.3	35x75	HUC2W1720UFM#AS12
	1 840	3.50	7.70	133	0.3	35x80	HUC2W1840UFM#AS13

Additional designs on request · Weitere Designs auf Anfrage

› Ripple Current Multiplier · Wechselstrommultiplikator

Frequency [Hz]	50/60	120	300	1k	≥ 10k
Multiplier	0.70	1.00	1.10	1.15	1.40

Ta (°C)	40	45	50	55	60	65	70	75	80	85	90	95	100	105
Multiplier	2.2	2.2	2.1	2.0	1.9	1.8	1.7	1.6	1.5	1.4	1.3	1.2	1.1	1.0

Forced cooling – Wind speed [m/sec]	v < 0.25	v ≥ 0.25	v ≥ 0.5	v ≥ 1.0	v ≥ 2.0	v ≥ 3.0
Multiplier	1.00	1.05	1.10	1.15	1.20	1.25

› Life Time Table · Brauchbarkeitsdauer – Tabelle

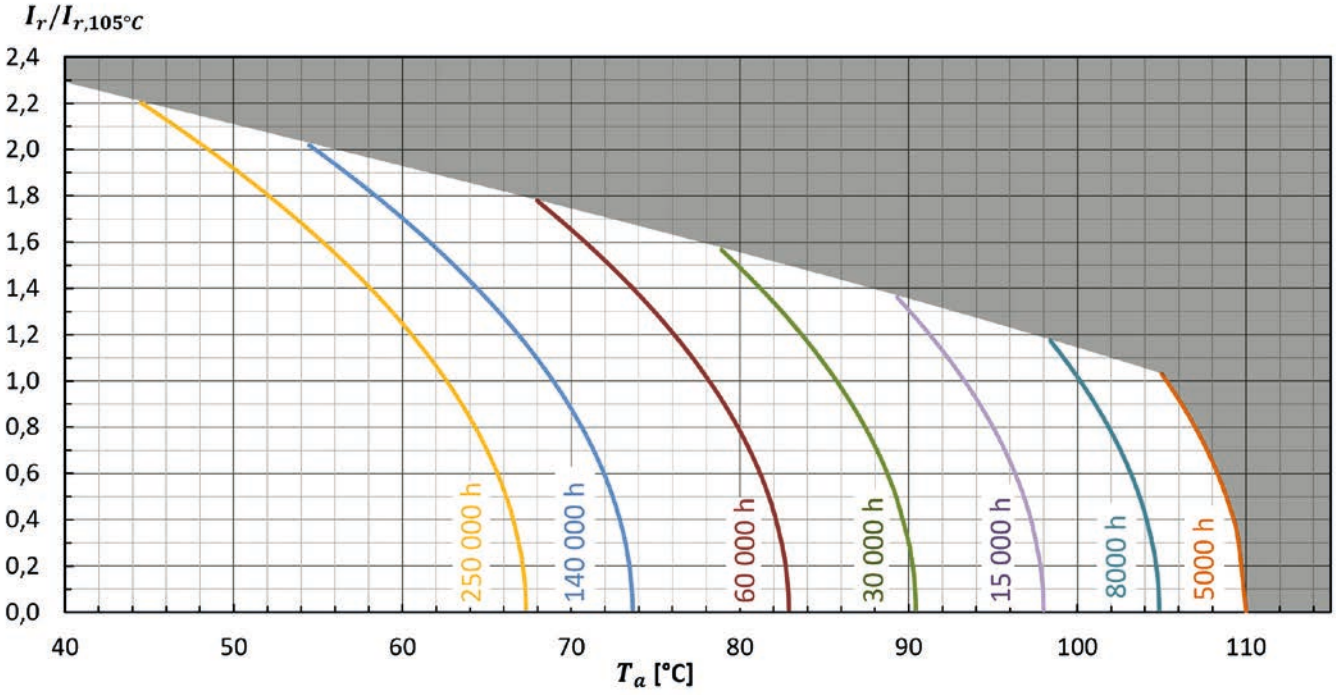
HUC	Ripple Current Multiplier												
T_a	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2
40 °C	250	250	250	250	250	250	250	250	250	250	250	250	250
45 °C	250	250	250	250	250	250	250	250	250	250	250	250	240
50 °C	250	250	250	250	250	250	250	250	250	250	218	183	
55 °C	250	250	250	250	250	250	250	222	191	163	138		
60 °C	250	250	250	236	210	185	162	141	121	103			
65 °C	201	183	166	149	133	117	103	89	77				
70 °C	127	116	105	94	84	74	65	56					
75 °C	80	73	66	60	53	47	41						
80 °C	51	46	42	38	34	30							
85 °C	32	29	27	24	21								
90 °C	20	19	17	15									
95 °C	13	12	11										
100 °C	8	7											
105 °C	5												

khrs Max. value limited to 250 000 hours.

› Life Time Graph · Brauchbarkeitsdauer – Diagramm

Useful life depending on ambient temperature T_a and ripple current operating conditions I_r versus rated ripple current at the upper category temperature $I_{r,\ 105°C,120Hz}$

Brauchbarkeitsdauer in Abhängigkeit von Umgebungstemperatur T_a und Wechselstrombelastung I_r im Verhältnis zur max. Wechselstrombelastung bei oberer Kategorietemperatur $I_{r,\ 105°C,120Hz}$



› Life Time Tests and Requirements · Anforderungen Brauchbarkeitsdauer

Life time test	Test procedure	End of Life criteria
Endurance test	T_a = 105°C; V_r, I_r applied 4000 hours	ΔC/C ≤ 20% (of initial value) Tanδ ≤ 200% (of specified value) I_L ≤ specified value
Useful life	T_a = 105°C; V_r, I_r applied 5000 hours	ΔC/C ≤ 30% (of initial value) Tanδ < 300% (of specified value) I_L ≤ specified value

Reference Specification: JIS C 5101-4, JIS C 5102, IEC 60384-4