

HU3 · Snap-In · 6000 h/105 °C

Standard Performances · Higher Ripple

> Specifications · Spezifikationen

Items	Characteristics
Temperature range	-40°C ~ + 105°C
Capacitance tolerance (at 20°C)	Standard +/- 20%, -10%/+30% on request
Surge voltage	Repetitive max. 30 sec per 6 Minutes
Leakage current max. I_L (20°C, 5 min)	0.02 • C • V_r [μ A] or 3 mA, which is smaller.
Useful life	6 000 hours at 105°C
Field failure rate	0.5 FIT = 0.5 • 10 ⁻⁹ Failures/hour
RoHS conform	Directive 2011/65/EU & (EU)2015/863
Specifications	JIS C 5101-4, AEC-Q200 qualified
Vibration	0.75mm, 10...55Hz, 10g, 3x2h



> Outline Drawings · Bauformen

Refer to page 8 for available terminal shapes and dimensions. · Auf Seite 8 finden Sie die verfügbaren Bauformen und Maße.

> Product Code · Bestellbezeichnung

Example: Series HU3 · 400 V · 390 μ F \pm 20 % · 30x50 mm · 2-Pin terminal · without plate

HU3

2G

391

M

R

Z

S7

WPEC

Type of series

Capacitance code

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

Terminal
symbol code

R: 2-pin terminal
S: 4-pin terminal
C: 2-pin short terminal
X: 4-pin short terminal
E: 3-pin short terminal

Diameter code

Code	ØD
W	20
X	22
Y	25
Z	30
A	35
B	40
C	50

Outer design code

None:
PET sleeve and PVC plate
WPEC:
PET sleeve without plate
Others on request

Rated voltage code

Code	Voltage	Code	Voltage	Code	Voltage
1C	16	2A	100	2G	400
1E	25	2C	160	420V	420
1V	35	2P	180	2W	450
1H	50	2D	200	2H	500
1J	63	2E	250		
1K	80	2V	350		

Capacitance
tolerance

M : \pm 20%
Q : -10% ~ +30%

Length code

Code	L	Code	L	Code	L
S1	20	S8	55	S15	90
S2	25	S9	60	S16	95
S3	30	S10	65	S17	100
S4	35	S11	70	S18	105
S5	40	S12	75	S19	110
S6	45	S13	80		
S7	50	S14	85		

Rated VoltageCode (Surge Voltage) V_r [V DC]	Capacitance C_r [μ F]	Ripple Current at 105°C/120Hz I_r [A RMS]	Ripple Current at 40°C/120Hz [A RMS]	ESR (typ) at 20°C/100Hz [m Ω]	Dissipation Factor at 20°C/100Hz Tan δ	DxL [mm]	Product Code # = variable value, see fixing code in the product code	
16 VDC Code: 1C Surge Voltage 20 VDC	4 700	1.63	4.40	95	0.5	22x25	HU31C472M#XS2	
		2.22	6.00	65	0.5	22x35	HU31C682M#XS4	
	6 800	2.98	8.05	45	0.5	22x45	HU31C103M#XS6	
		2.12	5.73	65	0.5	25x30	HU31C682M#YS3	
		2.66	7.19	45	0.5	30x25	HU31C103M#ZS2	
		3.69	9.95	30	0.5	25x45	HU31C153M#YS6	
	15 000	3.62	9.77	30	0.5	30x35	HU31C153M#ZS4	
		3.62	9.77	30	0.5	35x30	HU31C153M#AS3	
		4.82	13.01	20	0.5	30x45	HU31C223M#ZS6	
	22 000	4.63	12.50	20	0.5	35x35	HU31C223M#AS4	
		6.38	17.23	15	0.5	35x50	HU31C333M#AS7	
	33 000	47 000	3.52	9.50	15	0.5	35x50	HU31C473M#AS7
	25 VDC Code: 1E Surge Voltage 32 VDC	3 300	1.53	4.13	130	0.4	22x25	HU31E332M#XS2
			1.94	5.23	90	0.4	22x30	HU31E472M#XS3
4 700		1.85	4.99	90	0.4	25x25	HU31E472M#YS2	
		2.49	6.71	65	0.4	22x35	HU31E682M#XS4	
		2.45	6.62	65	0.4	25x30	HU31E682M#YS3	
		2.45	6.62	65	0.4	30x25	HU31E682M#ZS2	
10 000		3.33	9.00	45	0.4	22x45	HU31E103M#XS6	
		3.15	8.49	45	0.4	25x35	HU31E103M#YS4	
		3.15	8.49	45	0.4	30x30	HU31E103M#ZS3	
		3.15	8.49	45	0.4	35x25	HU31E103M#AS2	
15 000		4.13	11.14	30	0.4	25x45	HU31E153M#YS6	
		4.05	10.93	30	0.4	30x35	HU31E153M#ZS4	
		4.05	10.93	30	0.4	35x30	HU31E153M#AS3	
22 000		5.38	14.52	20	0.4	30x45	HU31E223M#ZS6	
		5.38	14.52	20	0.4	35x40	HU31E223M#AS5	
33 000		7.13	19.25	15	0.4	35x50	HU31E333M#AS7	
35 VDC Code: 1V Surge Voltage 44 VDC		2 200	1.33	3.59	160	0.35	22x25	HU31V222M#XS2
			1.74	4.69	105	0.35	22x30	HU31V332M#XS3
	3 300	1.66	4.48	105	0.35	25x25	HU31V332M#YS2	
		2.21	5.97	75	0.35	22x35	HU31V472M#XS4	
	4 700	2.18	5.88	75	0.35	25x25	HU31V472M#YS2	
		2.18	5.88	75	0.35	30x25	HU31V472M#ZS2	
		2.30	6.21	65	0.35	25x30	HU31V562M#YS3	
	5 600	3.05	8.23	55	0.35	22x50	HU31V682M#XS7	
		2.76	7.45	55	0.35	25x40	HU31V682M#YS5	
		2.76	7.45	55	0.35	30x30	HU31V682M#ZS3	
	8 200	3.03	8.17	45	0.35	25x40	HU31V822M#YS5	
		3.03	8.17	45	0.35	35x25	HU31V822M#AS2	
	10 000	3.76	10.16	35	0.35	25x50	HU31V103M#YS7	
		3.53	9.53	35	0.35	30x35	HU31V103M#ZS4	
		3.53	9.53	35	0.35	35x30	HU31V103M#AS3	
	15 000	4.93	13.31	25	0.35	30x50	HU31V153M#ZS7	
		4.76	12.86	25	0.35	35x40	HU31V153M#AS5	
	22 000	6.25	16.87	20	0.35	35x50	HU31V223M#AS7	

Additional designs on request · Weitere Designs auf Anfrage

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 fixing code in the product code
50 VDC Code: 1H Surge Voltage 63 VDC	1 500	1.19	3.21	215	0.3	22x25	HU31H152M#XS2
		1.53	4.13	145	0.3	22x30	HU31H222M#XS3
	2 200	1.46	3.95	145	0.3	25x25	HU31H222M#YS2
		2.00	5.41	100	0.3	22x35	HU31H332M#XS4
		1.96	5.29	100	0.3	25x30	HU31H332M#YS3
	3 300	1.97	5.32	100	0.3	30x25	HU31H332M#ZS2
		2.64	7.13	70	0.3	22x45	HU31H472M#XS6
		2.46	6.65	70	0.3	25x35	HU31H472M#YS4
		2.49	6.71	70	0.3	30x30	HU31H472M#ZS3
	6 800	3.34	9.03	50	0.3	25x50	HU31H682M#YS7
		3.15	8.49	50	0.3	30x35	HU31H682M#ZS4
		3.15	8.49	50	0.3	35x30	HU31H682M#AS3
	10 000	4.20	11.35	35	0.35	30x45	HU31H103M#ZS6
		4.20	11.35	35	0.35	35x40	HU31H103M#AS5
		5.58	15.06	25	0.35	35x50	HU31H153M#AS7
63 VDC Code: 1J Surge Voltage 79 VDC	1 000	1.07	2.88	265	0.25	22x25	HU31J102M#XS2
		1.39	3.74	180	0.25	22x30	HU31J152M#XS3
	1 500	1.32	3.56	180	0.25	25x25	HU31J152M#YS2
		1.79	4.84	120	0.25	22x35	HU31J222M#XS4
		1.74	4.69	120	0.25	25x30	HU31J222M#YS2
	2 200	1.76	4.75	120	0.25	30x25	HU31J222M#ZS2
		2.42	6.53	80	0.25	25x40	HU31J332M#YS5
		2.28	6.15	80	0.25	30x30	HU31J332M#ZS3
		2.41	6.50	80	0.25	30x35	HU31J332M#ZS4
	4 700	3.05	8.23	60	0.25	25x50	HU31J472M#YS7
		2.86	7.72	60	0.25	30x35	HU31J472M#ZS4
	5 600	3.28	8.85	50	0.25	35x35	HU31J562M#AS4
	6 800	3.78	10.22	40	0.25	30x45	HU31J682M#ZS6
		3.78	10.22	40	0.25	35x40	HU31J682M#AS5
	8 200	4.35	11.73	35	0.25	35x45	HU31J822M#AS6
10 000	4.98	13.45	30	0.35	35x50	HU31J103M#AS7	
80 VDC Code: 1K Surge Voltage 100 VDC	1 000	1.27	3.42	230	0.2	22x30	HU31K102M#XS3
		1.21	3.27	230	0.2	25x25	HU31K102M#YS2
	1 500	1.65	4.46	155	0.2	22x35	HU31K152M#XS4
		1.63	4.40	155	0.2	25x30	HU31K152M#YS3
		1.63	4.40	155	0.2	30x25	HU31K152M#ZS2
	2 200	2.11	5.70	105	0.2	25x40	HU31K222M#YS5
		2.08	5.61	105	0.2	30x30	HU31K222M#ZS3
		2.08	5.61	105	0.2	35x25	HU31K222M#AS2
		2.85	7.69	70	0.2	25x50	HU31K332M#YS7
	3 300	2.74	7.40	70	0.2	30x40	HU31K332M#ZS5
		2.68	7.25	70	0.2	35x30	HU31K332M#AS3
	4 700	3.65	9.86	50	0.25	30x50	HU31K472M#ZS7
		3.53	9.53	50	0.25	35x40	HU31K472M#AS5
	6 800	4.60	12.41	35	0.25	35x50	HU31K682M#AS7

Additional designs on request · Weitere Designs auf Anfrage

Rated VoltageCode (Surge Voltage) V_r [V DC]	Capacitance C_r [μ F]	Ripple Current at 105°C/120Hz I_r [A RMS]	Ripple Current at 40°C/120Hz [A RMS]	ESR (typ) at 20°C/100Hz [m Ω]	Dissipation Factor at 20°C/100Hz Tan δ	DxL [mm]	Product Code # = variable value, see fixing code in the product code
100 VDC Code: 2A Surge Voltage 125 VDC	560	0.89	2.41	325	0.2	22x25	HU32A561M#XS2
	1 000	1.27	3.42	180	0.2	22x30	HU32A102M#XS3
		1.21	3.27	180	0.2	25x25	HU32A102M#YS2
	1 500	1.73	4.66	130	0.2	22x40	HU32A152M#XS5
		1.73	4.66	130	0.2	25x35	HU32A152M#YS4
		1.63	4.40	130	0.2	30x25	HU32A152M#ZS2
		1.89	5.11	130	0.2	30x40	HU32A152M#ZS5
	2 200	2.23	6.03	90	0.2	25x45	HU32A222M#YS6
		1.87	5.05	90	0.2	30x30	HU32A222M#ZS3
	3 300	2.95	7.96	60	0.2	30x45	HU32A332M#ZS6
		2.83	7.63	60	0.2	35x35	HU32A332M#AS4
	4 700	3.70	9.98	45	0.25	35x45	HU32A472M#AS6
160 VDC Code: 2C Surge Voltage 200 VDC	330	1.08	2.91	430	0.15	22x25	HU32C331M#XS2
	390	1.21	3.27	365	0.15	22x30	HU32C391M#XS3
		1.20	3.24	365	0.15	25x25	HU32C391M#YS2
	470	1.33	3.59	305	0.15	22x30	HU32C471M#XS3
		1.31	3.53	305	0.15	25x25	HU32C471M#YS2
	560	1.54	4.16	255	0.15	22x35	HU32C561M#XS4
		1.54	4.16	255	0.15	25x30	HU32C561M#YS3
		1.54	4.16	255	0.15	30x25	HU32C561M#ZS2
	680	1.78	4.81	210	0.15	22x40	HU32C681M#XS5
		1.69	4.57	210	0.15	30x25	HU32C681M#ZS2
	820	2.05	5.52	175	0.15	22x45	HU32C821M#XS6
		1.97	5.32	175	0.15	30x30	HU32C821M#ZS3
	1 000	2.37	6.39	145	0.15	25x45	HU32C102M#YS6
		2.30	6.21	145	0.15	30x35	HU32C102M#ZS4
		2.18	5.88	145	0.15	35x25	HU32C102M#AS2
	1 200	2.71	7.31	120	0.15	25x50	HU32C122M#YS7
		2.52	6.80	120	0.15	30x35	HU32C122M#ZS4
		2.52	6.80	120	0.15	35x30	HU32C122M#AS3
1 500	3.08	8.32	95	0.15	30x45	HU32C152M#ZS6	
	2.99	8.08	95	0.15	35x35	HU32C152M#AS4	
1 800	3.40	9.18	80	0.15	35x40	HU32C182M#AS5	
	3.44	9.30	80	0.15	40x36	HU32C182M#BS4	
180 VDC Code: 2P Surge Voltage 225 VDC	270	0.95	2.55	460	0.15	22x25	HU32P271M#XS2
	330	1.03	2.79	375	0.15	22x25	HU32P331M#XS2
		1.11	3.00	375	0.15	22x30	HU32P331M#XS3
		1.10	2.97	375	0.15	25x25	HU32P331M#YS2
	390	1.21	3.27	320	0.15	22x30	HU32P391M#XS3
		1.20	3.24	320	0.15	25x25	HU32P391M#YS2
	470	1.32	3.56	265	0.15	22x30	HU32P471M#XS3
		1.31	3.53	265	0.15	25x25	HU32P471M#YS2
		1.41	3.80	265	0.15	25x30	HU32P471M#YS3

Additional designs on request · Weitere Designs auf Anfrage

HU3 · Snap-In · 6000 h/105 °C

Rated VoltageCode (Surge Voltage) V_r [V DC]	Capacitance C_r [μ F]	Ripple Current at 105°C/120Hz I_r [A RMS]	Ripple Current at 40°C/120Hz [A RMS]	ESR (typ) at 20°C/100Hz [m Ω]	Dissipation Factor at 20°C/100Hz Tan δ	DxL [mm]	Product Code # = variable value, see fixing code in the product code	
180 VDC Code: 2P Surge Voltage 225 VDC	560	1.53	4.13	225	0.15	22x35	HU32P561M#XS4	
		1.54	4.16	225	0.15	25x30	HU32P561M#YS3	
		1.54	4.16	225	0.15	30x25	HU32P561M#ZS2	
	680	1.77	4.78	185	0.15	22x40	HU32P681M#XS5	
		1.79	4.84	185	0.15	25x35	HU32P681M#YS4	
		1.69	4.57	185	0.15	30x25	HU32P681M#ZS2	
	820	2.04	5.49	155	0.15	22x45	HU32P821M#XS6	
		2.06	5.55	155	0.15	25x40	HU32P821M#YS5	
		1.97	5.32	155	0.15	30x30	HU32P821M#ZS3	
	1 000	2.37	6.39	125	0.15	25x45	HU32P102M#YS6	
		2.30	6.21	125	0.15	30x35	HU32P102M#ZS4	
		2.30	6.21	125	0.15	35x30	HU32P102M#AS3	
	1 200	2.63	7.10	105	0.15	30x40	HU32P122M#ZS5	
		2.52	6.80	105	0.15	35x30	HU32P122M#AS3	
	1 500	3.07	8.29	85	0.15	30x45	HU32P152M#ZS6	
		3.20	8.64	85	0.15	30x50	HU32P152M#ZS7	
		2.99	8.08	85	0.15	35x35	HU32P152M#AS4	
	1 800	3.40	9.18	70	0.15	35x40	HU32P182M#AS5	
		3.44	9.30	70	0.15	40x36	HU32P182M#BS4	
	200 VDC Code: 2D Surge Voltage 250 VDC	220	1.01	2.73	485	0.15	22x25	HU32D221M#XS2
		270	1.13	3.06	395	0.15	22x25	HU32D271M#XS2
330		1.14	3.09	325	0.15	22x25	HU32D331M#XS2	
		1.33	3.59	325	0.15	22x30	HU32D331M#XS3	
390		1.32	3.56	325	0.15	25x25	HU32D331M#YS2	
		1.32	3.56	275	0.15	22x30	HU32D391M#XS3	
		1.53	4.13	275	0.15	22x35	HU32D391M#XS4	
470		1.44	3.89	275	0.15	25x25	HU32D391M#YS2	
		1.54	4.16	230	0.15	22x35	HU32D471M#XS4	
		1.95	5.26	230	0.15	22x50	HU32D471M#XS7	
560		1.44	3.89	230	0.15	25x25	HU32D471M#YS2	
		1.69	4.57	230	0.15	30x25	HU32D471M#ZS2	
		1.77	4.78	190	0.15	22x40	HU32D561M#XS5	
680		1.67	4.51	190	0.15	25x30	HU32D561M#YS3	
		1.67	4.51	190	0.15	30x25	HU32D561M#ZS2	
		1.95	5.26	160	0.15	22x40	HU32D681M#XS5	
820		1.96	5.29	160	0.15	25x35	HU32D681M#YS4	
		1.86	5.02	160	0.15	30x25	HU32D681M#ZS2	
		2.26	6.09	130	0.15	25x40	HU32D821M#YS5	
1 000		2.17	5.85	130	0.15	30x30	HU32D821M#ZS3	
		2.16	5.82	130	0.15	35x25	HU32D821M#AS2	
	2.61	7.04	110	0.15	25x45	HU32D102M#YS6		
1 200	2.52	6.80	110	0.15	30x35	HU32D102M#ZS4		
	2.76	7.45	110	0.15	35x30	HU32D102M#AS3		
1 200	2.89	7.81	90	0.15	30x40	HU32D122M#ZS5		
	2.76	7.45	90	0.15	35x30	HU32D122M#AS3		

Additional designs on request · Weitere Designs auf Anfrage

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200 VDC Code: 2D Surge Voltage 250 VDC	1 500	3.40	9.18	75	0.15	35x40	HU32D152M#AS5	
		3.72	10.04	75	0.15	35x45	HU32D152M#AS6	
		3.77	10.19	75	0.15	40x36	HU32D152M#BS4	
	1 800	3.88	10.48	60	0.15	35x45	HU32D182M#AS6	
		4.41	11.91	60	0.15	35x50	HU32D182M#AS7	
		4.28	11.55	60	0.15	40x41	HU32D182M#BS5	
	2 200	4.07	10.99	50	0.15	35x50	HU32D222M#AS7	
250 VDC Code: 2E Surge Voltage 300 VDC	220	1.01	2.73	445	0.15	22x25	HU32E221M#XS2	
		1.10	2.97	445	0.15	22x30	HU32E221M#XS2	
		1.08	2.91	445	0.15	25x25	HU32E221M#YS2	
	270	1.28	3.45	360	0.15	22x35	HU32E271M#XS4	
		1.19	3.21	360	0.15	25x25	HU32E271M#YS2	
	330	1.41	3.80	295	0.15	22x35	HU32E331M#XS4	
		1.31	3.53	295	0.15	25x25	HU32E331M#YS2	
		1.41	3.80	295	0.15	30x25	HU32E331M#ZS2	
	390	1.63	4.40	250	0.15	22x40	HU32E391M#XS5	
		1.61	4.34	250	0.15	25x35	HU32E391M#YS4	
		1.53	4.13	250	0.15	30x25	HU32E391M#ZS2	
	470	1.94	5.23	210	0.15	22x50	HU32E471M#XS7	
		1.86	5.02	210	0.15	25x40	HU32E471M#YS5	
		1.79	4.84	210	0.15	30x30	HU32E471M#ZS3	
		1.78	4.81	210	0.15	35x25	HU32E471M#AS2	
	560	2.12	5.73	175	0.15	25x45	HU32E561M#YS6	
		2.06	5.55	175	0.15	30x35	HU32E561M#ZS4	
		1.96	5.29	175	0.15	35x25	HU32E561M#AS2	
	680	2.44	6.59	145	0.15	25x50	HU32E681M#YS7	
		2.27	6.12	145	0.15	30x35	HU32E681M#ZS4	
		2.27	6.12	145	0.15	35x30	HU32E681M#AS3	
	820	2.73	7.37	120	0.15	30x45	HU32E821M#ZS6	
		2.65	7.16	120	0.15	35x35	HU32E821M#AS4	
	1 000	3.04	8.20	100	0.15	35x40	HU32E102M#AS5	
		3.08	8.32	100	0.15	40x36	HU32E102M#BS4	
	1 200	3.45	9.33	85	0.15	35x45	HU32E122M#AS6	
		3.49	9.41	85	0.15	40x41	HU32E122M#BS5	
	1 500	3.86	10.42	65	0.15	35x45	HU32E152M#AS6	
		4.03	10.87	65	0.15	35x50	HU32E152M#AS7	
	1 800	4.62	12.47	55	0.15	40x51	HU32E182M#BS7	
	2 200	4.91	13.25	45	0.15	40x60	HU32E222M#BS9	
	300 VDC Code: 300V Surge Voltage 350 VDC	680	2.43	6.56	180	0.15	30x50	HU3300V681M#ZS7
		750	2.55	6.89	165	0.15	30x50	HU3300V751M#ZS7
1 000		2.74	7.40	165	0.15	35x50	HU3300V102M#AS7	
2 000		4.68	12.62	55	0.15	40x85	HU3300V202M#BS14	
2 200		5.23	14.11	40	0.15	40x100	HU3300V222M#BS17	
	6.19	16.72	40	0.15	40x110	HU3300V222M#BS19		

Additional designs on request · Weitere Designs auf Anfrage

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 fixing code in the product code
350 VDC Code: 2V Surge Voltage 400 VDC	82	0.52	1.40	1126	0.15	22x25	HU32V820M#XS2
	100	0.62	1.66	924	0.15	22x30	HU32V101M#XS3
		0.61	1.63	924	0.15	25x25	HU32V101M#YS2
	120	0.63	1.69	770	0.15	22x25	HU32V121M#XS2
		0.67	1.81	770	0.15	22x30	HU32V121M#XS3
		0.66	1.78	770	0.15	25x25	HU32V121M#YS2
	150	0.75	2.02	615	0.15	22x30	HU32V151M#XS3
		0.79	2.14	615	0.15	22x35	HU32V151M#XS4
		0.74	1.99	615	0.15	25x25	HU32V151M#YS2
	180	0.87	2.35	520	0.15	22x35	HU32V181M#XS4
		0.87	2.35	520	0.15	25x30	HU32V181M#YS3
		0.87	2.35	520	0.15	30x25	HU32V181M#ZS2
	220	1.06	2.85	450	0.15	22x45	HU32V221M#XS6
		1.01	2.73	450	0.15	25x35	HU32V221M#YS4
		0.96	2.58	450	0.15	30x25	HU32V221M#ZS2
	270	1.18	3.18	366	0.15	25x40	HU32V271M#YS5
		1.13	3.06	366	0.15	30x30	HU32V271M#ZS3
		1.12	3.03	366	0.15	35x25	HU32V271M#AS2
	330	1.36	3.68	299	0.15	25x45	HU32V331M#YS6
		1.32	3.56	299	0.15	30x35	HU32V331M#ZS4
		1.24	3.36	299	0.15	35x25	HU32V331M#AS2
	390	1.49	4.01	253	0.15	30x40	HU32V391M#ZS5
		1.43	3.86	253	0.15	35x30	HU32V391M#AS3
	470	1.65	4.46	210	0.15	35x35	HU32V471M#AS4
		1.76	4.75	210	0.15	40x36	HU32V471M#BS4
	560	1.96	5.29	181	0.15	30x50	HU32V561M#ZS7
		1.89	5.11	181	0.15	35x40	HU32V561M#AS5
		1.98	5.35	181	0.15	40x41	HU32V561M#BS5
1 000	2.85	7.69	90	0.15	35x51	HU32V102M#AS7	
400 VDC Code: 2G Surge Voltage 450 VDC	68	0.57	1.54	1300	0.15	22x25	HU32G680M#XS2
	82	0.66	1.78	1080	0.15	22x30	HU32G820M#XS3
		0.66	1.78	1080	0.15	25x25	HU32G820M#YS2
	100	0.63	1.69	890	0.15	22x25	HU32G101M#XS2
		0.74	1.99	890	0.15	22x30	HU32G101M#XS3
		0.73	1.96	890	0.15	25x25	HU32G101M#YS2
	120	0.86	2.32	740	0.15	22x35	HU32G121M#XS4
		0.85	2.29	740	0.15	25x30	HU32G121M#YS3
		0.86	2.32	740	0.15	30x25	HU32G121M#ZS2
	150	0.87	2.35	590	0.15	22x35	HU32G151M#XS4
		0.87	2.35	590	0.15	25x30	HU32G151M#YS3
		0.87	2.35	590	0.15	30x25	HU32G151M#ZS2
	180	1.00	2.70	490	0.15	22x40	HU32G181M#XS5
		1.00	2.70	490	0.15	25x35	HU32G181M#YS4
		0.96	2.58	490	0.15	30x25	HU32G181M#ZS2
	1.11	3.00	490	0.15	35x25	HU32G181M#AS2	

Additional designs on request · Weitere Designs auf Anfrage

Rated VoltageCode (Surge Voltage) V_r [V DC]	Capacitance C_r [μ F]	Ripple Current at 105°C/120Hz I_r [A RMS]	Ripple Current at 40°C/120Hz [A RMS]	ESR (typ) at 20°C/100Hz [m Ω]	Dissipation Factor at 20°C/100Hz Tan δ	DxL [mm]	Product Code # = variable value, see fixing code in the product code	
400 VDC Code: 2G Surge Voltage 450 VDC	220	1.17	3.15	400	0.15	25x40	HU32G221M#YS5	
		1.22	3.30	400	0.15	30x30	HU32G221M#ZS3	
		1.12	3.03	400	0.15	35x25	HU32G221M#AS2	
	270	1.35	3.65	330	0.15	25x45	HU32G271M#YS6	
		1.31	3.53	330	0.15	30x35	HU32G271M#ZS4	
		1.24	3.36	330	0.15	35x25	HU32G271M#AS2	
	330	1.51	4.07	270	0.15	30x40	HU32G331M#ZS5	
		1.73	4.66	270	0.15	30x45	HU32G331M#ZS6	
		1.45	3.92	270	0.15	35x30	HU32G331M#AS3	
		1.67	4.51	270	0.15	35x35	HU32G331M#AS4	
	390	1.96	5.29	230	0.15	30x50	HU32G391M#ZS7	
		1.66	4.48	230	0.15	35x35	HU32G391M#AS4	
		1.90	5.14	230	0.15	35x40	HU32G391M#AS5	
		1.91	5.17	230	0.15	40x36	HU32G391M#BS4	
	470	2.17	5.85	190	0.15	35x40	HU32G471M#AS5	
		2.26	6.09	190	0.15	35x50	HU32G471M#AS7	
		2.18	5.88	190	0.15	40x41	HU32G471M#BS5	
	560	2.43	6.56	160	0.15	30x55	HU32G561M#ZS8	
		2.17	5.85	160	0.15	35x45	HU32G561M#AS6	
		2.45	6.62	160	0.15	35x50	HU32G561M#AS7	
		2.29	6.18	181	0.15	40x36	HU32G561M#BS4	
	680	2.65	7.16	130	0.15	35x50	HU32G681M#AS7	
		2.90	7.84	130	0.15	35x60	HU32G681M#AS9	
	820	3.18	8.58	110	0.15	35x60	HU32G821M#AS9	
		3.27	8.82	110	0.15	40x61	HU32G821M#BS9	
	1 000	3.63	9.80	80	0.15	35x60	HU32G102M#AS92P	
		3.52	9.50	90	0.15	40x76	HU32G102M#BS12	
		3.80	10.25	90	0.15	41x81	HU32G102M#BS13	
	1 200	3.75	10.13	75	0.15	40x75	HU32G122M#BS12	
		3.61	9.74	75	0.15	40x86	HU32G122M#BS14	
	1 500	4.95	13.37	68	0.15	35x100	HU32G152M#AS17	
		4.95	13.37	60	0.15	40x100	HU32G152M#BS17	
	420 VDC Code: 420V Surge Voltage 470 VDC	47	0.42	1.13	1880	0.15	22x25	HU3420V470M#XS2
		68	0.55	1.49	1300	0.15	22x30	HU3420V680M#XS3
		82	0.57	1.54	1080	0.15	22x25	HU3420V820M#XS2
			0.59	1.60	1080	0.15	22x30	HU3420V820M#XS3
100		0.59	1.60	1080	0.15	25x25	HU3420V820M#YS2	
		0.67	1.81	890	0.15	22x30	HU3420V101M#XS3	
120		0.67	1.81	890	0.15	25x25	HU3420V101M#YS2	
		0.78	2.11	740	0.15	22x35	HU3420V121M#XS4	
150		0.73	1.96	740	0.15	25x25	HU3420V121M#YS2	
		0.77	2.08	740	0.15	30x25	HU3420V121M#ZS2	
150		0.91	2.47	590	0.15	22x40	HU3420V151M#XS5	
		0.87	2.35	590	0.15	25x30	HU3420V151M#YS3	

Additional designs on request · Weitere Designs auf Anfrage

Rated VoltageCode (Surge Voltage) V_r [V DC]	Capacitance C_r [μ F]	Ripple Current at 105°C/120Hz I_r [A RMS]	Ripple Current at 40°C/120Hz [A RMS]	ESR (typ) at 20°C/100Hz [m Ω]	Dissipation Factor at 20°C/100Hz Tan δ	DxL [mm]	Product Code # = variable value, see fixing code in the product code
420 VDC Code: 420V Surge Voltage 470 VDC	150	0.87	2.35	590	0.15	30x25	HU3420V151M#ZS2
		1.00	2.70	490	0.15	25x35	HU3420V181M#YS4
	180	0.96	2.58	490	0.15	30x25	HU3420V181M#ZS2
		1.00	2.70	490	0.15	30x30	HU3420V181M#ZS3
		0.99	2.67	490	0.15	35x25	HU3420V181M#AS2
		1.22	3.30	400	0.15	25x45	HU3420V221M#YS6
	220	1.12	3.03	400	0.15	30x30	HU3420V221M#ZS3
		1.16	3.12	400	0.15	30x35	HU3420V221M#ZS4
		1.12	3.03	400	0.15	35x25	HU3420V221M#AS2
		1.31	3.53	330	0.15	30x35	HU3420V271M#ZS4
	270	1.34	3.62	330	0.15	30x40	HU3420V271M#ZS5
		1.31	3.53	330	0.15	35x30	HU3420V271M#AS3
		1.35	3.65	330	0.15	35x35	HU3420V271M#AS4
		1.58	4.28	270	0.15	30x45	HU3420V331M#ZS6
	330	1.64	4.43	270	0.15	30x50	HU3420V331M#ZS7
		1.53	4.13	270	0.15	35x35	HU3420V331M#AS4
		1.55	4.19	270	0.15	35x40	HU3420V331M#AS5
		1.74	4.69	230	0.15	35x40	HU3420V391M#AS5
	390	1.77	4.78	230	0.15	35x45	HU3420V391M#AS6
		2.04	5.49	140	0.15	35x50	HU3420V471M#AS7
450 VDC Code: 2W Surge Voltage 500 VDC	47	0.46	1.25	1880	0.15	22x25	HU32W470M#XS2
		0.52	1.40	1300	0.15	22x25	HU32W680M#XS2
	68	0.61	1.63	1300	0.15	22x30	HU32W680M#XS3
		0.59	1.60	1300	0.15	25x25	HU32W680M#YS2
	82	0.61	1.63	1080	0.15	22x30	HU32W820M#XS3
		0.70	1.90	1080	0.15	22x35	HU32W820M#XS4
		0.61	1.63	1080	0.15	25x25	HU32W820M#YS2
		0.70	1.90	1080	0.15	25x30	HU32W820M#YS3
	100	0.72	1.93	890	0.15	22x35	HU32W101M#XS4
		0.81	2.20	890	0.15	22x40	HU32W101M#XS5
		0.70	1.90	890	0.15	25x30	HU32W101M#YS3
		0.81	2.20	890	0.15	25x35	HU32W101M#YS4
		0.78	2.11	890	0.15	30x25	HU32W101M#ZS2
		0.83	2.23	740	0.15	22x40	HU32W121M#XS5
	120	0.94	2.52	740	0.15	22x45	HU32W121M#XS6
		0.78	2.11	740	0.15	25x30	HU32W121M#YS3
		0.88	2.38	740	0.15	25x35	HU32W121M#YS4
		0.78	2.11	740	0.15	30x25	HU32W121M#ZS2
		0.90	2.44	740	0.15	30x30	HU32W121M#ZS3
		0.90	2.44	740	0.15	35x25	HU32W121M#AS2
150	0.97	2.61	590	0.15	25x40	HU32W151M#YS5	
	1.10	2.97	590	0.15	25x45	HU32W151M#YS6	
	0.92	2.49	590	0.15	30x30	HU32W151M#ZS3	
	1.06	2.85	590	0.15	30x35	HU32W151M#ZS4	

Additional designs on request · Weitere Designs auf Anfrage

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 fixing code in the product code
450 VDC Code: 2W Surge Voltage 500 VDC	150	0.92	2.49	590	0.15	35x25	HU32W151M#AS3
		1.06	2.85	590	0.15	35x30	HU32W151M#AS3
	180	1.11	3.00	490	0.15	25x45	HU32W181M#YS6
		1.25	3.39	490	0.15	25x50	HU32W181M#YS7
		1.01	2.73	490	0.15	30x30	HU32W181M#ZS3
		1.17	3.15	490	0.15	30x35	HU32W181M#ZS4
		1.01	2.73	490	0.15	35x25	HU32W181M#AS2
		1.17	3.15	490	0.15	35x30	HU32W181M#AS3
	220	1.18	3.18	400	0.15	30x35	HU32W221M#ZS4
		1.34	3.62	400	0.15	30x40	HU32W221M#ZS5
		1.19	3.21	400	0.15	35x30	HU32W221M#AS3
		1.36	3.68	400	0.15	35x35	HU32W221M#AS4
	270	1.43	3.86	330	0.15	30x45	HU32W271M#ZS6
		1.63	4.40	330	0.15	30x50	HU32W271M#ZS7
		1.51	4.07	330	0.15	35x35	HU32W271M#AS4
		1.57	4.25	330	0.15	35x40	HU32W271M#AS5
	330	1.60	4.31	270	0.15	35x40	HU32W331M#AS5
		1.80	4.87	270	0.15	35x45	HU32W331M#AS6
	390	1.80	4.87	230	0.15	35x45	HU32W391M#AS6
		2.05	5.52	230	0.15	35x50	HU32W391M#AS7
	470	2.24	6.06	140	0.15	35x50	HU32W471M#AS7
		2.33	6.30	140	0.15	35x55	HU32W471M#AS8
	560	2.55	6.89	160	0.15	35x60	HU32W561M#AS9
		2.70	7.28	160	0.15	40x61	HU32W561M#BS9
		2.84	7.66	159	0.15	40x75	HU32W561M#BS12
	680	2.89	7.81	130	0.15	35x60	HU32W681M#AS9
		3.01	8.14	130	0.15	35x75	HU32W681M#AS12
		3.06	8.26	130	0.15	40x61	HU32W681M#BS9
		3.26	8.79	128	0.15	35x81	HU32W751M#AS13
	750	3.01	8.14	128	0.15	40x61	HU32W751M#BS11
		3.37	9.09	128	0.15	40x81	HU32W751M#BS13
		3.39	9.15	110	0.15	35x80	HU32W821M#AS13
	820	2.84	7.66	110	0.15	40x76	HU32W821M#BS12
		3.43	9.27	110	0.15	40x91	HU32W821M#BS15
		3.80	10.25	100	0.15	40x76	HU32W102M#BS12
	1 200	3.80	10.25	70	0.15	40x100	HU32W122M#BS17
3.64		9.83	83	0.15	41x86	HU32W122M#BS14	
3.97		10.72	69	0.15	40x96	HU32W132M#BS16	
500 VDC Code: 2H Surge Voltage 550 VDC	39	0.39	1.04	2440	0.2	22x30	HU32H390M#XS3
	47	0.45	1.22	2030	0.2	22x35	HU32H470M#XS4
	56	0.52	1.40	1700	0.2	22x40	HU32H560M#XS5
	68	0.59	1.60	1400	0.2	22x45	HU32H680M#XS6
		0.54	1.46	1400	0.2	30x25	HU32H680M#ZS2

Additional designs on request · Weitere Designs auf Anfrage

HU3 · Snap-In · 6000 h/105 °C

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 fixing code in the product code
500 VDC Code: 2H Surge Voltage 550 VDC	82	0.68	1.84	1165	0.2	22x45	HU32H820M#XS5
		0.68	1.84	1165	0.2	22x50	HU32H820M#XS7
		0.64	1.72	1165	0.2	25x40	HU32H820M#YS5
		0.63	1.69	1165	0.2	30x30	HU32H820M#ZS3
		0.62	1.66	1165	0.2	35x25	HU32H820M#AS2
	100	0.74	1.99	960	0.2	25x45	HU32H101M#YS6
		0.73	1.96	960	0.2	30x35	HU32H101M#ZS4
		0.73	1.96	960	0.2	35x30	HU32H101M#AS3
	120	0.85	2.29	800	0.2	25x50	HU32H121M#YS7
		0.79	2.14	800	0.2	30x35	HU32H121M#ZS4
		0.84	2.26	800	0.2	30x40	HU32H121M#ZS5
		0.79	2.14	800	0.2	35x30	HU32H121M#AS3
	150	0.95	2.55	640	0.2	25x50	HU32H151M#YS7
		0.94	2.52	640	0.2	30x40	HU32H151M#ZS5
		0.97	2.61	640	0.2	30x45	HU32H151M#ZS6
		0.94	2.52	640	0.2	35x35	HU32H151M#AS4
	180	1.11	3.00	535	0.2	30x50	HU32H181M#ZS7
		1.07	2.88	535	0.2	35x40	HU32H181M#AS5
	220	1.18	3.18	434	0.2	35x40	HU32H221M#AS5
		1.23	3.33	434	0.2	35x45	HU32H221M#AS6
	250	1.36	3.68	390	0.2	30x55	HU32H251M#ZS8
	270	1.42	3.83	360	0.2	35x50	HU32H271M#AS7
	330	1.57	4.25	290	0.2	35x50	HU32H331M#AS7
		1.68	4.54	290	0.2	35x60	HU32H331M#AS9
	390	1.83	4.93	245	0.2	35x60	HU32H391M#AS9
		1.90	5.14	245	0.2	35x75	HU32H391M#AS12
	470	1.87	5.05	210	0.2	35x60	HU32H471M#AS9
		2.17	5.85	210	0.2	35x85	HU32H471M#AS14
		2.09	5.64	210	0.2	40x61	HU32H471M#BS9
		2.17	5.85	210	0.2	40x76	HU32H471M#BS12
	560	2.42	6.53	188	0.2	40x81	HU32H561M#BS13
	680	2.67	7.22	140	0.2	40x81	HU32H681M#BS13
	820	3.21	8.67	128	0.2	40x101	HU32H821M#BS17
	1 000	3.78	10.22	100	0.2	50x85	HU32H821M#CS14

> Ripple Current Multiplier · Wechselstrommultiplikator

Frequency [Hz]		50/60	120	300	1k	≥ 10k	Forced cooling [m/sec]	v < 1.0	v ≥ 1.0
Multiplier	16V – 100V	0.70	1.00	1.10	1.20	1.20	Multiplier	1.0	1.1
	160V – 500V	0.70	1.00	1.18	1.34	1.45			

Temperature [°C]	40	45	50	55	60	65	70	75	80	85	90	95	100	105
Multiplier	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.0	1.9	1.8	1.5	1.2	1,1	1.0

Additional designs on request · Weitere Designs auf Anfrage

> Life Time Table · Brauchbarkeitsdauer – Tabelle

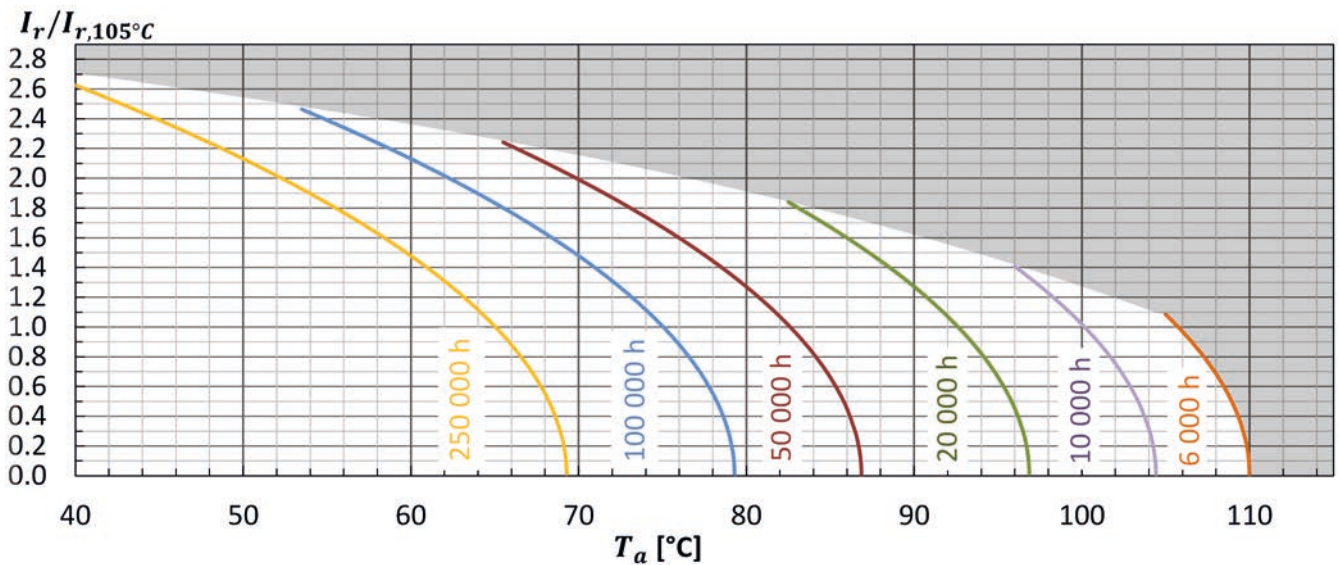
HU3	Useful life as function of ambient temperature and ripple current													
	I_r at 105°C	x 1.0	x 1.2	x 1.5	x 1.8	x 1.9	x 2.0	x 2.1	x 2.2	x 2.3	x 2.4	x 2.5	x 2.6	x 2.7
$T_a = 40°C$	250	250	250	250	250	250	250	250	250	250	250	250	250	214
$T_a = 45°C$	250	250	250	250	250	250	250	250	250	250	245	203	166	
$T_a = 50°C$	250	250	250	250	250	250	250	250	222	186	155	128		
$T_a = 55°C$	250	250	250	250	227	195	166	140	118	98				
$T_a = 60°C$	250	250	243	165	143	123	105	88	74					
$T_a = 65°C$	250	211	154	104	90	78	66	56						
$T_a = 70°C$	158	133	97	66	57	49	42							
$T_a = 75°C$	100	84	61	41	36	31								
$T_a = 80°C$	63	53	39	26	22									
$T_a = 85°C$	40	33	24	16										
$T_a = 90°C$	25	21	15											
$T_a = 95°C$	16	13												
$T_a = 100°C$	10													
$T_a = 105°C$	6													

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 Kategorie-temperatur $I_{r, 105°C, 120Hz}$



> Life Time Tests and Requirements · Anforderungen Brauchbarkeitsdauer

Life time test	Test procedure	Life time criteria
Endurance test	$T_a = 105°C$; V_r, I_r applied 4000 hours	$\Delta C/C \leq 15\%$ (of initial value) $\tan\delta \leq 175\%$ (of specified value) $I_L \leq$ specified value
Useful life	$T_a = 105°C$; V_r, I_r applied 6000 hours	$\Delta C/C \leq 20\%$ (of initial value) $\tan\delta < 200\%$ (of specified value) $I_L \leq$ specified value

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