

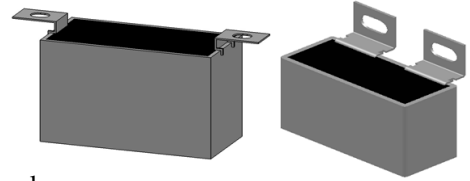


# USM88 Series

# IGBT Snubber Capacitor (Dry Type, BOX/Lug Screw)

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IGBT Snubber, AC Filter, DC Filter, Power Resoance



## ❖ General Description

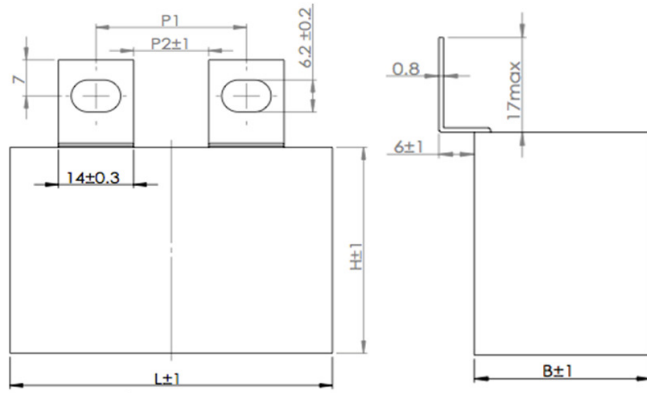
Standard Reference	IEC 61071
Climatic Category	40 / 85 / 56
Dielectric Material	Self-Healing Metallized Polypropylene
Case Type	Palstic case, Resin filled, UL94V-0
Terminals Type	Lug terminals
Capacitance Range	Cn: 0.005 $\mu$ F ~ 10.0 $\mu$ F (1kHz , 20 $^{\circ}$ C )
Capacitance Tolerance	J ( $\pm$ 5%), K( $\pm$ 10%)
Dissipation Factor	tg $\delta$ : $\leq$ 0.0006 (1kHz , 20 $^{\circ}$ C )
Insulation Resistance	IR x Cn : $\geq$ 30000s but need not exceed 30GW (100Vdc, 60s, 20 $^{\circ}$ C )
Rated Voltage	Un : 600VDC ~ 4000VDC
Test voltage U <sub>TR</sub>	U <sub>TR</sub> : 1.5Un (10s , 20 $^{\circ}$ C) – Test voltage between both terminals
Test voltage U <sub>TC</sub>	U <sub>TC</sub> : 3000Vac (10s , 20 $^{\circ}$ C) – Test voltage between terminals with case
Operating Temperature	- 40 $^{\circ}$ C ~ 85 $^{\circ}$ C
Storage Temperature	- 40 $^{\circ}$ C ~ 85 $^{\circ}$ C
Lifetime Expectancy	100,000 hours (Un , 70 $^{\circ}$ C)
Applications	IGBT Snubber , AC Filter, DC Filter , Power Resoance
Remarks	RoHs Compliant on request. Add "R" to p/n. *Other capacitance, voltage and dimensions are available on request

## ❖ Part Number System

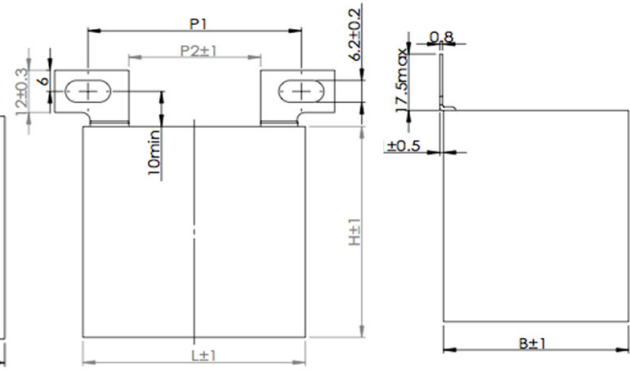
**EX: USM88-474J1200A4511**

<b>USM88</b>	-	<b>474</b>	<b>J</b>	<b>1200</b>	<b>#</b>	<b>45</b>	<b>#</b>
:	:	:	:	:	...	...	...
<b>Series</b>		<b>Capacitance</b>	<b>Tolerance</b>	<b>Voltage</b>	<b>Style</b>	<b>L</b>	<b>P2</b>
		474=0.47 $\mu$ F	J= $\pm$ 5%	VDC	See outline drawing	Length	Pitch
		105=1.0 $\mu$ F	K= $\pm$ 10%		A,B,C,D		

**Terminal Style A**

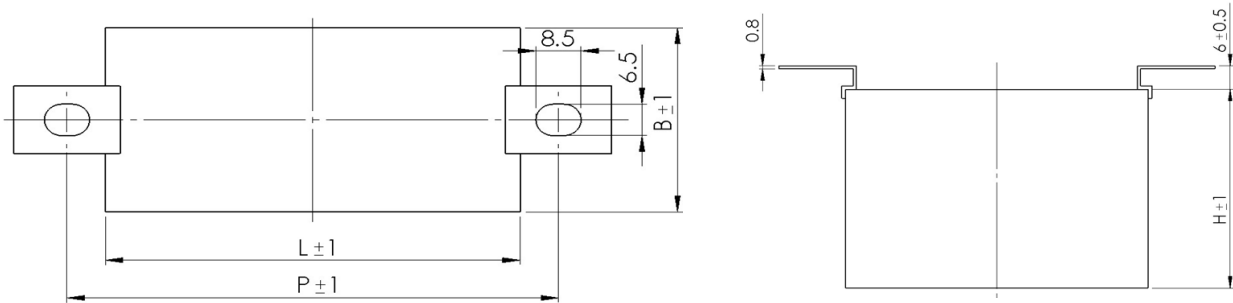


**Terminal Style B**



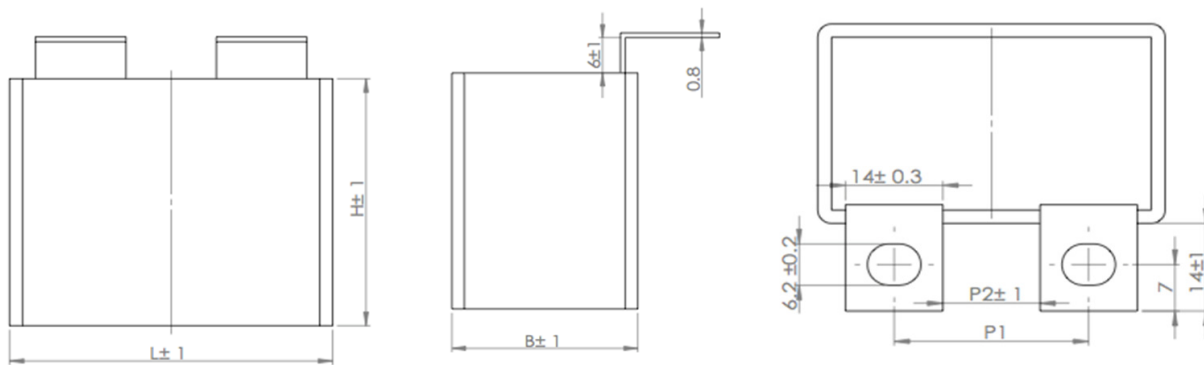
L	Style A (Output: M6)				L	Style B (Output: M6)			
	P2	P1	P2	P1		P2	P1	P2	P1
45	11	23~28	8	20~25	45	11	28~39	15	32~45
57.5	11	23~28	24	36~41	57.5	11	28~39	28	46~58

**Terminal Style C**



L	Style C (Output: M6)	
	P	
45	60~65	
57.5	75~80	

**Terminal Style D**



L	Style D (Output: M6)			
	P2	P1	P2	P1
45	11	23~28	8	20~25
57.5	11	23~28	24	36~41

❖ **Electrical Characteristics**

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Part Number	Cn	Un	ESL	dv/dt	I Peak	Irms max.	Dimension (mm)			
	μF	Vdc	nH	V/μs	Amps	A	L	B	H	Terminal Style
<b><i>Un 700VDC , Urms 400VAC</i></b>										
USM88-684J700#45#	0.68	700	24	400	272	15	45	26	29	A / B / C / D
USM88-105J700#45#	1.0	700	24	400	400	18	45	26	29	A / B / C / D
USM88-125J700#45#	1.2	700	24	400	480	20	45	26	29	A / B / C / D
USM88-155J700#45#	1.5	700	24	400	600	21	45	34	36	A / B / C / D
USM88-205J700#45#	2.0	700	24	400	800	22	45	34	36	A / B / C / D
USM88-225J700#45#	2.2	700	24	400	880	22	45	34	36	A / B / C / D
USM88-255J700#45#	2.5	700	24	400	1000	24	45	34	36	A / B / C / D
USM88-305J700#45#	3.0	700	24	400	1200	25	45	34	45	A / B / C / D
USM88-335J700#45#	3.3	700	24	400	1320	25	45	34	45	A / B / C / D
USM88-355J700#45#	3.5	700	24	400	1400	26	45	34	45	A / B / C / D
USM88-405J700#57.5#	4.0	700	28	300	1200	25	57.5	30	45	A / B / C / D
USM88-475J700#57.5#	4.7	700	28	300	1410	26	57.5	35	50	A / B / C / D
USM88-505J700#57.5#	5.0	700	28	300	1500	28	57.5	35	50	A / B / C / D
USM88-685J700#57.5#	6.8	700	28	300	2040	30	57.5	42.5	56	A / B / C / D
<b><i>Un 850VDC , Urms 450VAC</i></b>										
USM88-684J850#45#	0.68	850	24	450	306	15	45	26	29	A / B / C / D
USM88-105J850#45#	1.0	850	24	450	450	16	45	34	36	A / B / C / D
USM88-125J850#45#	1.2	850	24	450	540	17	45	34	36	A / B / C / D
USM88-155J850#45#	1.5	850	24	450	675	18	45	34	36	A / B / C / D
USM88-205J850#45#	2.0	850	24	450	900	20	45	34	36	A / B / C / D
USM88-225J850#45#	2.2	850	24	450	990	21	45	34	45	A / B / C / D
USM88-255J850#45#	2.5	850	24	450	1125	22	45	34	45	A / B / C / D
USM88-205J850#57.5#	2.0	850	28	350	700	19	57.5	30	45	A / B / C / D
USM88-305J850#57.5#	3.0	850	28	350	1050	22	57.5	30	45	A / B / C / D
USM88-405J850#57.5#	4.0	850	28	350	1400	23	57.5	35	50	A / B / C / D
USM88-475J850#57.5#	4.7	850	28	350	1645	24	57.5	35	50	A / B / C / D
USM88-505J850#57.5#	5.0	850	28	350	1750	25	57.5	42.5	56	A / B / C / D
USM88-565J850#57.5#	5.6	850	28	350	1960	26	57.5	42.5	56	A / B / C / D

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Part Number	Cn	Un	ESL	dv/dt	I Peak	Irms max.	Dimension (mm)			
	μF	Vdc	nH	V/μs	Amps	A	L	B	H	Terminal Style
<b><i>Un 1200VDC , Urms 500VAC</i></b>										
USM88-334J1200#45#	0.33	1200	24	700	231	12	45	26	29	A / B / C / D
USM88-474J1200#45#	0.47	1200	24	700	329	14	45	26	29	A / B / C / D
USM88-564J1200#45#	0.56	1200	24	700	392	15	45	26	29	A / B / C / D
USM88-684J1200#45#	0.68	1200	24	700	476	15	45	34	36	A / B / C / D
USM88-824J1200#45#	0.82	1200	24	700	574	16	45	34	36	A / B / C / D
USM88-105J1200#45#	1.0	1200	24	700	700	18	45	34	36	A / B / C / D
USM88-125J1200#45#	1.2	1200	24	700	840	19	45	34	45	A / B / C / D
USM88-155J1200#45#	1.5	1200	24	700	1050	20	45	34	45	A / B / C / D
USM88-105J1200#57.5	1.0	1200	28	450	450	17	57.5	30	45	A / B / C / D
USM88-155J1200#57.5	1.5	1200	28	450	675	18	57.5	30	45	A / B / C / D
USM88-205J1200#57.5	2.0	1200	28	450	900	19	57.5	30	45	A / B / C / D
USM88-255J1200#57.5	2.5	1200	28	450	1125	21	57.5	35	50	A / B / C / D
USM88-305J1200#57.5	3.0	1200	28	450	1350	22	57.5	35	50	A / B / C / D
USM88-405J1200#57.5	4.0	1200	28	450	1800	25	57.5	42.5	56	A / B / C / D
USM88-455J1200#57.5	4.5	1200	28	450	2025	26	57.5	42.5	56	A / B / C / D
<b><i>Un 1600VDC , Urms 600VAC</i></b>										
USM88-104J1600#45#	0.1	1600	24	900	90	5	45	26	29	A / B / C / D
USM88-154J1600#45#	0.15	1600	24	900	135	6	45	26	29	A / B / C / D
USM88-224J1600#45#	0.22	1600	24	900	198	7	45	26	29	A / B / C / D
USM88-334J1600#45#	0.33	1600	24	900	297	14	45	26	29	A / B / C / D
USM88-474J1600#45#	0.47	1600	24	900	423	15	45	34	36	A / B / C / D
USM88-564J1600#45#	0.56	1600	24	900	504	16	45	34	36	A / B / C / D
USM88-684J1600#45#	0.68	1600	24	900	612	17	45	34	36	A / B / C / D
USM88-824J1600#45#	0.82	1600	24	900	738	18	45	34	36	A / B / C / D
USM88-105J1600#45#	1.0	1600	24	900	900	20	45	34	45	A / B / C / D
USM88-125J1600#57.5	1.2	1600	28	650	780	21	57.5	30	45	A / B / C / D
USM88-155J1600#57.5	1.5	1600	28	650	975	22	57.5	35	50	A / B / C / D
USM88-205J1600#57.5	2.0	1600	28	650	1300	23	57.5	35	50	A / B / C / D
USM88-255J1600#57.5	2.5	1600	28	650	1625	24	57.5	42.5	56	A / B / C / D

## ❖ Electrical Characteristics

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Part Number	Cn	Un	ESL	dv/dt	I Peak	Irms max.	Dimension (mm)			
	μF	Vdc	nH	V/μs	Amps	A	L	B	H	Terminal Style
<b>Un 2000VDC , Urms 650VAC</b>										
USM88-104J2000#45#	0.1	2000	24	1100	110	5	45	26	29	A / B / C / D
USM88-154J2000#45#	0.15	2000	24	1100	165	6	45	26	29	A / B / C / D
USM88-224J2000#45#	0.22	2000	24	1100	242	14	45	26	29	A / B / C / D
USM88-334J2000#45#	0.33	2000	24	1100	363	15	45	26	29	A / B / C / D
USM88-474J2000#45#	0.47	2000	24	1100	517	16	45	34	36	A / B / C / D
USM88-564J2000#45#	0.56	2000	24	1100	616	17	45	34	36	A / B / C / D
USM88-684J2000#45#	0.68	2000	24	1100	748	18	45	34	36	A / B / C / D
USM88-824J2000#45#	0.82	2000	24	1100	902	20	45	34	45	A / B / C / D
USM88-105J2000#57.5	1.0	2000	24	700	700	22	57.5	30	45	A / B / C / D
USM88-125J2000#57.5	1.2	2000	28	700	840	23	57.5	35	50	A / B / C / D
USM88-155J2000#57.5	1.5	2000	28	700	1050	24	57.5	35	50	A / B / C / D
USM88-205J2000#57.5	2.0	2000	28	700	1400	25	57.5	42.5	56	A / B / C / D
<b>Un 3000VDC , Urms 750VAC</b>										
USM88-473J3000#45#	0.047	3000	24	1500	70.5	8	45	26	29	A / B / C / D
USM88-683J3000#45#	0.068	3000	24	1500	102	10	45	26	29	A / B / C / D
USM88-104J3000#45#	0.1	3000	28	1500	150	13	45	26	29	A / B / C / D
USM88-154J3000#45#	0.15	3000	28	1500	225	15	45	26	29	A / B / C / D
USM88-224J3000#45#	0.22	3000	28	1500	330	17	45	34	36	A / B / C / D
USM88-334J3000#45#	0.33	3000	28	1500	495	19	45	34	36	A / B / C / D
USM88-474J3000#45#	0.47	3000	28	1500	705	21	45	34	45	A / B / C / D
USM88-104J3000#57.5	0.1	3000	32	800	80	11	57.5	30	45	A / B / C / D
USM88-154J3000#57.5	0.15	3000	32	800	120	13	57.5	30	45	A / B / C / D
USM88-224J3000#57.5	0.22	3000	32	800	176	15	57.5	30	45	A / B / C / D
USM88-334J3000#57.5	0.33	3000	32	800	264	18	57.5	30	45	A / B / C / D
USM88-474J3000#57.5	0.47	3000	32	800	376	20	57.5	30	45	A / B / C / D
USM88-564J3000#57.5	0.56	3000	32	800	448	22	57.5	35	50	A / B / C / D
USM88-684J3000#57.5	0.68	3000	32	800	544	23	57.5	35	50	A / B / C / D
USM88-824J3000#57.5	0.82	3000	32	800	656	24	57.5	42.5	56	A / B / C / D
USM88-105J3000#57.5	1.0	3000	32	800	800	25	57.5	42.5	56	A / B / C / D

\*Other capacitance , voltage and diamension are available on request.

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