

MP80 SERIES

Metallized Polypropylene

Metallized Polypropylene Snubber Circuit Power Capacitor

Snubber circuit power capacitor that fits IGBT terminal spacing for direct mounting, for across-the-buss power applications.



FEATURES

- Reduces inductance up to 90% - eliminates spiking
- Uses screw down terminals instead of lead wires
- Compact case sizes/rugged monolithic construction
- Voltage ratings of 400 to 3300 VDC
- Continuous current carrying capacity to 80 AMPS
- ESR as low as 0.003 OHMS
- RoHS compliant

STANDARD CONFIGURATION

- IGBT mountable power supply capacitor

Specification Summary

Capacitance Range

0.5 μ F to 50.0 μ F

Capacitance Tolerance

Standard capacitance tolerance is $\pm 10\%$. Tolerances of $\pm 20\%$ and $\pm 5\%$ are also available.

NOTE: Capacitance is measured at 25°C, and at, or referred to, a frequency of 1kHz for all values.

Operating Temperature Range

-55°C to +105°C

Enclosure/Construction

Extended metallized polypropylene film.

Voltage Rating

400 VDC to 3300 VDC

Quality Control

Capacitors are tested 100% for:

- Capacitance
- Tolerance
- Dissipation Factor
- Dielectric withstanding voltage
- Insulation Resistance
- Equivalent Series Resistance (ESR)

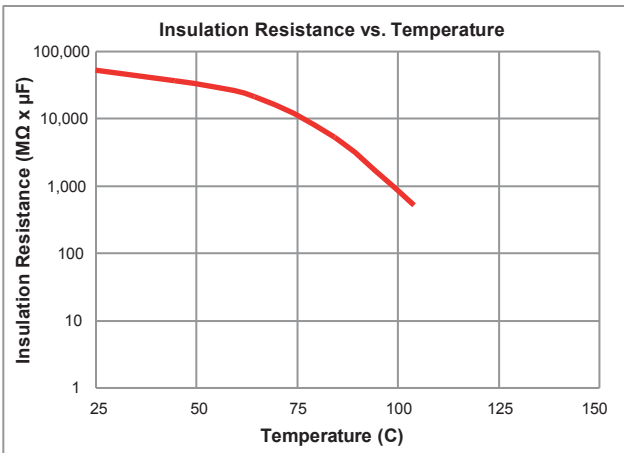
Process and inspection data are maintained on file and available upon special request.

Environmental

Parameter	Method	Condition
Vibration	204	D
Shock	213	I
Humidity	106	-
Thermal Shock	107	A
Life	108	F

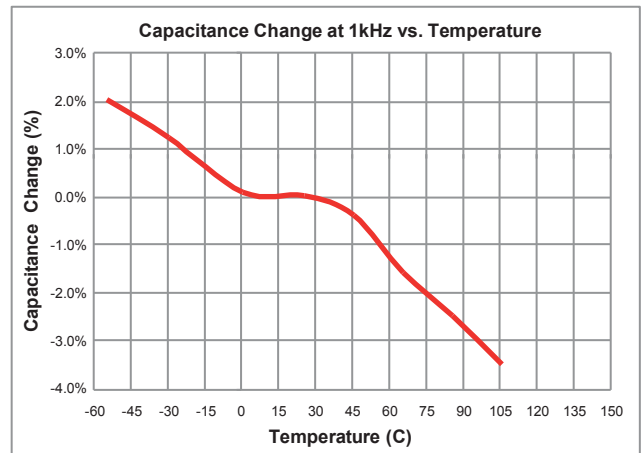
Reference MIL-STD-202

Characteristics



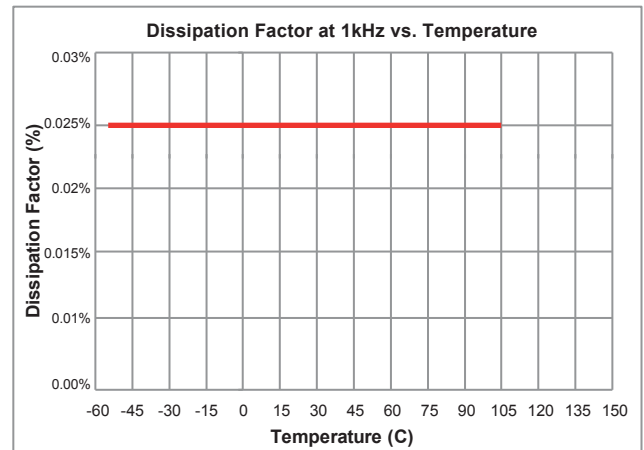
Dielectric Strength

Capacitors withstand a DC potential of 1.5 x rated voltage for one (1) minute without damage or breakdown. Test voltage is applied and discharged through a minimum resistance of 100 OHMS per volt minimum.



Dissipation Factor

Polypropylene has an intrinsic dissipation factor of less than 2.1×10^{-4} over the operating temperature range of -55°C to +105°C and frequencies to 1MHz.

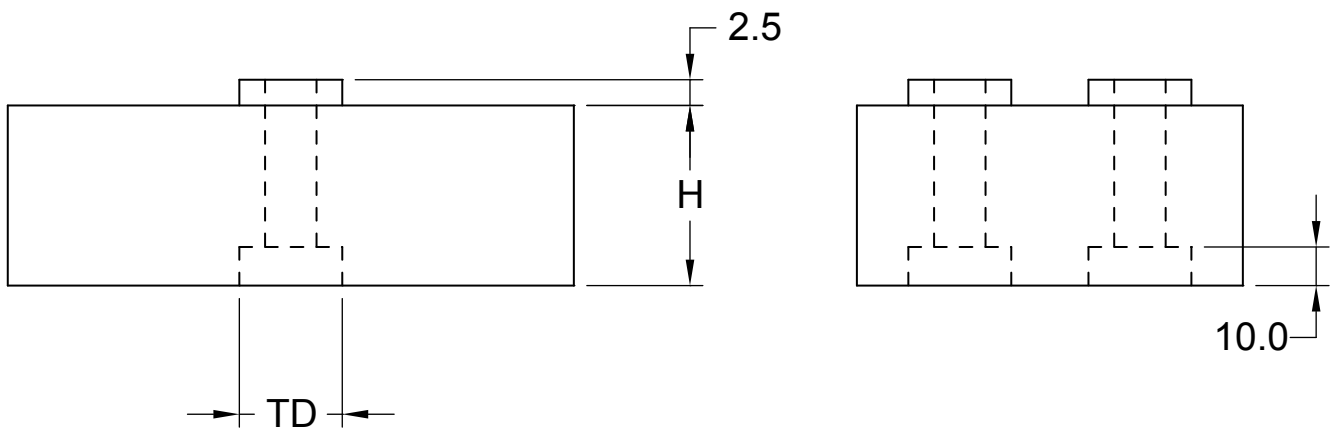
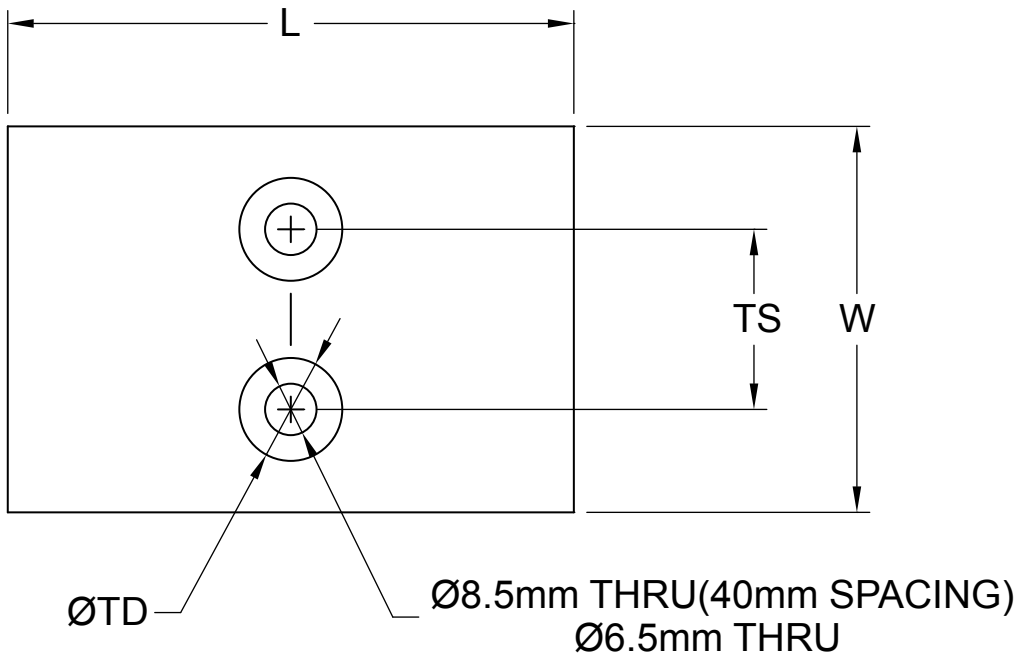


Detail Data

PART NUMBER	VOLTAGE VDC	CAP µF	TD		TS		ESR mOhms	TEMPERATURE (Arms)			I PEAK (A)	dv/dt V/µs	ESL nH	Fres kHz	CASE SIZE
			(in)	(mm)	(in)	(mm)		25°C	50°C	85°C					
MP80CJ505_	400	5.0	0.394	10.0	0.906	23	0.005	19	15	9	409	82	23	491	1
MP80CJ106_	400	10.0	0.394	10.0	0.906	23	0.003	28	22	14	817	82	23	347	2
MP80CJ156_	400	15.0	0.500	12.7	1.102	28	0.005	23	19	12	709	47	31	242	3
MP80CJ206_	400	20.0	0.500	12.7	1.102	28	0.004	29	23	14	945	47	31	210	4
MP80CJ256_	400	25.0	0.500	12.7	1.102	28	0.003	33	27	17	1181	47	31	188	5
MP80CJ306_	400	30.0	0.500	12.7	1.102	28	0.003	37	30	19	1417	47	31	171	6
MP80CJ506_	400	50.0	0.500	12.7	1.102	28	0.003	45	36	23	2207	44	32	130	7
MP80CQ405_	500	4.0	0.394	10.0	0.906	23	0.005	19	15	9	381	95	23	549	1
MP80CQ805_	500	8.0	0.394	10.0	0.906	23	0.003	28	22	14	763	95	23	388	2
MP80CQ126_	500	12.0	0.500	12.7	1.102	28	0.005	23	19	12	661	55	31	271	3
MP80CQ166_	500	16.0	0.500	12.7	1.102	28	0.004	29	23	14	882	55	31	235	4
MP80CQ206_	500	20.0	0.500	12.7	1.102	28	0.004	29	23	14	1102	55	31	210	5
MP80CQ256_	500	25.0	0.500	12.7	1.102	28	0.003	37	30	19	1378	55	31	188	6
MP80CQ406_	500	40.0	0.500	12.7	1.102	28	0.003	45	36	23	2060	51	32	145	7
MP80CK305_	600	3.0	0.394	10.0	0.906	23	0.006	17	14	9	327	109	23	634	1
MP80CK605_	600	6.0	0.394	10.0	0.906	23	0.004	24	19	12	654	109	23	448	2
MP80CK106_	600	10.0	0.500	12.7	1.102	28	0.005	23	19	12	630	63	31	297	3
MP80CK126_	600	12.0	0.500	12.7	1.102	28	0.005	26	21	13	756	63	31	271	4
MP80CK156_	600	15.0	0.500	12.7	1.102	28	0.004	29	23	14	945	63	31	242	5
MP80CK206_	600	20.0	0.500	12.7	1.102	28	0.003	37	30	19	1260	63	31	210	6
MP80CK306_	600	30.0	0.500	12.7	1.102	28	0.003	45	36	23	1766	59	32	168	7
MP80CN205_	800	2.0	0.394	10.0	0.906	23	0.007	16	13	8	272	136	23	777	1
MP80CN405_	800	4.0	0.394	10.0	0.906	23	0.004	24	19	12	545	136	23	549	2
MP80CN605_	800	6.0	0.500	12.7	1.102	28	0.006	21	17	11	472	79	31	383	3
MP80CN805_	800	8.0	0.500	12.7	1.102	28	0.005	26	21	13	630	79	31	332	4
MP80CN106_	800	10.0	0.500	12.7	1.102	28	0.004	29	23	14	787	79	31	297	5
MP80CN126_	800	12.0	0.500	12.7	1.102	28	0.004	32	26	16	945	79	31	271	6
MP80CN206_	800	20.0	0.500	12.7	1.102	28	0.003	45	36	23	1471	74	32	205	7
MP80CL684_	1200	0.68	0.394	10.0	0.906	23	0.005	19	15	9	352	517	23	1389	1
MP80CL155_	1200	1.5	0.394	10.0	0.906	23	0.003	35	22	14	776	517	23	935	2
MP80CL225_	1200	2.2	0.500	12.7	1.102	28	0.005	30	19	12	596	271	31	647	3
MP80CL305_	1200	3.0	0.500	12.7	1.102	28	0.004	29	23	14	813	271	31	554	4
MP80CL355_	1200	3.5	0.500	12.7	1.102	28	0.004	29	23	14	948	271	31	513	5
MP80CL405_	1200	4.0	0.500	12.7	1.102	28	0.004	32	26	16	1083	271	31	480	6
MP80CL685_	1200	6.8	0.500	12.7	1.102	28	0.003	45	36	23	1682	247	32	358	7
MP80CM564_	1500	0.56	0.394	10.0	0.906	23	0.006	17	14	9	326	582	23	1530	1
MP80CM125_	1500	1.2	0.394	10.0	0.906	23	0.003	28	22	14	698	582	23	1045	2
MP80CM205_	1500	2.0	0.500	12.7	1.102	28	0.005	23	19	12	609	305	31	679	3
MP80CM255_	1500	2.5	0.500	12.7	1.102	28	0.004	29	23	14	762	305	31	607	4
MP80CM305_	1500	3.0	0.500	12.7	1.102	28	0.004	29	23	14	914	305	31	554	5
MP80CM355_	1500	3.5	0.500	12.7	1.102	28	0.004	32	26	16	1067	305	31	513	6
MP80CM565_	1500	5.6	0.500	12.7	1.102	28	0.003	45	36	23	1558	278	32	394	7
MP80CR504_	1800	0.50	0.394	10.0	0.906	23	0.004	24	20	12	305	610	23	1480	2
MP80CR105_	1800	1.0	0.500	12.7	1.142	29	0.005	24	20	12	313	313	31	903	3
MP80CR125_	1800	1.2	0.500	12.7	1.142	29	0.004	28	23	14	375	313	31	825	4
MP80CR155_	1800	1.5	0.500	12.7	1.142	29	0.004	34	28	17	469	313	31	738	5
MP80CR205_	1800	2.0	0.500	12.7	1.142	29	0.003	43	36	22	625	313	31	639	6
MP80CR355_	1800	3.5	0.500	12.7	1.575	40	0.003	61	51	31	992	284	32	475	7
MP80CR455_	1800	4.5	0.500	12.7	1.575	40	0.003	76	64	39	1276	284	32	419	8
MP80CS504_	2200	0.50	0.500	12.7	1.142	29	0.008	18	15	9	206	412	31	1280	3
MP80CS684_	2200	0.68	0.500	12.7	1.142	29	0.006	24	20	12	280	412	31	1100	4
MP80CS754_	2200	0.75	0.500	12.7	1.142	29	0.006	26	21	13	309	412	31	1040	5
MP80CS105_	2200	1.0	0.500	12.7	1.142	29	0.004	32	27	17	412	412	31	903	6
MP80CS225_	2200	2.2	0.563	14.3	1.575	40	0.003	54	45	28	780	354	32	600	7
MP80CS305_	2200	3.0	0.563	14.3	1.575	40	0.003	70	59	36	1063	354	32	512	8
MP80CV754_	3300	0.75	0.563	14.3	1.575	40	0.005	45	38	23	1144	762	30	1060	7
MP80CV824_	3300	0.82	0.563	14.3	1.575	40	0.004	52	43	26	1332	812	30	1010	8
MP80CV155_	3300	1.5	0.563	14.3	1.575	40	0.003	80	67	41	2288	305	31	762	9

Mechanical Data

CASE SIZE	WIDTH		LENGTH		HEIGHT		ESTIMATED WEIGHT (g)
	(in)	(mm)	(in)	(mm)	(in)	(mm)	
1	1.500	38	2.000	51	0.950	24	76
2	1.500	38	2.650	67	1.240	31	127
3	2.275	58	2.850	72	0.940	24	144
4	2.300	58	3.500	89	1.000	25	184
5	2.250	57	3.750	95	0.950	24	182
6	2.275	58	2.750	70	1.750	44	266
7	2.475	63	3.500	89	2.000	51	423
8	2.500	64	4.200	107	2.000	51	464
9	3.890	99	3.980	101	2.185	55	690



Additional Information

The EC MP80 represents the first Snubber circuit power capacitor that is designed to fit IGBT terminal spacing for direct mounting. The result is a drastic reduction of inductance to levels not previously attainable with conventional leaded capacitors. This was accomplished by the in-house development of a revolutionary way to build a capacitor with minimal inductance, without lead wires.

The benefit to the power converter designer is measurable cost savings as a result of simplification of both the system design and manufacturing operation. Because of its wide voltage range and exceptional electrical characteristics, the MP80 is well suited for across-the-buss power usages, which includes electric vehicles, motor applications, controllers, high power inverters and power conditioning systems.

How to Order

TYPE Rectangular/direct IGBT mountable	→	MP80C
VOLTAGE VDC: J=400, Q=500, K=600, N=800, L=1200, M=1500, R=1800, S=2200, V=3300	→	J
CAPACITANCE IN PICO FARADS The first two digits are significant figures, the third digit represents the number of zeros to follow to express the capacitance in picofarads (e.g 506=50,000,000pF)	→	506
TOLERANCE M = ±20%, K = ±10%, J = ±5%	→	K

Marking And Date Code

All capacitors are marked with company initials "EC", corporate logo or EC trademark—in addition to type MP80, capacitance, tolerance, rated DC working voltage and date code. The first two digits of the date code represent the year, the second two digits the week, i.e., 1252 is the 52nd week of 2012, 1202 is the second week of 2012.

Quality Assurance

Major emphasis is placed on quality assurance. EC is an ISO 9001 and AS9100 Certified Company. Raw material inspection and the use of SPC manufacturing procedures assure the highest quality standards. Procedures are fully described in the EC Quality Control Manual. Electronic Concepts will continue to advance the state-of-the-art by utilizing leading edge technology, compact capacitor designs and establishing reliability procedures.

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