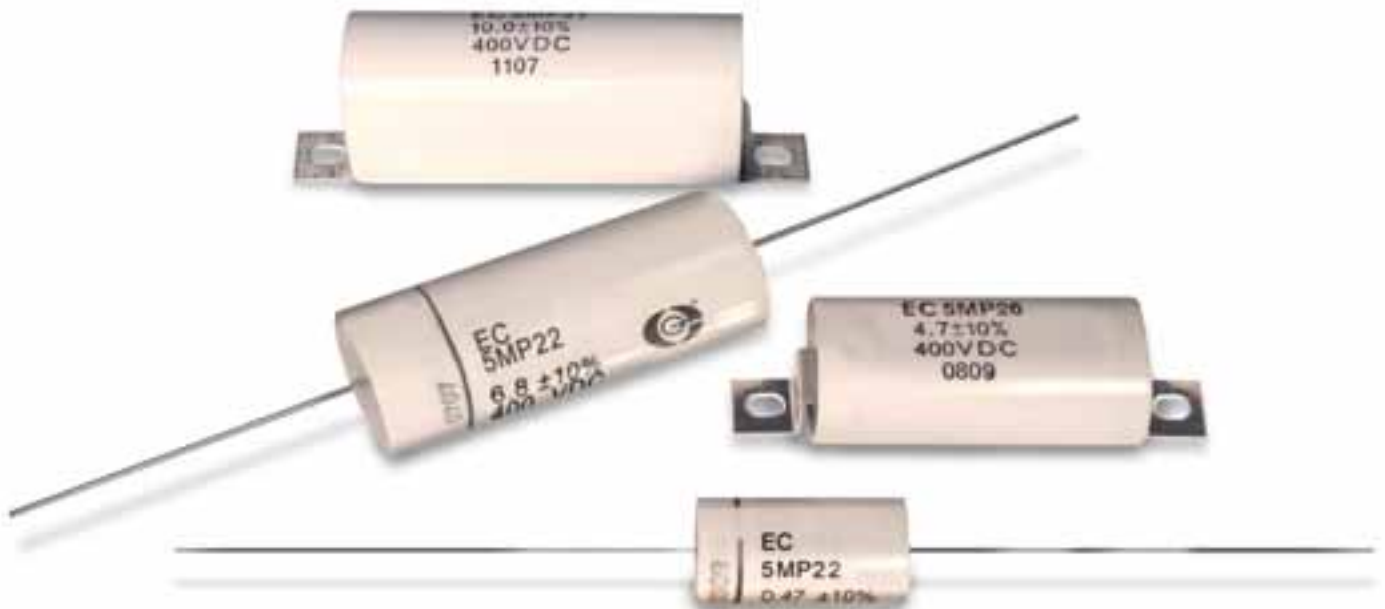


5MP2 SERIES

Metallized Polypropylene

Metallized Polypropylene

Switching power supply capacitors that require snubber and high current applications. Voltage: 400 to 2000 VDC; Capacitance as high as 10.0 μ F; ESR as low as 0.005 OHMS; ESL as low as 18nH; RMS current to 48.4 amps; UL94V-0 flame retardant; three configurations; with axial leads or tab terminations.



FEATURES

- Low loss polypropylene dielectric
- High power rugged construction
- Tested for high peak currents
- Smaller size
- UL94V-0 flame retardant
- Low inductance
- High RMS capability
- Low impedance and ESR
- RoHS compliant

STANDARD CONFIGURATION

- 5MP22: axial leads
- 5MP26: radial tabs/low profile
- 5MP27: radial tabs/high profile

Specification Summary

Capacitance Range

0.47 μ F to 10.0 μ F

Capacitance Tolerance

Standard capacitance tolerance is $\pm 10\%$. Tolerances of $\pm 5\%$, $\pm 2\%$ & $\pm 1\%$ are also available.

Operating Temperature Range

-55°C to +105°C

Enclosure/Construction

Polypropylene film in a polyester wrap with epoxy endfill. Terminals are tin plated copper.

Voltage Rating

VDC: 400VDC to 2000VDC

VAC: 230VAC to 460VAC

Quality Control

Capacitors are tested 100% for:

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

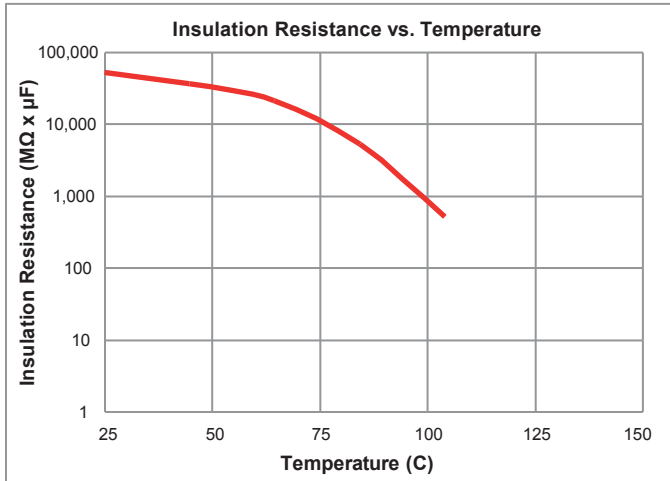
Process and inspection data are maintained on file and available upon special request.

Environmental

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

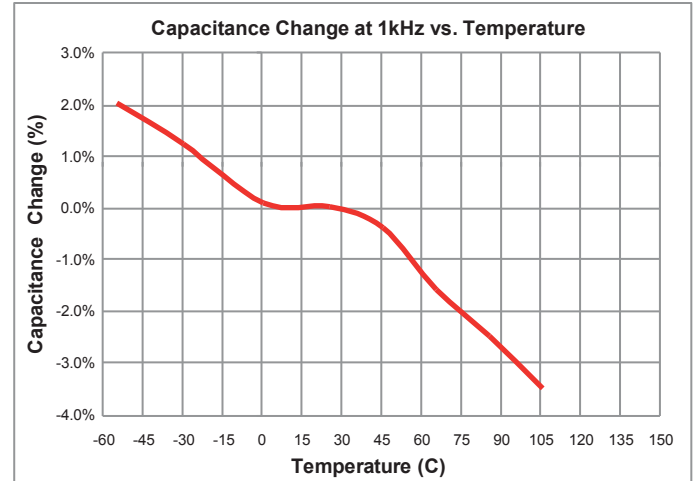
Reference MIL-STD-202

Characteristics



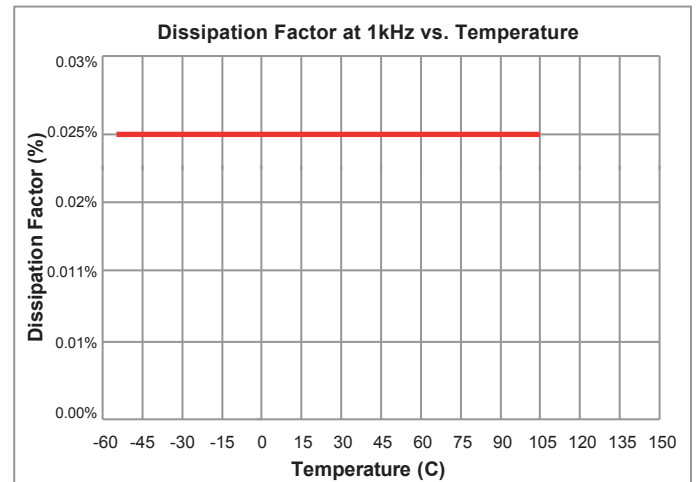
Dielectric Strength

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 OHM 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

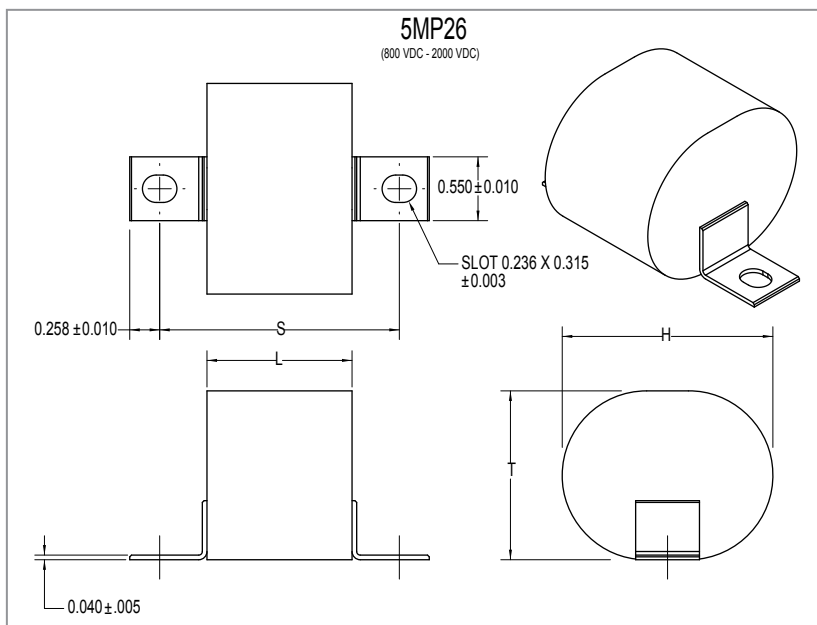
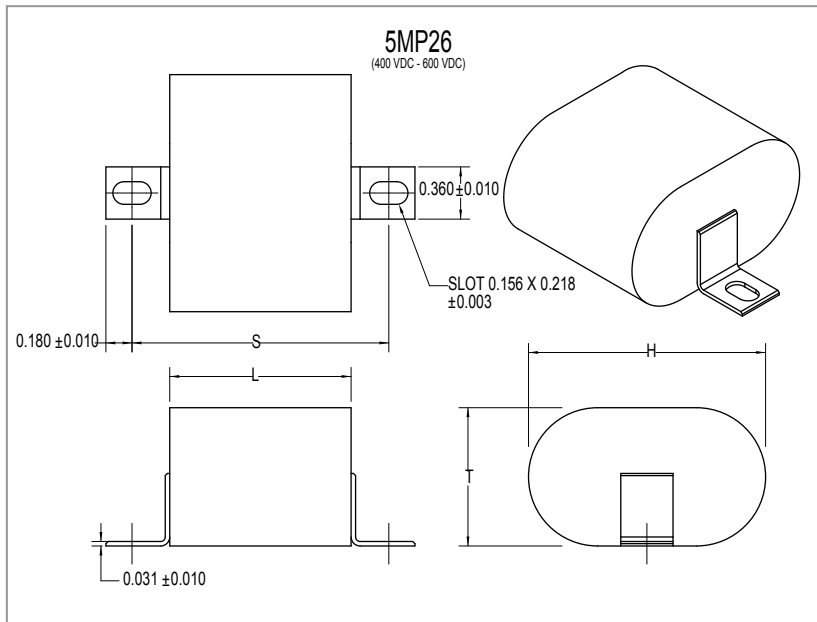
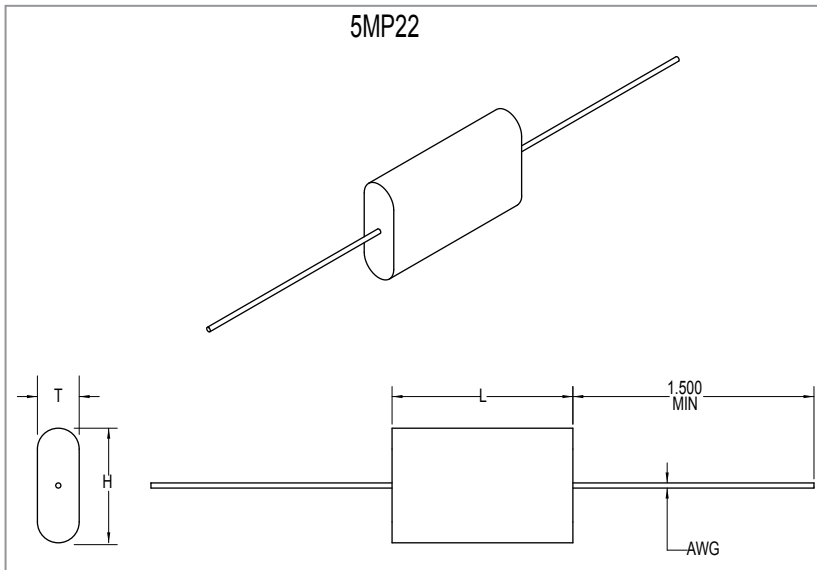
PART NUMBER	CAP μF	VOLTAGE VDC	VOLTAGE VAC	ESR 100 kHz OHMS MAX	MAXIMUM RIPPLE CURRENT IN AMPS 10kHz				I PEAK AMPS	dv/dt V/μs	(TYP) "ESL" nH	(TYPICAL) "f" RES kHz
					TEMPERATURES							
					25°C	50°C	85°C	105°C				
5MP2_J474K	0.47	400	230	0.016	5.3	4.4	2.7	0.7	79	168	18	1710
5MP2_J684K	0.68	400	230	0.015	6.2	5.2	3.2	0.8	97	143	22	1312
5MP2_J105K	1.0	400	230	0.010	8.1	6.8	4.2	1.0	143	143	22	1082
5MP2_J155K	1.5	400	230	0.007	10.8	8.9	5.5	1.3	214	143	22	884
5MP2_J205K	2.0	400	230	0.006	13.1	10.9	6.7	1.6	285	143	22	765
5MP2_J225K	2.2	400	230	0.006	14	11.6	7.1	1.7	314	143	22	730
5MP2_J335K	3.3	400	230	0.005	16.5	13.7	8.4	2.0	471	143	22	596
5MP2_J475K	4.7	400	230	0.006	17.2	14.3	8.8	2.1	421	89	35	392
5MP2_J685K	6.8	400	230	0.007	18	15	9.2	2.2	443	65	50	274
5MP2_J106K	10.0	400	230	0.005	23.2	19.3	11.9	2.8	652	65	50	226
5MP2_K474K	0.47	600	230	0.011	7.9	6.6	4.1	1.0	118	251	18	1710
5MP2_K684K	0.68	600	230	0.008	10.3	8.6	5.3	1.3	171	251	18	1422
5MP2_K105K	1.0	600	230	0.006	13.5	11.2	6.9	1.6	251	251	18	1173
5MP2_K155K	1.5	600	230	0.005	16	13.3	8.2	1.9	321	214	22	884
5MP2_K205K	2.0	600	230	0.005	17.5	14.6	9	2.1	428	214	22	765
5MP2_K225K	2.2	600	230	0.010	13.5	11.2	6.9	1.6	249	113	42	522
5MP2_K335K	3.3	600	230	0.007	17.9	14.9	9.1	2.2	373	113	42	426
5MP2_K475K	4.7	600	230	0.006	22.7	18.9	11.6	2.8	532	113	42	357
5MP2_N305K	3.0	800	230	0.005	41.9	34.9	21.4	5.1	856	285	22	625
5MP2_N405K	4.0	800	230	0.005	42.6	35.5	21.8	5.2	880	220	28	473
5MP2_N505K	5.0	800	230	0.005	42.7	35.6	21.8	5.2	895	179	35	379
5MP2_N605K	6.0	800	230	0.005	42.7	35.5	21.8	5.2	905	151	42	316
5MP2_N705K	7.0	800	230	0.005	42.5	35.3	21.7	5.2	913	130	50	270
5MP2_N805K	8.0	800	230	0.005	42.3	35.2	21.6	5.1	918	115	57	236
5MP2_BN105K	1.0	1200	460	0.005	37.5	31.2	19.2	4.6	1076	1076	20	1120
5MP2_BN155K	1.5	1200	460	0.005	42.3	35.2	21.6	5.1	1143	762	28	782
5MP2_BN205K	2.0	1200	460	0.005	45.8	38.1	23.4	5.6	1219	610	34	609
5MP2_BN255K	2.5	1200	460	0.005	47.9	39.9	24.5	5.8	1270	508	41	498
5MP2_BN305K	3.0	1200	460	0.005	48.4	40.3	24.7	5.9	1276	425	49	416
5MP2_BN335K	3.3	1200	460	0.005	47.1	39.2	24.1	5.7	1232	373	56	371
5MP2_BT105K	1.0	1600	460	0.005	34.6	28.8	17.7	4.2	813	813	34	862
5MP2_BT135K	1.3	1600	460	0.005	37.8	31.4	19.3	4.6	881	677	41	691
5MP2_BT155K	1.5	1600	460	0.005	37.3	31.0	19.0	4.5	851	567	49	588
5MP2_BT185K	1.8	1600	460	0.005	39.1	32.5	20.0	4.8	896	498	56	502
5MP2_P105K	1.0	2000	460	0.005	33.7	28.0	17.2	4.1	709	709	49	721
5MP2_P125K	1.2	2000	460	0.005	35.5	29.5	18.1	4.3	746	622	56	615

Note: RMS current ratings based on maximum capability of the capacitor element. For capacitor style with leads, the RMS current rating is limited by the lead wire as follows: #16: 19 AMPS; #18: 16 AMPS; #20: 12 AMPS.

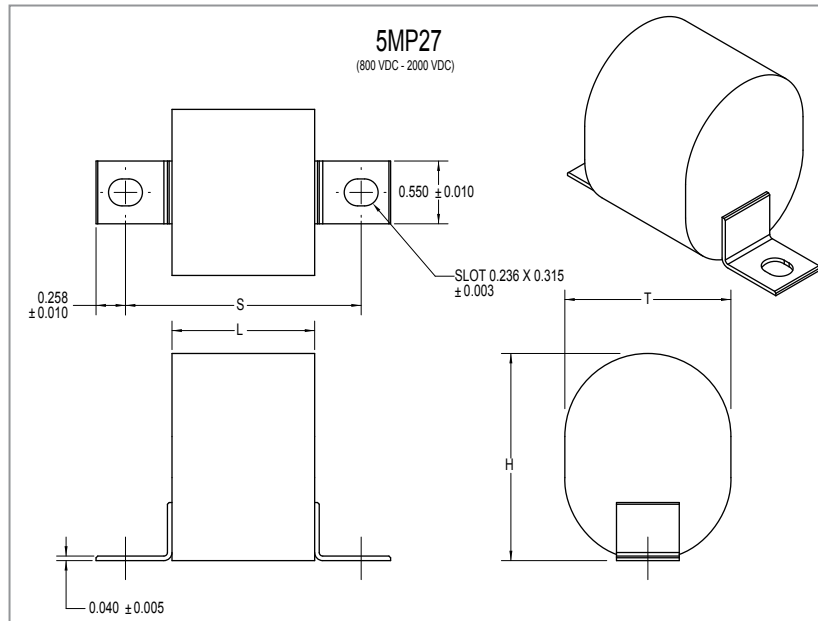
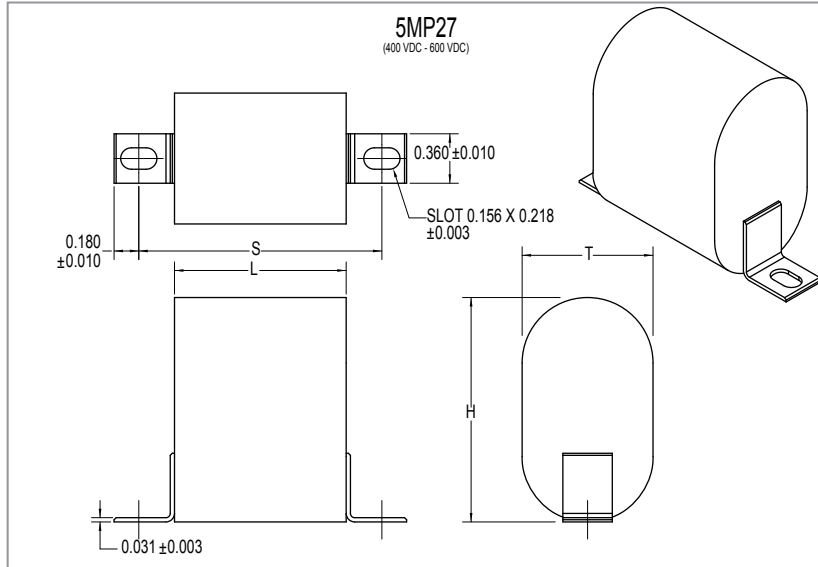
Detail Data

PART NUMBER	CAP μF	AXIAL LEADS 5MP22				LOW PROFILE 5MP26				HIGH PROFILE 5MP27			
		T MAX	H MAX	L ±0.062	AWG	T MAX	H MAX	L ±0.062	S + 0.093, -0.062	T MAX	H MAX	L ±0.062	S + 0.093, -0.062
5MP2_J474K	0.47	0.260	0.453	1.125	20	-	-	-	-	-	-	-	-
5MP2_J684K	0.68	0.294	0.486	1.250	20	-	-	-	-	-	-	-	-
5MP2_J105K	1.0	0.366	0.559	1.250	20	-	-	-	-	-	-	-	-
5MP2_J155K	1.5	0.461	0.653	1.250	20	-	-	-	-	-	-	-	-
5MP2_J205K	2.0	0.541	0.734	1.250	20	-	-	-	-	-	-	-	-
5MP2_J225K	2.2	0.539	0.794	1.250	20	-	-	-	-	-	-	-	-
5MP2_J335K	3.3	0.681	0.953	1.250	20	0.953	0.681	1.250	1.690	0.681	0.953	1.250	1.690
5MP2_J475K	4.7	0.638	0.893	1.750	18	0.893	0.638	1.750	2.190	0.638	0.893	1.750	2.190
5MP2_J685K	6.8	0.658	0.912	2.250	18	0.912	0.658	2.250	2.690	0.658	0.912	2.250	2.690
5MP2_J106K	10.0	0.817	1.072	2.250	18	1.072	0.817	2.250	2.690	0.817	1.072	2.250	2.690
5MP2_K474K	0.47	0.418	0.611	1.125	20	-	-	-	-	-	-	-	-
5MP2_K684K	0.68	0.514	0.707	1.125	20	-	-	-	-	-	-	-	-
5MP2_K105K	1.0	0.635	0.828	1.125	20	0.828	0.635	1.125	1.565	0.635	0.828	1.125	1.565
5MP2_K155K	1.5	0.726	0.919	1.250	20	0.919	0.726	1.250	1.690	0.726	0.919	1.250	1.690
5MP2_K205K	2.0	0.848	1.041	1.250	20	1.041	0.848	1.250	1.690	0.848	1.041	1.250	1.690
5MP2_K225K	2.2	0.632	0.825	2.000	18	0.825	0.632	2.000	2.440	0.632	0.825	2.000	2.440
5MP2_K335K	3.3	0.788	0.980	2.000	18	0.980	0.788	2.000	2.440	0.788	0.980	2.000	2.440
5MP2_K475K	4.7	0.953	1.145	2.000	18	1.145	0.953	2.000	2.440	0.953	1.145	2.000	2.440
5MP2_N305K	3.0	1.455	1.815	1.250	16	1.815	1.455	1.250	2.065	1.455	1.815	1.250	2.065
5MP2_N405K	4.0	1.455	1.815	1.500	16	1.815	1.455	1.500	2.315	1.455	1.815	1.500	2.315
5MP2_N505K	5.0	1.455	1.815	1.750	16	1.815	1.455	1.750	2.565	1.455	1.815	1.750	2.565
5MP2_N605K	6.0	1.455	1.815	2.000	16	1.815	1.455	2.000	2.815	1.455	1.815	2.000	2.815
5MP2_N705K	7.0	1.455	1.815	2.250	16	1.815	1.455	2.250	3.065	1.455	1.815	2.250	3.065
5MP2_N805K	8.0	1.455	1.815	2.500	16	1.815	1.455	2.500	3.315	1.455	1.815	2.500	3.315
5MP2_BN105K	1.0	1.455	1.815	1.250	16	1.815	1.455	1.250	2.035	1.455	1.815	1.250	2.035
5MP2_BN155K	1.5	1.455	1.815	1.500	16	1.815	1.455	1.500	2.285	1.455	1.815	1.500	2.285
5MP2_BN205K	2.0	1.455	1.815	1.750	16	1.815	1.455	1.750	2.535	1.455	1.815	1.750	2.535
5MP2_BN255K	2.5	1.455	1.815	2.000	16	1.815	1.455	2.000	2.785	1.455	1.815	2.000	2.785
5MP2_BN305K	3.0	1.455	1.815	2.250	16	1.815	1.455	2.250	3.035	1.455	1.815	2.250	3.035
5MP2_BN335K	3.3	1.455	1.815	2.500	16	1.815	1.455	2.500	3.285	1.455	1.815	2.500	3.285
5MP2_BT105K	1.0	1.455	1.815	1.750	16	1.815	1.455	1.750	2.535	1.455	1.815	1.750	2.535
5MP2_BT135K	1.3	1.455	1.815	2.000	16	1.815	1.455	2.000	2.785	1.455	1.815	2.000	2.785
5MP2_BT155K	1.5	1.455	1.815	2.250	16	1.815	1.455	2.250	3.035	1.455	1.815	2.250	3.035
5MP2_BT185K	1.8	1.455	1.815	2.500	16	1.815	1.455	2.500	3.285	1.455	1.815	2.500	3.285
5MP2_P105K	1.0	1.455	1.815	2.250	16	1.815	1.455	2.250	3.035	1.455	1.815	2.250	3.035
5MP2_P125K	1.2	1.455	1.815	2.500	16	1.815	1.455	2.500	3.285	1.455	1.815	2.500	3.285

Dimensional Data



Dimensional Data



Additional Information

Electronic Concepts is the only major manufacturer to offer polypropylene capacitors in three different configurations. Each is designed to fill a specific mechanical layout requirement; encompassing such parameter goals as optimizing pcb density or spacing. Now for the first time the circuit design dictates which EC capacitor to select!

In addition, because radial tab terminals are available, greater reliability can be realized, especially in hostile environments such as shock and vibration. Tabs also allow for lower inductance and higher RMS current carrying capacities versus other brands that can only be specified with wire leads. In addition, tabs offer the option of surface mounting.

How to Order

TYPE Metallized Polypropylene	→	5MP
STYLE Axial Leads (22: axial leads, 26: radial tabs--low profile, 27: radial tabs--high profile)	→	22
VOLTAGES J = 400 VDC; K = 600 VDC; etc.	→	J
CAPACITANCE IN PICO FARADS The first two digits are significant, the third represents the number of zeros (e.g 475=4700000pF)	→	335
TOLERANCE K = ±10%. Other tolerances are also available.	→	K

Marking And Date Code

All capacitors are marked with company initials "EC", corporate logo or EC trademark—in addition to type 5MP2, 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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