

BATHTUB STYLE METAL CASE PAPER / POLYESTER FOIL CAPACITORS



FEATURES

- Capacitance values to 10 μF
- Drawn metal “bathtub” cases
- Top, side, or bottom terminals
- Approved to MIL-C-25

MAJOR APPLICATIONS:

Bypass, coupling, filtering.

PHYSICAL CHARACTERISTICS

CONSTRUCTION:

Non-inductive wound paper / polyester film with extended foil electrodes.

CASE:

Hermetically sealed metal enclosure.

TERMINALS: SYMBOL B

Glass to metal solder-seal with non removable solder lug.

MARKING:

Dearborn trademark, type number, capacitance, tolerance, voltage, and date code.

ELECTRICAL SPECIFICATIONS

CAPACITANCE RANGE:

0.05 μF to 10.0 μF

DC VOLTAGE RATING:

100 VDC to 1,000 VDC

CAPACITANCE TOLERANCE:

- K, $\pm 10\%$
- V, $+20 -10\%$

OPERATING TEMPERATURE:

- Characteristics E and F -55°C to +85°C
- Characteristic K -55°C to +125°C

VOLTAGE DERATING:

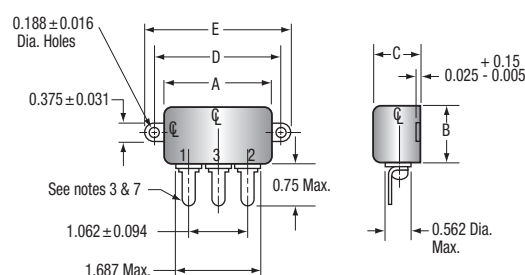
- Characteristics E and F at +85°C, 65% of rated voltage
- Characteristic K at +125°C, 70% of rated voltage

DISSIPATION FACTOR:

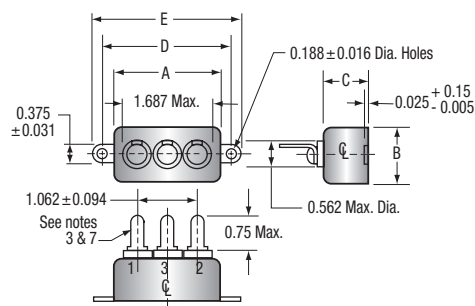
1.0% maximum

DIMENSIONS (in inches)

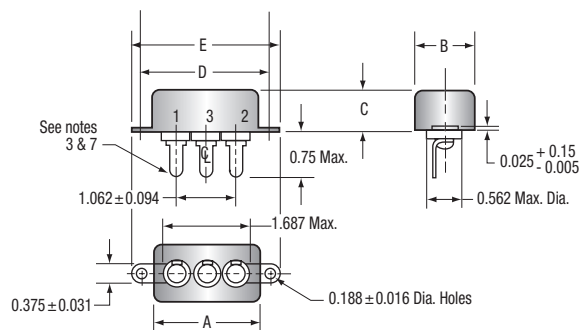
TYPE CP53



TYPE CP54



TYPE CP55



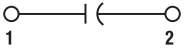
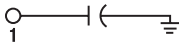
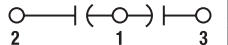
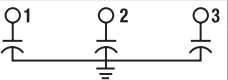
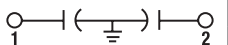
Note:

1. See following tables for additional dimensions.
2. All dimensions in inches.
3. Terminals need not be identified by numbers as shown. Shape of terminals and terminal lugs (drilled, punched, forked, or slotted) optional.
4. Mounting holes may be elongated.
5. For circuit 1, use terminals 1 and 2. For circuit 2, use terminal 1. For circuit 4, use terminal 1 for common connection and identify common terminal by the letter C on case adjacent to terminal. For circuit 6, use terminals 1 and 2.
6. Capacitors differ only in location of terminals. Style CP53, having the terminals on one side, contains certain values of capacitance in a smaller case than is possible with styles CP54 and CP55, the terminals of which are on top and bottom faces respectively.
7. Terminal lugs shall be oriented as shown with respect to side of case bearing terminal identification numbers.

BATHTUB STYLE METAL CASE PAPER / POLYESTER FOIL CAPACITORS

TYPE CP53/54/55

DIELECTRIC WITHSTANDING VOLTAGE TEST

Circuit symbol	Circuit diagram	Test	Test connections	Test Voltage (Percent of Rated DC Voltage)	Time test applied (Minutes)
1		Terminal to terminal	1 to 2	200 ^{1/}	1 ^{2/}
		Terminal to case	1 and 2 to case	400 ^{5/}	1 ^{3/ 4/}
				200 + 1,000 ^{6/} V	1 ^{3/ 4/}
2		Terminal to terminal	1 to case	200 ^{1/}	1 ^{2/}
4		Terminal to terminal	1 to 2 and 3 together	200 ^{1/}	1 ^{7/}
		Terminal to case	1, 2, and 3 to case	200 + 1,000 V	1 ^{3/ 4/}
5		Terminal to case	1, 2, and 3 to case	200	1 ^{7/}
		Terminal to terminal	1 and 2 to 3 1 to 2	200	1 ^{7/}
6		Terminal to terminal	1 and 2 to case	200	1 ^{7/}
			1 to 2	200	1 ^{7/}

^{1/} 175 percent of rated dc voltage after temperature-and immersion-cycling and moisture resistance tests.

^{2/} For quality conformance inspection and at the option of the supplier, either 200 percent of rated dc voltage for not less than 15 seconds or 250 percent of rated voltage for not less than 1 second.

^{3/} For quality conformance inspection, the period of test voltage application shall be 1 second.

^{4/} For quality conformance inspection, applications may be made between each terminal individually and the case, at the option of the supplier.

^{5/} For capacitors having dc voltage ratings of 600 V and less.

^{6/} For capacitors having dc voltage ratings greater than 600 V.

^{7/} For quality conformance inspection, the application may be made for 1 second if the capacitor has passed group A inspection.

TERMINAL TO TERMINAL INSULATION RESISTANCE MEASUREMENTS

Capacitance values	Minimum insulation resistance ^{1/}		
	Characteristic E	Characteristic F	Characteristic K
0.33 microfarads and less greater than 0.33 microfarads	At 25°C 6,000 megaohms 2,000 megaohm ^{2/}	At 25°C 4,500 megaohms 1500 megaohm microfarads ^{2/}	At 25°C 18,000 megaohms 6,000 megaohm microfarads ^{2/}
greater than 0.033 microfarads	At 85°C 20 megaohm microfarads ^{2/}	At 85°C 15 megaohm microfarads ^{2/}	-
0.067 microfarads and less Greater than 0.67 microfarads	-	-	At 125°C 150 megaohms 10 megaohm microfarads ^{2/}

^{1/} A potential equal to the DC rated voltage or 500 VDC, whichever is less shall be applied.

^{2/} Product obtained by multiplying the capacitance in microfarads by the insulation resistance in megaohms.

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STANDARD RATINGS

Type Designation ^{1/}	De Voltage Rating (see figure 2)	Capacitance μ F	Capacitance Tolerance ^{2/}	Characteristics	Vibration Grade	Case Size		
						Characteristics E	Characteristics F	Characteristics K
CP5-B-B105K1	100	1	K	E, F	1	A2	A1	-
CP5-B-EB205K1	100	2	K	E	1	B1	-	-
CP5-B-B405K1	100	4	K	E, F	1	C2	C1	-
CP5-B-FB805K1	100	8	K	F	1	-	C1	-
CP5-B-FB106K1	100	10	K	F	1	-	C2	-
CP5-B-FC504K1	200	0.5	K	F	1	-	A1	-
CP5-B-EC105K1	200	1	K	E	1	B1	-	-
CP5-B-EC205K1	200	2	K	E	1	C1	-	-
CP5-B-KE503K1	400	0.05	K	K	1	-	-	A1
CP5-B-KE104K1	400	0.10	K	K	1	-	-	A1
CP5-B-KE254K1	400	0.25	K	K	1	-	-	A1
CP5-B-KE504K1	400	0.5	K	K	1	-	-	B1
CP5-B-KE105K1	400	1	K	K	1	-	-	B1
CP5-B-EF254K1	600	0.25	K	E	1	A1	-	-
CP5-B-F504K1	600	0.5	K	E, F	1	A3	A2	-
CP5-B-F105K1	600	1	K	E, F	1	B2	B1	-
CP5-B-EF205K1	600	2	K	E	1	C2 ^{3/}	-	-
CP5-B-EG503K1	1,000	0.05	K	E	1	A1	-	-
CP5-B-EG104K1	1,000	0.1	K	E	1	A1	-	-
CP5-B-G254K1	1,000	0.25	K	E, F	1	A2	A1	-
CP5-B-EG504K1	1,000	0.5	K	E	1	B1	-	-
CP5-B-EG105K1	1,000	1	K	E	1	C2 ^{3/}	-	-
CP5-B-EF503V1	600	0.05-0.05 4 /	V	E	1	A1	-	-
CP5-B-EF104V1	600	0.1-0.1	V	E	1	A1	-	-
CP5-B-F254V1	600	0.25-0.25	V	E, F	1	A3	A2	-
CP5-B-F504V1	600	0.5-0.5	V	E, F	1	B2	B1	-
CP5-B-EF105V1	600	1-1	V	E	1	C2 ^{3/}	-	-
CP5-B-EG503V1	1,000	0.05-0.05	V	E	1	A1	-	-
CP5-B-G104V1	1,000	0.1-0.1	V	E, F	1	A2	A1	-
CP5-B-EG254V1	1,000	0.25-0.25	V	E	1	B1	-	-
CP5-B-EG504V1	1,000	0.5-0.5	V	E	1	C2 ^{3/}	-	-
CP5-B5-E504V1	400	0.5-0.5-0.5	V	E, F	1	C2	C1	-
CP5-B5-F104V1	600	0.1-0.1-0.1	V	E, F	1	A2	A1	-
CP5-B5EF254V1	600	0.25-0.25-0.25	V	E	1	B1	-	-
CP5-B5EF504V1	600	0.5-0.5-0.5	V	E	1	C2 ^{3/}	-	-
CP5-B5EG503V1	1,000	0.05-0.05-0.05	V	E	1	A1	-	-
CP5-B5EG104V1	1,000	0.1-0.1-0.1	V	E	1	B1	-	-
CP5-B5EG254V1	1,000	0.25-0.25-0.25	V	E	1	C2 ^{3/}	-	-

^{1/} Complete type designation shall include additional symbols to complete style designation. Indicate circuit (where applicable) and characteristics (where applicable).

^{2/} Capacitance tolerance in percent: K, ± 10 ; V, $+20$, -10 .

^{3/} For styles CP54 and CP55, case size is C3.

^{4/} For multiple-unit capacitors, the watt-second rating is the sum of the watt-second ratings of the component sections.

Case Size	A ± 0.062	B ± 0.062	+0.062 C -0.125	D ± 0.031	E ± 0.062
A1	1.812	1.000	0.750	2.125	2.500
A2	1.812	1.000	0.875	2.125	2.500
A3	1.812	1.000	1.000	2.125	2.500
B1	2.000	1.750	0.875	2.375	2.750
B2	2.000	1.750	1.000	2.375	2.750
C1	2.000	2.000	1.000	2.375	2.750
C2	2.000	2.000	1.125	2.375	2.750
C3	2.000	2.000	1.250	2.375	2.750

Refer to MIL-C-25 / 4 for additional information.