

RECTANGULAR METAL CASE PAPER / POLYESTER FOIL CAPACITORS

TYPE CQ72



FEATURES

- Capacitance values to 15 μF
- Drawn rectangular metal cases
- Solder lug or pillar terminals
- Voltage Ratings 400 to 12,500 VDC
- Approved to MIL-PRF-19978

MAJOR APPLICATIONS:

Bypass coupling, filtering in power supply, radar and other high voltage applications.

PHYSICAL CHARACTERISTICS

CONSTRUCTION:

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

CASE: Hermetically sealed metal enclosure. Styles and dimensions are in Guide to Ordering section in the front of the catalog.

TERMINALS:

See table II for the terminal available for each voltage and tables below for terminal description, number and size.

Symbol	Type of Terminal
B	Solder lug (non removable)
D, H	Pillar insulator (for use at altitudes up to 7,500 feet)
E	Pillar insulator (for use at altitudes up to 50,000 feet)

Terminal Number	Terminal Symbols	Terminal Dimensions			
		V Max.	Y Min.	Y Max.	Z
1	B	0.75	-	-	0.812
2	E	1.375	0.190-32	0.216-24	0.812
3	E	1.75	0.190-32	0.216-24	1.000
4	D, E	2.75	0.190-32	0.3125-18	1.438
5	H	4.250	0.375-16	0.500-13	3.000

Shape of terminal B (drilled, punched, forked, or slotted) is optional.

Capacitors having terminal D or E shall be supplied with necessary terminal hardware for each terminal (two nuts, one of these may be a fixed nut on to the insulator, and one lock washer); in addition, capacitors rated at 3,000 VDC or less shall be supplied with a solder lug capable of accommodating a No. 14 AWG wire for each terminal.

MARKING:

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

ELECTRICAL SPECIFICATIONS

CAPACITANCE RANGE: 0.10 μF to 15.0 μF

DC VOLTAGE RANGE: 400 VDC to 12,500 VDC

CAPACITANCE TOLERANCE: $K \pm 10\%$

OPERATING TEMPERATURE:

- Characteristic E -65°C to +85°C
- Characteristic F -55°C to +85°C
- Characteristic K -55°C to +125°C

VOLTAGE DERATING:

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

DISSIPATION FACTOR: 1.0% maximum

INSULATION RESISTANCE: Measured at rated voltage or 500 VDC whichever is less.

DIMENSIONS (in inches)

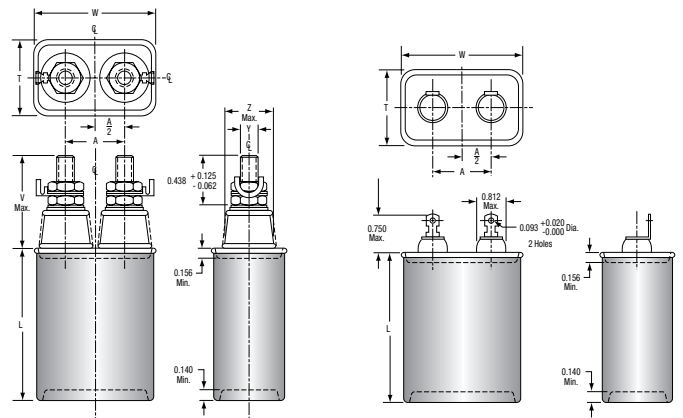


TABLE 1: TERMINAL TO TERMINAL INSULATION RESISTANCE

Capacitance Rating	Minimum Insulation Resistance
Characteristic E	
0 to 0.6 microfarad	At 25°C 25,000 megohms
Greater than 0.6 microfarad	15,000 megohm-microfarads ^{1/}
0 to 0.15 microfarad	At 85°C 2,000 megohms
Greater than 0.15 microfarad	300 megohm-microfarads ^{1/}
Characteristic K	
0 to 0.6 microfarad	At 25°C 25,000 megohms
Greater than 0.15 microfarad	15,000 megohm-microfarads ^{1/}
0 to 0.8 microfarad	At 85°C 250 megohms
Greater than 0.08 microfarad	20 megohm-microfarads ^{1/}
Characteristic F	
0.33 microfarad and less	At 25°C 6,000 megohms
Greater than 0.33 microfarad	2,000 megohm-microfarads ^{1/}
0.33 microfarad and less	At 85°C 600 megohms
Greater than 0.33 microfarad	20 megohm-microfarads ^{1/}
Characteristic G	
0.33 microfarad and less	At 25°C 4,500 megohms
Greater than 0.33 microfarad	1,500 megohm-microfarads ^{1/}
0.033 microfarad and less	At 85°C 450 megohms
Greater than 0.033 microfarad	15 megohm-microfarads ^{1/}

^{1/} Product obtained by multiplying capacitance in microfarads by the insulation resistance in megohms.

RECTANGULAR METAL CASE PAPER / POLYESTER FOIL CAPACITORS

TABLE 2

Part Number	Capacitance μF	Vibration Grade	Case Size Characteristic				Available Terminal Identification No. Terminal			
			E	K	F	G	B	D	E	H
400 DC Voltage Rating (Volt)										
CQ72-1KE254K3	0.25	3	-	A1	-	-	1	-	2	-
CQ72-1-E504K3	0.5	3	A1	A2	-	-	1	-	2	-
CQ72-1-E105K3	1.0	3	A1	A3	-	-	1	-	2	-
CQ72-1-E205K3	2	3	A2	A5	-	-	1	-	2	-
CQ72-1-E405K3	4	3	B2	B6	-	-	1	-	2	-
CQ72-1-E605K3	6	3	B6	C3	-	-	1	-	2	-
CQ72-1-E805K3	8	3	C3	D4	-	-	1	-	2	-
CQ72-1-E106K3	10	3	C4	E4	-	-	1	-	2	-
CQ72-1-E126K3	12	3	D2	E6	-	-	1	-	2	-
CQ72-1-E156K3	15	3	D5	G4	-	-	1	-	2	-
600 DC Voltage Rating (Volt)										
CQ72-1FF254K1	0.25	1	-	-	A1	-	1	-	2	-
CQ72-1-F504K3	0.5	3	A1	A2	-	-	1	-	2	-
CQ72-1-F105K-	1.0	1.3	A2	A3	-	-	1	-	2	-
CQ72-1-F205K-	2	1.3	A2	B4	A4	A3	1	-	2	-
CQ72-1-F405K-	4	1.3	B3	D2	B4	B3	1	-	2	-
CQ72-1-F605K-	6	1.3	B6	E4	C2	B6	1	-	2	-
CQ72-1-F805K-	8	1.3	C2	F1	C3	C2	1	-	2	-
CQ72-1-F106K-	10	1.3	C4	J2	D3	C4	1	-	2	-
CQ72-1-F126K3	12	3	E2	J3	-	-	1	-	2	-
CQ72-1-F156K3	15	3	E5	J6	-	-	1	-	2	-
1,000 DC Voltage Rating (Volt)										
CQ72-1FG104K1	0.1	1	-	-	A1	-	1	-	2	-
CQ72-1-G254K-	0.25	1.3	-	A2	A2	-	1	-	2	-
CQ72-1-G504K-	0.5	1.3	A1	A3	A2	-	1	-	2	-
CQ72-1-G105K-	1.0	1.3	A2	B3	A3	A2	1	-	2	-
CQ72-1-G205K-	2	1.3	A5	C4	A6	A5	1	-	2	-
CQ72-1-G405K-	4	1.3	B6	F1	C2	B6	1	-	2	-
CQ72-1-G605K-	6	1.3	C4	G2	D3	C4	1	-	2	-
CQ72-1-G805K-	8	1.3	D2	J2	D5	D2	1	-	2	-
CQ72-1-G106K-	10	1.3	D5	J5	E5	D5	1	-	2	-
CQ72-1-G126K-	12	1.3	E4	J6	E6	E4	1	-	2	-
CQ72-1-G156K-	15	1.3	F1	J11	G2	F1	1	-	2	-
1,500 DC Voltage Rating (Volt)										
CQ72-1-H104K	0.1	1.3	A1	A1	A2	-	1	-	2	-
CQ72-1-H254K	0.25	1.3	A1	A2	A3	A2	1	-	2	-
CQ72-1-H504K	0.5	1.3	A2	A5	A3	-	1	-	2	-
CQ72-1-H105K	1.0	1.3	A5	B5	A6	A5	1	-	2	-
CQ72-1-H205K	2	1.3	B6	D4	B6	B5	1	-	2	-
CQ72-1-H405K	4	1.3	D5	G4	D4	C4	1	-	2	-
CQ72-1-H605K	6	1.3	G1	J6	E5	D5	1	-	2	-
CQ72-1-H805K	8	1.3	J2	J10	F2	F1	1	-	2	-
CQ72-1-H106K	10	1.3	J4	-	G4	G2	1	-	2	-
CQ72-1-H126K	12	1.3	J6	-	J3	G2	1	-	2	-
CQ72-1-H156K	15	1.3	J10	-	J6	J3	1	-	2	-
2,000 DC Voltage Rating (Volt)										
CQ72E1FJ254K1	0.25	1	-	-	B1	-	-	-	3	-
CQ72E1FJ504K1	0.5	1	-	-	B2	-	-	-	3	-
CQ72E1-J105K	1.0	1.3	-	C3	B6	B3	-	-	3	-
CQ72E1-J205K	2	1.3	C4	E6	C4	C3	-	-	3	-
CQ72E1-J405K	4	1.3	F1	J4	E6	E3	-	-	3	-
CQ72E1-J605K	6	1.3	G3	J8	G4	G1	-	-	3	-
CQ72E1-J805K	8	1.3	J2	-	J4	G3	-	-	3	-
CQ72E1-J106K	10	1.3	J5	-	J7	J3	-	-	3	-
CQ72E1-J126K	12	1.3	J6	-	J9	J5	-	-	3	-
CQ72E1-J156K	15	1.3	J11	-	J10	J7	-	-	3	-
2,500 DC Voltage Rating (Volt)										
CQ72E1FK104K1	0.1	1	-	-	B1	-	-	-	3	-
CQ72E1-K254K	0.25	1	-	-	B2	B1	-	-	3	-
CQ72E1-K504K	0.5	1.3	-	B5	B4	B3	-	-	3	-
CQ72E1-K105K	1.0	1.3	-	D2	D2	D1	-	-	3	-
CQ72E1-K205K	2	1.3	C4	G4	E5	D5	-	-	3	-
CQ72E1-K405K	4	1.3	E6	J8	J2	-	-	-	3	-
CQ72E1-K605K	6	1.3	J2	-	J6	J4	-	-	3	-
CQ72E1-K805K	8	1.3	J5	-	J8	J6	-	-	3	-
CQ72E1-K106K	10	1.3	J7	-	J10	J8	-	-	3	-
CQ72E1-K126K	12	1.3	J11	-	K3	J10	-	-	3	-

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TYPE CQ72

TABLE 2

Part Number	Capacitance μF	Vibration Grade	Case Size Characteristic				Available Terminal Identification No. Terminal			
			E	K	F	G	B	D	E	H
3,000 DC Voltage Rating (Volt)										
CQ72E1-L104K1	0.1	1	-	-	B2	B1	-	-	3	-
CQ72E1-L254K1	0.25	1	-	-	B3	B2	-	-	3	-
CQ72E1-L504K1	0.5	1	-	-	B6	B5	-	-	3	-
CQ72E1-L105K	1.0	1.3	D1	E4	E4	E3	-	-	3	-
CQ72E1-L205K	2	1.3	E2	J2	G2	G1	-	-	3	-
CQ72E1-L405K	4	1.3	G4	J11	J7	J3	-	-	3	-
CQ72E1-L605K	6	1.3	J5	-	K2	J9	-	-	3	-
4,000 DC Voltage Rating (Volt)										
CQ72E1FM104K1	0.1	1	-	-	E1	-	-	-	4	-
CQ72E1-M254K	0.25	1.3	-	C1	E3	E1	-	-	4	-
CQ72E1-M504K	0.5	1.3	-	C4	E5	E3	-	-	4	-
CQ72E1-M105K	1.0	1.3	C2	F2	G2	E6	-	-	4	-
CQ72E1-M205K	2	1.3	E6	J7	J6	J4	-	-	4	-
CQ72E1-M405K	4	1.3	J5	-	J11	J10	-	-	4	-
5,000 DC Voltage Rating (Volt)										
CQ72E1-N104K	0.1	1.3	C1	-	E1	-	-	-	4	-
CQ72E1-N254K	0.25	1.3	C1	-	E3	-	-	-	4	-
CQ72E1-N504K	0.5	1.3	C1	E4	E6	E4	-	-	4	-
CQ72E1-N105K	1.0	1.3	D2	G4	J4	J2	-	-	4	-
CQ72E1-N205K	2	1.3	F2	J11	J11	J6	-	-	4	-
CQ72E1-N405K1	4	1	-	-	K4	K3	-	-	4	-
6,000 DC Voltage Rating (Volt)										
CQ72D1-P104K	0.1	1.3	C1	-	E3	E2	-	4	-	-
CQ72D1-P254K-	0.25	1.3	C1	D2	E5	E4	-	4	-	-
CQ72D1-P504K-	0.5	1.3	C1	E6	J3	J2	-	4	-	-
CQ72D1-P105K-	1.0	1.3	E5	J6	J11	J9	-	4	-	-
CQ72D1-P205K-	2	1.3	G1	-	L1	K3	-	4	-	-
7,500 DC Voltage Rating (Volt)										
CQ72D1-R104K	0.1	1.3	C1	C1	E5	E3	-	4	-	-
CQ72D1-R254K	0.25	1.3	C2	G1	J2	J1	-	4	-	-
CQ72D1-R504K	0.5	1.3	E4	J3	J6	J4	-	4	-	-
CQ72D1-R105K	1.0	1.3	G3	-	K3	-	-	4	-	-
CQ72D1-R205K	2	1.3	J10	-	L2	K4	-	4	-	-
10,000 DC Voltage Rating (Volt)										
CQ72D1-S104K	0.1	1.3	C2	E2	-	-	-	4	-	-
CQ72D1-S254K	0.25	1.3	E3	J3	-	-	-	4	-	-
CQ72-1-S504K	0.5	1.3	F2	J9	K4	K3	-	4	-	5
CQ72-1-S105K	1.0	1.3	J6	-	L2	K4	-	4	-	5
CQ72-1-S205K1	2	1	-	-	M1	L3	-	4	-	5
12,500 DC Voltage Rating (Volt)										
CQ72-1-T104K	0.1	1.3	E2	J1	K1	-	-	4	-	5
CQ72-1-T254K	0.25	1.3	E4	J5	K2	-	-	4	-	5
CQ72-1-T504K	0.5	1.3	J4	-	L1	K4	-	4	-	5
CQ72-1-T105K	1.0	1.3	J10	-	M1	L3	-	4	-	5
CQ72-1-T205K1	2	1	-	-	M2	M1	-	4	-	5

^{1/} Complete part number shall include additional symbols to indicate terminal, characteristic, and vibration grade, as applicable.

RECTANGULAR METAL CASE PAPER / POLYESTER FOIL CAPACITORS

TABLE 3

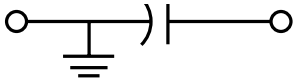
Case Size ^{1/}	Case Dimensions (in inches)				Retainer Part Number ^{2/}
	W ±0.062	T ±0.062	L ±0.062	A +0.0625, -0.187	
A1	1.812	1.062	1.625	0.812	CQ072-A1
A2	1.812	1.062	2.250	0.812	CQ072-A2
A3	1.812	1.062	2.875	0.812	CQ072-A3
A4	1.812	1.062	3.250	0.812	CQ072-A4
A5	1.812	1.062	3.875	0.812	CQ072-A5
A6	1.812	1.062	4.750	0.812	CQ072-A6
B1	2.500	1.188	2.500	1.125	CQ072-B1
B2	2.500	1.188	2.875	1.125	CQ072-B2
B3	2.500	1.188	3.500	1.125	CQ072-B3
B4	2.500	1.188	3.875	1.125	CQ072-B4
B5	2.500	1.188	4.250	1.125	CQ072-B5
B6	2.500	1.188	4.750	1.125	CQ072-B6
C1	3.750	1.250	3.250	2.000	CQ072-C1
C2	3.750	1.250	3.875	2.000	CQ072-C2
C3	3.750	1.250	4.250	2.000	CQ072-C3
C4	3.750	1.250	4.750	2.000	CQ072-C4
D1	3.750	1.750	3.250	2.000	CQ072-D1
D2	3.750	1.750	3.875	2.000	CQ072-D2
D3	3.750	1.750	4.000	2.000	CQ072-D3
D4	3.750	1.750	4.250	2.000	CQ072-D4
D5	3.750	1.750	4.750	2.000	CQ072-D5
E1	3.750	2.250	2.750	2.000	CQ072-E1
E2	3.750	2.250	3.375	2.000	CQ072-E2
E3	3.750	2.250	3.875	2.000	CQ072-E3
E4	3.750	2.250	4.500	2.000	CQ072-E4
E5	3.750	2.250	4.750	2.000	CQ072-E5
E6	3.750	2.250	5.125	2.000	CQ072-E6
F1	3.750	2.500	4.750	2.000	CQ072-F1
F2	3.750	2.500	5.750	2.000	CQ072-F2
G1	3.750	3.188	4.500	2.000	CQ072-G1
G2	3.750	3.188	4.750	2.000	CQ072-G2
G3	3.750	3.188	5.125	2.000	CQ072-G3
G4	3.750	3.188	5.500	2.000	CQ072-G4
J1	4.562	3.750	3.875	2.000	CQ072-J1
J2	4.562	3.750	4.375	2.000	CQ072-J2
J3	4.562	3.750	4.750	2.000	CQ072-J3
J4	4.562	3.750	5.125	2.000	CQ072-J4
J5	4.562	3.750	5.500	2.000	CQ072-J5
J6	4.562	3.750	6.000	2.000	CQ072-J6
J7	4.562	3.750	6.500	2.000	CQ072-J7
J8	4.562	3.750	7.000	2.000	CQ072-J8
J9	4.562	3.750	7.500	2.000	CQ072-J9
J10	4.562	3.750	8.500	2.000	CQ072-J10
J11	4.562	3.750	9.625	2.000	CQ072-J11
K1	8.000	4.000	5.500	4.500	CQ072-K1
K2	8.000	4.000	7.000	4.500	CQ072-K2
K3	8.000	4.000	9.250	4.500	CQ072-K3
K4	8.000	4.000	11.000	4.500	CQ072-K4
L1	13.500	4.125	7.000	6.750	CQ072-L1
L2	13.500	4.125	9.250	6.750	CQ072-L2
L3	13.500	4.125	13.125	6.750	CQ072-L3
M1	13.500	5.125	12.875	6.750	CQ072-M1
M2	13.500	5.125	13.750	6.750	CQ072-M2

^{1/} For case size J, the retainers are attached to the sides of the case which are parallel to the centerline of the terminals.

^{2/} Complete retainer part number will include the symbol "F" for footed or "S" for the spaded design.

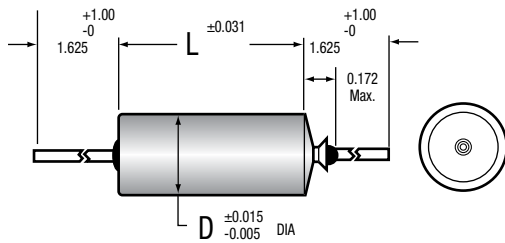
For additional information and retainer size refer to MIL-PRF-19978.

SECTION GROUNDED TO CASE

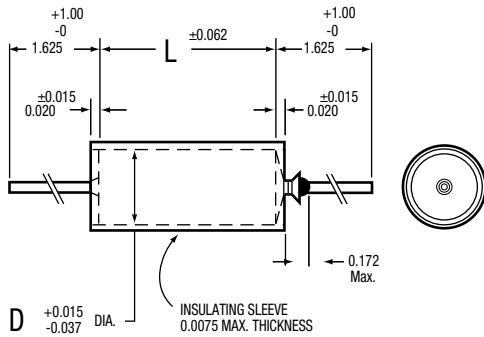


DIMENSIONS (in inches)

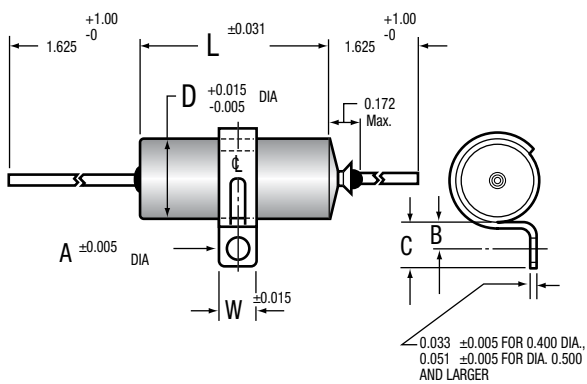
CASE STYLE 01



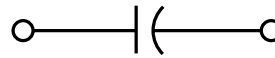
CASE STYLE 03



CASE STYLE 12

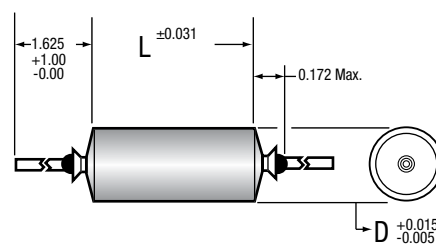


SECTION INSULATED FROM CASE

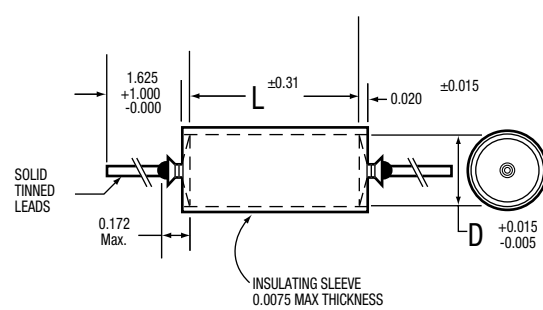


DIMENSIONS (in inches)

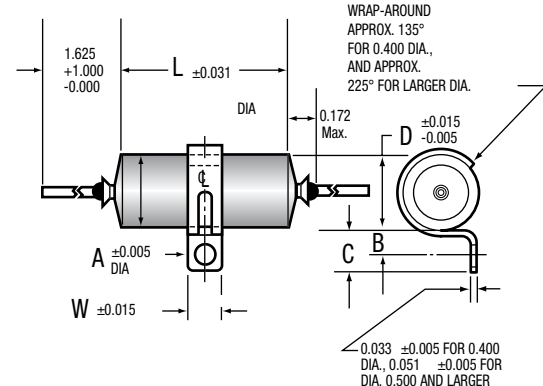
CASE STYLE 02



CASE STYLE 04



CASE STYLE 13



The length of grounded styles is 0.062" shorter than the length shown in tabulations in the catalog.

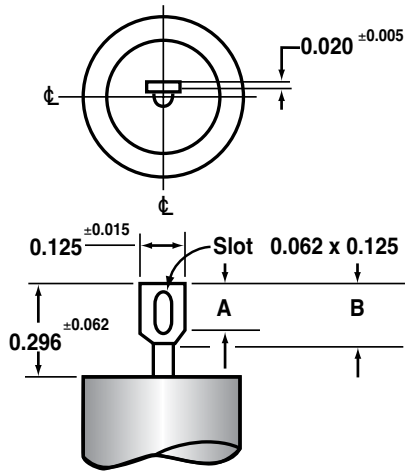
GUIDE TO ORDERING

BRACKET DIMENSIONS (Style 12 & 13 / in inches)

D	W	A	B	C
0.400	0.250	0.144	0.187±0.015	0.312±0.031
0.500	0.500	0.156	0.250±0.031	0.437±0.062
0.562	0.500	0.156	0.250±0.031	0.437±0.062
0.670	0.500	0.156	0.250±0.031	0.437±0.062
0.750	0.500	0.156	0.250±0.031	0.437±0.062
1.000	0.500	0.156	0.250±0.031	0.437±0.062

*Based on 1 in. = 25.4 mm

TYPICAL TAB TERMINAL DIMENSIONS



Dwg. No A-9525

A = 0.156 ± 0.015 " (3.96 ± 0.38 mm)

B = 0.187 ± 0.015 " (4.75 ± 0.38 mm)

Tab Terminal available only on case diameters equal to or greater than 0.400 inches.

T1 & T3 styles are supplied with one tab terminal on the insulated end and a ground lead on the opposite end.

ORDERING TABLES

METAL CASE

EXAMPLE:

218P

223

X9

100

S

02

CATALOG NUMBERING SYSTEM

Case style

Terminal: S = Wire leads T = Soldering tab*.

DC Voltage rating: Expressed in volts.
See standard ratings charts for voltage code.

Capacitance Tolerance: X0 = $\pm 20\%$
X9 = $\pm 10\%$
X5 = $\pm 5\%$
X2 = $\pm 2\%$

Capacitance: Expressed in picofarads, the first two digits are significant figures; the third is the number of zeros following. See standard ratings tables for capacitance code.

Dearborn type number: Identifies the basic capacitor.

* Soldering tabs are available only on case diameters equal to or greater than 0.400 inches.

WRAP AND FILL

EXAMPLE:

430P

183

X9

100

X

F

CATALOG NUMBERING SYSTEM

"F" applies only to "ROHS" compliant parts.

Terminal: No suffix required unless specified on applicable specification sheet (Terminal style).

DC Voltage rating: Expressed in volts.
See standard ratings charts for voltage code.

Capacitance Tolerance: X0 = $\pm 20\%$
X9 = $\pm 10\%$
X5 = $\pm 5\%$
X2 = $\pm 2\%$

Capacitance: Expressed in picofarads, the first two digits are significant figures; the third is the number of zeros following. See standard ratings tables for capacitance code.

Dearborn type number: Identifies the basic capacitor.