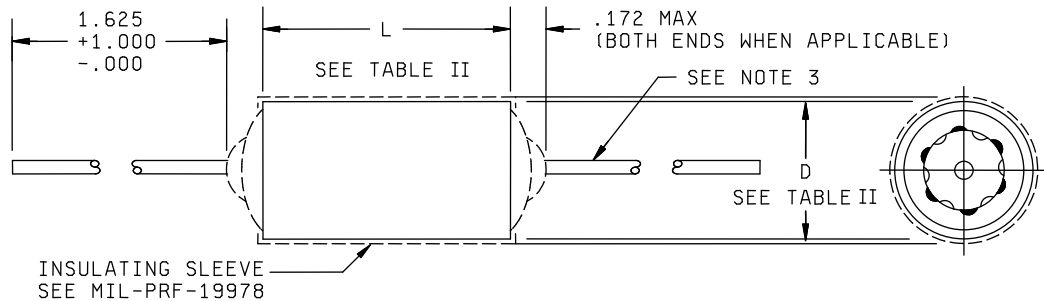


PERFORMANCE SPECIFICATION SHEET

CAPACITOR, FIXED, PLASTIC DIELECTRIC, AXIAL-WIRE TERMINAL, TUBULAR (INSULATED) (HERMETICALLY SEALED IN METAL CASES), ESTABLISHED RELIABILITY, STYLE QQR44

This specification sheet is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the capacitors described herein
shall consist of this specification sheet and [MIL-PRF-19978](#).



Inches	mm	Inches	mm	Inches	mm
.001	0.03	.172	4.37	.400	10.16
.004	0.10	.175	4.45	.562	14.27
.020	0.51	.195	4.95	1.000	25.40
.025	0.64	.235	5.97	1.562	39.67
.032	0.81	.312	7.92	1.625	41.28

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given in millimeters and are for general information only.
3. Leads shall be solder coated solid wire, .020 inch (No. 24 AWG) for cases .175 inch and .195 inch in diameter, .025 inch (No. 22 AWG) for cases .235 inch through .312 inch diameter, and .032 inch (No. 20 AWG) for cases .400 inch diameter and above. Tolerance on all lead wire diameters shall be + .004 inch, - .001 inch.
4. Capacitors with dimension L of 1.562 inches or D of .562 inch and larger, are not intended to be supported by their leads. These capacitors shall be supported with a supplementary means of mounting, such as a wrap-around band. The supporting device will not be supplied with the capacitor.
5. Lead length may be a minimum of 1 inch long for use in tape and reel packaging when specified in the ordering data.

FIGURE 1. Style QQR44 capacitors.



REQUIREMENTS:

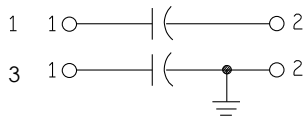
Dimensions and configuration: See [figure 1](#) and [table II](#).

Dielectric material: Polyphenylene sulfide (PPS).

Case material: Nonmagnetic (end seal may be of magnetic material).

Terminals: Axial-wire lead (see [figure 1](#)).

Circuit diagram:



Rated voltage: See [table II](#).

Rated temperature: -55° to +125°C.

Capacitance (nominal): See [table II](#).

Capacitance tolerance: See [table II](#).

Dissipation factor (DF) (max): 0.15 percent.

Burn-in: In accordance with [MIL-PRF-19978](#).

Radiographic inspection: In accordance with [MIL-PRF-19978](#).

Seal: [MIL-STD-202-112](#), test condition letter B except with mineral oil.

Dielectric withstanding voltage (DWV):

Sleeving: In accordance with [MIL-PRF-19978](#).

Barometric pressure (qualification only): In accordance with [MIL-PRF-19978](#).

Test points:

Circuit diagram 1: Between terminals and case.

Circuit diagram 3: Between ungrounded terminal and case.

Insulation resistance (IR):

Sleeving: In accordance with [MIL-PRF-19978](#).

Terminal to terminal: See [table I](#).

Vibration, high frequency: [MIL-STD-202-204](#), test condition B, with the following exception:

Direction and duration of motion: 4 hours in each of two mutually perpendicular directions (total of 8 hours), one parallel and the other perpendicular to the cylindrical axis.

Salt atmosphere (corrosion): In accordance with [MIL-PRF-19978](#).

Immersion:

DWV:

Sleeving: In accordance with [MIL-PRF-19978](#).

IR:

Sleeving: In accordance with [MIL-PRF-19978](#).

Solderability: In accordance with [MIL-PRF-19978](#).

Terminal strength: [MIL-STD-202-211](#), test condition letter D.

Moisture resistance:

DWV:

Sleeving: In accordance with [MIL-PRF-19978](#).

IR:

Sleeving: In accordance with [MIL-PRF-19978](#).

Dielectric absorption (not applicable to values of 0.01 μ F or less) (max): 0.04 percent.

Stability at low and high temperatures:

Low temperature:

Test temperature: -55°C +0°C, -5°C.

Capacitance change (max): ± 2.5 percent.

High temperature:

Test temperature: +125°C +0°C, -5°C.

Capacitance change (max): ± 3 percent.

Life:

Capacitance change (max): ± 3 percent.

Resistance to soldering heat: In accordance with [MIL-PRF-19978](#).

TABLE I. Terminal-to-terminal insulation resistance.

Capacitance rating	Minimum insulation resistance
0 to 0.5 microfarad Greater than 0.5 microfarad	<u>At +25°C</u> 150,000 megohms
	75,000 megohm-microfarads <u>1/</u>
0 to 0.1 microfarad Greater than 0.1 microfarad	<u>At +125°C</u> 5,000 megohms
	500 megohm-microfarads <u>1/</u>

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

TABLE II. STYLE CQR44 capacitors.

Part or Identifying Number (PIN) <u>1/</u>	DC voltage rating (volts)	Capacitance rating (μF)	Capacitance tolerance	Failure rate level	Case dimensions <u>2/ 3/</u>			
					Circuit 1		Circuit 3	
					L ± .031	D + .015 - .005	L ± .031	D + .015 - .005
CQR44A-VA392-3-	50	.0039	J, K	M, P, R, S	.750	.175	.688	.175
CQR44A-VA472-3-	50	.0047	J, K	M, P, R, S	.750	.175	.688	.175
CQR44A-VA562-3-	50	.0056	J, K	M, P, R, S	.750	.195	.688	.195
CQR44A-VA682-3-	50	.0068	J, K	M, P, R, S	.750	.195	.688	.195
CQR44A-VA393-3-	50	.039	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VA473-3-	50	.047	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VA563-3-	50	.056	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VA683-3-	50	.068	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VA823-3-	50	.082	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VA104-3-	50	.1	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VA124-3-	50	.12	J, K	M, P, R, S	1.375	.400	1.312	.400
CQR44A-VA154-3-	50	.15	J, K	M, P, R, S	1.375	.400	1.312	.400
CQR44A-VA184-3-	50	.18	J, K	M, P, R, S	1.125	.562	1.062	.562
CQR44A-VA224-3-	50	.22	J, K	M, P, R, S	1.125	.562	1.062	.562
CQR44A-VA274-3-	50	.27	J, K	M, P, R, S	1.375	.562	1.312	.562
CQR44A-VA334-3-	50	.33	J, K	M, P, R, S	1.375	.562	1.312	.562
CQR44A-VA394-3-	50	.39	J, K	M, P, R, S	1.875	.562	1.812	.562
CQR44A-VA474-3-	50	.47	J, K	M, P, R, S	1.875	.562	1.812	.562
CQR44A-VA564-3-	50	.56	J, K	M, P, R, S	1.875	.670	1.812	.670
CQR44A-VA684-3-	50	.68	J, K	M, P, R, S	1.875	.670	1.812	.670
CQR44A-VA824-3-	50	.82	J, K	M, P, R, S	1.875	.750	1.812	.750
CQR44A-VA105-3-	50	1.0	J, K	M, P, R, S	1.875	.750	1.812	.750
CQR44A-VB222-3-	100	.0022	J, K	M, P, R, S	.750	.175	.688	.175
CQR44A-VB272-3-	100	.0027	J, K	M, P, R, S	.750	.175	.688	.175
CQR44A-VB332-3-	100	.0033	J, K	M, P, R, S	.750	.175	.688	.175
CQR44A-VB392-3-	100	.0039	J, K	M, P, R, S	.750	.195	.688	.195
CQR44A-VB472-3-	100	.0047	J, K	M, P, R, S	.750	.195	.688	.195
CQR44A-VB562-3-	100	.0056	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VB682-3-	100	.0068	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VB822-3-	100	.0082	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VB103-3-	100	.01	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VB183-3-	100	.018	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VB223-3-	100	.022	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VB273-3-	100	.027	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VB333-3-	100	.033	J, K	M, P, R, S	.875	.312	.812	.312

See footnotes at end of table.

TABLE II. STYLE CQR44 capacitors – Continued.

PIN <u>1/</u>	DC voltage rating (volts)	Capacitance rating (μ F)	Capacitance tolerance	Failure rate level	Case dimensions <u>2/ 3/</u>			
					Circuit 1		Circuit 3	
					L $\pm$.031	D $\pm$.015 - .005	L $\pm$.031	D $\pm$.015 - .005
CQR44A-VB393-3-	100	.039	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VB473-3-	100	.047	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VB563-3-	100	.056	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VB683-3-	100	.068	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VB823-3-	100	.082	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VB104-3-	100	.1	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VB124-3-	100	.12	J, K	M, P, R, S	1.375	.562	1.312	.562
CQR44A-VB154-3-	100	.15	J, K	M, P, R, S	1.375	.562	1.312	.562
CQR44A-VB184-3-	100	.18	J, K	M, P, R, S	1.625	.562	1.562	.562
CQR44A-VB224-3-	100	.22	J, K	M, P, R, S	1.625	.562	1.562	.562
CQR44A-VB274-3-	100	.27	J, K	M, P, R, S	1.625	.670	1.562	.670
CQR44A-VB334-3-	100	.33	J, K	M, P, R, S	1.625	.670	1.562	.670
CQR44A-VB394-3-	100	.39	J, K	M, P, R, S	1.875	.750	1.812	.750
CQR44A-VB474-3-	100	.47	J, K	M, P, R, S	1.875	.750	1.812	.750
CQR44A-VB564-3-	100	.56	J, K	M, P, R, S	2.375	.750	2.312	.750
CQR44A-VB684-3-	100	.68	J, K	M, P, R, S	2.375	.750	2.312	.750
CQR44A-VB824-3-	100	.82	J, K	M, P, R, S	1.875	1.000	1.812	1.000
CQR44A-VB105-3-	100	1.0	J, K	M, P, R, S	1.875	1.000	1.812	1.000
CQR44A-VC102-3-	200	.001	J, K	M, P, R, S	.750	.175	.688	.175
CQR44A-VC122-3-	200	.0012	J, K	M, P, R, S	.750	.195	.688	.195
CQR44A-VC152-3-	200	.0015	J, K	M, P, R, S	.750	.195	.688	.195
CQR44A-VC182-3-	200	.0018	J, K	M, P, R, S	.750	.195	.688	.195
CQR44A-VC222-3-	200	.0022	J, K	M, P, R, S	.750	.195	.688	.195
CQR44A-VC272-3-	200	.0027	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VC332-3-	200	.0033	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VC822-3-	200	.0082	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VC103-3-	200	.01	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VC123-3-	200	.012	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VC153-3-	200	.015	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VC183-3-	200	.018	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VC223-3-	200	.022	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VC273-3-	200	.027	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VC333-3-	200	.033	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VC393-3-	200	.039	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VC473-3-	200	.047	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VC563-3-	200	.056	J, K	M, P, R, S	1.125	.500	1.062	.500
CQR44A-VC683-3-	200	.068	J, K	M, P, R, S	1.125	.500	1.062	.500
CQR44A-VC823-3-	200	.082	J, K	M, P, R, S	1.125	.562	1.062	.562
CQR44A-VC104-3-	200	.1	J, K	M, P, R, S	1.125	.562	1.062	.562
CQR44A-VC124-3-	200	.12	J, K	M, P, R, S	1.875	.562	1.812	.562
CQR44A-VC154-3-	200	.15	J, K	M, P, R, S	1.875	.562	1.812	.562
CQR44A-VC184-3-	200	.18	J, K	M, P, R, S	1.875	.670	1.812	.670
CQR44A-VC224-3-	200	.22	J, K	M, P, R, S	1.875	.670	1.812	.670
CQR44A-VC274-3-	200	.27	J, K	M, P, R, S	2.125	.750	2.062	.750
CQR44A-VC334-3-	200	.33	J, K	M, P, R, S	2.125	.750	2.062	.750
CQR44A-VC394-3-	200	.39	J, K	M, P, R, S	1.875	1.000	1.812	1.000
CQR44A-VC474-3-	200	.47	J, K	M, P, R, S	1.875	1.000	1.812	1.000
CQR44A-VC564-3-	200	.56	J, K	M, P, R, S	2.125	1.000	2.062	1.000
CQR44A-VC684-3-	200	.68	J, K	M, P, R, S	2.125	1.000	2.062	1.000

See footnotes at end of table.

TABLE II. STYLE CQR44 capacitors – Continued.

PIN <u>1/</u>	DC voltage rating (volts)	Capacitance rating (μ F)	Capacitance tolerance	Failure rate level	Case dimensions <u>2/ 3/</u>			
					Circuit 1		Circuit 3	
					L $\pm$.031	D $+ .015$ - .005	L $\pm$.031	D $+ .015$ - .005
CQR44A-VE122-3-	400	.0012	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VE152-3-	400	.0015	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VE392-3-	400	.0039	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VE472-3-	400	.0047	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VE562-3-	400	.0056	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VE682-3-	400	.0068	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VE822-3-	400	.0082	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VE103-3-	400	.01	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VE123-3-	400	.012	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VE153-3-	400	.015	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VE183-3-	400	.018	J, K	M, P, R, S	1.375	.400	1.312	.400
CQR44A-VE223-3-	400	.022	J, K	M, P, R, S	1.375	.400	1.312	.400
CQR44A-VE273-3-	400	.027	J, K	M, P, R, S	1.125	.500	1.062	.500
CQR44A-VE333-3-	400	.033	J, K	M, P, R, S	1.125	.500	1.062	.500
CQR44A-VE393-3-	400	.039	J, K	M, P, R, S	1.125	.562	1.062	.562
CQR44A-VE473-3-	400	.047	J, K	M, P, R, S	1.125	.562	1.062	.562
CQR44A-VE563-3-	400	.056	J, K	M, P, R, S	1.375	.562	1.312	.562
CQR44A-VE683-3-	400	.068	J, K	M, P, R, S	1.375	.562	1.312	.562
CQR44A-VE823-3-	400	.082	J, K	M, P, R, S	1.625	.670	1.562	.670
CQR44A-VE104-3-	400	.1	J, K	M, P, R, S	1.625	.670	1.562	.670
CQR44A-VE124-3-	400	.12	J, K	M, P, R, S	2.125	.750	2.062	.750
CQR44A-VE154-3-	400	.15	J, K	M, P, R, S	2.125	.750	2.062	.750
CQR44A-VE184-3-	400	.18	J, K	M, P, R, S	2.625	.750	2.562	.750
CQR44A-VE224-3-	400	.22	J, K	M, P, R, S	2.625	.750	2.562	.750
CQR44A-VE274-3-	400	.27	J, K	M, P, R, S	2.125	1.000	2.062	1.000
CQR44A-VE334-3-	400	.33	J, K	M, P, R, S	2.125	1.000	2.062	1.000
CQR44A-VE394-3-	400	.39	J, K	M, P, R, S	2.625	1.000	2.562	1.000
CQR44A-VE474-3-	400	.47	J, K	M, P, R, S	2.625	1.000	2.562	1.000
CQR44A-VF102-3-	600	.001	J, K	M, P, R, S	.750	.235	.688	.235
CQR44A-VF122-3-	600	.0012	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VF152-3-	600	.0015	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VF182-3-	600	.0018	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VF222-3-	600	.0022	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VF272-3-	600	.0027	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VF332-3-	600	.0033	J, K	M, P, R, S	.875	.312	.812	.312
CQR44A-VF392-3-	600	.0039	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VF472-3-	600	.0047	J, K	M, P, R, S	.875	.400	.812	.400
CQR44A-VF562-3-	600	.0056	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VF682-3-	600	.0068	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VF822-3-	600	.0082	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VF103-3-	600	.01	J, K	M, P, R, S	1.125	.400	1.062	.400
CQR44A-VF123-3-	600	.012	J, K	M, P, R, S	1.125	.500	1.062	.500
CQR44A-VF153-3-	600	.015	J, K	M, P, R, S	1.125	.500	1.062	.500
CQR44A-VF183-3-	600	.018	J, K	M, P, R, S	1.125	.562	1.062	.562
CQR44A-VF223-3-	600	.022	J, K	M, P, R, S	1.125	.562	1.062	.562
CQR44A-VF273-3-	600	.027	J, K	M, P, R, S	1.375	.562	1.312	.562
CQR44A-VF333-3-	600	.033	J, K	M, P, R, S	1.375	.562	1.312	.562
CQR44A-VF393-3-	600	.039	J, K	M, P, R, S	1.625	.562	1.562	.562
CQR44A-VF473-3-	600	.047	J, K	M, P, R, S	1.625	.562	1.562	.562

See footnotes at end of table.

TABLE II. STYLE CQR44 capacitors – Continued.

PIN <u>1/</u>	DC voltage rating (volts)	Capacitance rating (μF)	Capacitance tolerance	Failure rate level	Case dimensions <u>2/ 3/</u>			
					Circuit 1		Circuit 3	
					L ± .031	D+ .015 - .005	L ± .031	D+ .015 - .005
CQR44A-VF563-3-	600	.056	J, K	M, P, R, S	1.625	.670	1.562	.670
CQR44A-VF683-3-	600	.068	J, K	M, P, R, S	1.625	.670	1.562	.670
CQR44A-VF823-3-	600	.082	J, K	M, P, R, S	1.875	.750	1.812	.750
CQR44A-VF104-3-	600	.1	J, K	M, P, R, S	1.875	.750	1.812	.750
CQR44A-VF124-3-	600	.12	J, K	M, P, R, S	1.875	1.000	1.812	1.000
CQR44A-VF154-3-	600	.15	J, K	M, P, R, S	1.875	1.000	1.812	1.000
CQR44A-VF184-3-	600	.18	J, K	M, P, R, S	2.625	1.000	2.562	1.000
CQR44A-VF224-3-	600	.22	J, K	M, P, R, S	2.625	1.000	2.562	1.000

- 1/ Complete PIN shall include additional symbols to indicate circuit, capacitance tolerance, and failure rate level, as applicable.
- 2/ Dimensions are for basic case; sleeving shall extend .016 inch (0.41 mm) minimum, .062 inch (1.57 mm) maximum beyond each end of the capacitor body; however, if shrink-fitted insulation is used for the sleeving, it shall lap over the ends of the capacitor body. Add .047 inch (1.19 mm) maximum to the nominal capacitor diameter.
- 3/ See [table III](#) for metric equivalents.

TABLE III. Millimeter equivalent of decimal inches.

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.005	0.13	.235	5.97	.875	22.23	1.875	47.63
.015	0.38	.312	7.92	1.000	25.40	2.062	52.37
.016	0.41	.400	10.16	1.062	26.97	2.125	53.98
.031	0.79	.500	12.70	1.125	28.58	2.312	58.72
.047	1.19	.562	14.27	1.312	33.32	2.375	60.33
.062	1.57	.670	17.02	1.375	34.93	2.562	65.07
.175	4.45	.688	17.48	1.562	39.67	2.625	66.68
.188	4.78	.750	19.05	1.625	41.28		
.195	4.95	.812	20.62	1.812	46.02		

Changes from previous issue: The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the previous issue.

Referenced documents: In addition to [MIL-PRF-19978](#), this document references the following:

[MIL-STD-202-112](#)
[MIL-STD-202-204](#)
[MIL-STD-202-211](#)

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5910-2026-043)

Review activities:
Navy - MC
Air Force - 19

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using ASSIST at <https://assist.dla.mil/>.