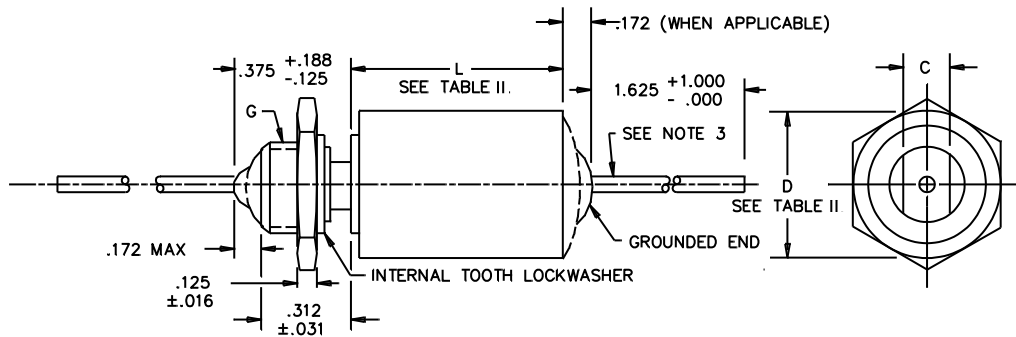


PERFORMANCE SPECIFICATION SHEET

CAPACITOR, FIXED, PLASTIC (OR PAPER-PLASTIC) DIELECTRIC, AXIAL-WIRE
THREADED-STUD RETAINER, TUBULAR (UNINSULATED)
(HERMETICALLY SEALED IN METAL CASES),
ESTABLISHED RELIABILITY, STYLE CQR13

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

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



Inches	mm	Inches	mm	Inches	mm
.001	0.03	.125	3.18	.437	11.10
.004	0.10	.172	4.37	.562	14.27
.005	0.13	.188	4.78	.670	17.02
.016	0.41	.250	6.35	.750	19.05
.031	0.79	.312	7.92	1.000	25.40
.032	0.81	.375	9.53	1.625	41.38

Case dimension D	C ± .005	G
.562 or less	.250	5/16-24UNF-2A
.670	.375	7/16-28UNEF-2A
.750 and up	.437	1/2-28UNEF-2A

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are in millimeters and are given for general information only.
3. Leads shall be of solder coated solid wire, .032 inch +.004 inch, -.001 inch (No. 20 AWG).
4. Mounting nuts and lockwashers shall be supplied.

FIGURE 1. Style CQR13 capacitors.

AMSC N/A

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

FSC 5910



REQUIREMENTS:

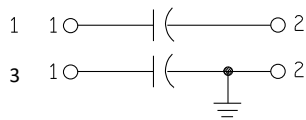
Design and construction:

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

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

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

Circuit diagram:



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

Rated temperature: -65° to +125°C.

Capacitance (cap.) (nom): See [table II](#).

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

Dissipation factor (DF) (max): 1.0 percent.

Failure rate level: In accordance with [MIL-PRF-19978](#).

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

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

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

Seal: [MIL-STD-202-112](#), test condition letter A.

Barometric pressure: 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):

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

Terminal to case: Greater than 10,000 megohms.

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

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

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

Stability at low and high temperatures:

Low temperature:

Test temperature: -65°C +0°C, -5°C.

Capacitance change (max): -10 percent.

High temperature:

Test temperature: +125°C +5°C, -0°C.

Capacitance change (max): +10 percent.

Life:

Capacitance change (max): ± 5 percent of initial measured value.

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

TABLE I. Terminal-to-terminal insulation resistance.

Capacitance rating <u>Characteristic K</u>	Minimum insulation resistance
0 to 0.6 microfarad	<u>At +25°C</u> 25,000 megohms
Greater than 0.6 microfarad	15,000 megohm-microfarads <u>1/</u>
0 to 0.08 microfarad	<u>At +125°C</u> 250 megohms
Greater than 0.08 microfarad	20 megohm-microfarads <u>1/</u>

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

TABLE II. STYLE CQR13 capacitors.

Part or Identifying Number (PIN) 1/	DC voltage rating	Capacitance rating	Capacitance tolerance	Failure rate levels	Case dimensions 2/			
					Circuit 1		Circuit 3	
					L ± .031	D + .015, - .005	L ± .031	D + .015, - .005
	<u>Volts</u>	<u>μF</u>			<u>Inches</u>	<u>Inches</u>	<u>Inches</u>	<u>Inches</u>
CQR13A-KC392-3-	200	.0039	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KC472-3-	200	.0047	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KC562-3-	200	.0056	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KC682-3-	200	.0068	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KC183-3-	200	.018	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KC223-3-	200	.022	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KC273-3-	200	.027	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KC333-3-	200	.033	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KC393-3-	200	.039	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KC473-3-	200	.047	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KC563-3-	200	.056	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KC683-3-	200	.068	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KC823-3-	200	.082	G, J, K	M, P, R, S	1.125	.400	1.062	.400
CQR13A-KC104-3-	200	.10	G, J, K	M, P, R, S	1.125	.400	1.062	.400
CQR13A-KC124-3-	200	.12	G, J, K	M, P, R, S	1.375	.400	1.312	.400
CQR13A-KC154-3-	200	.15	G, J, K	M, P, R, S	1.375	.400	1.312	.400
CQR13A-KC184-3-	200	.18	G, J, K	M, P, R, S	1.125	.562	1.062	.562
CQR13A-KC224-3-	200	.22	G, J, K	M, P, R, S	1.125	.562	1.062	.562
CQR13A-KC274-3-	200	.27	G, J, K	M, P, R, S	1.375	.562	1.312	.562
CQR13A-KC334-3-	200	.33	G, J, K	M, P, R, S	1.375	.562	1.312	.562
CQR13A-KC394-3-	200	.39	G, J, K	M, P, R, S	1.625	.562	1.562	.562
CQR13A-KC474-3-	200	.47	G, J, K	M, P, R, S	1.625	.562	1.562	.562
CQR13A-KC564-3-	200	.56	G, J, K	M, P, R, S	1.625	.670	1.562	.670
CQR13A-KC684-3-	200	.68	G, J, K	M, P, R, S	1.625	.670	1.562	.670
CQR13A-KC824-3-	200	.82	G, J, K	M, P, R, S	2.125	.750	2.062	.750
CQR13A-KC105-3-	200	1.000	G, J, K	M, P, R, S	2.125	.750	2.062	.750
CQR13A-KE272-3-	400	.0027	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KE332-3-	400	.0033	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KE123-3-	400	.012	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KE153-3-	400	.015	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KE273-3-	400	.027	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KE333-3-	400	.033	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KE393-3-	400	.039	G, J, K	M, P, R, S	1.125	.400	1.062	.400
CQR13A-KE473-3-	400	.047	G, J, K	M, P, R, S	1.125	.400	1.062	.400
CQR13A-KE563-3-	400	.056	G, J, K	M, P, R, S	1.375	.400	1.312	.400
CQR13A-KE683-3-	400	.068	G, J, K	M, P, R, S	1.375	.400	1.312	.400
CQR13A-KE823-3-	400	.082	G, J, K	M, P, R, S	1.125	.562	1.062	.562
CQR13A-KE104-3-	400	.10	G, J, K	M, P, R, S	1.125	.562	1.062	.562
CQR13A-KE124-3-	400	.12	G, J, K	M, P, R, S	1.375	.562	1.312	.562
CQR13A-KE154-3-	400	.15	G, J, K	M, P, R, S	1.375	.562	1.312	.562
CQR13A-KE184-3-	400	.18	G, J, K	M, P, R, S	1.625	.562	1.562	.562
CQR13A-KE224-3-	400	.22	G, J, K	M, P, R, S	1.625	.562	1.562	.562
CQR13A-KE274-3-	400	.27	G, J, K	M, P, R, S	1.625	.670	1.562	.670
CQR13A-KE334-3-	400	.33	G, J, K	M, P, R, S	1.625	.670	1.562	.670
CQR13A-KE394-3-	400	.39	G, J, K	M, P, R, S	2.125	.750	2.062	.750
CQR13A-KE474-3-	400	.47	G, J, K	M, P, R, S	2.125	.750	2.062	.750
CQR13A-KF102-3-	600	.0010	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KF122-3-	600	.0012	G, J, K	M, P, R, S	.750	.400	.688	.400

See footnote at end of table.

TABLE II. STYLE CQR13 capacitors - Continued.

PIN <u>1/</u>	DC voltage rating	Capacitance rating	Capacitance tolerance	Failure rate levels	Case dimensions <u>2/</u>			
					Circuit 1		Circuit 3	
					L ± .031	D + .015, - .005	L ± .031	D + .015, - .005
	<u>Volts</u>	<u>μF</u>			<u>Inches</u>	<u>Inches</u>	<u>Inches</u>	<u>Inches</u>
CQR13A-KF152-3-	600	.0015	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KF182-3-	600	.0018	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KF222-3-	600	.0022	G, J, K	M, P, R, S	.750	.400	.688	.400
CQR13A-KF272-3-	600	.0027	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF332-3-	600	.0033	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF392-3-	600	.0039	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF472-3-	600	.0047	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF562-3-	600	.0056	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF682-3-	600	.0068	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF822-3-	600	.0082	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF103-3-	600	.010	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF123-3-	600	.012	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF153-3-	600	.015	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF183-3-	600	.018	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF223-3-	600	.022	G, J, K	M, P, R, S	.875	.400	.812	.400
CQR13A-KF273-3-	600	.027	G, J, K	M, P, R, S	1.125	.400	1.062	.400
CQR13A-KF333-3-	600	.033	G, J, K	M, P, R, S	1.125	.400	1.062	.400
CQR13A-KF393-3-	600	.039	G, J, K	M, P, R, S	1.375	.400	1.312	.400
CQR13A-KF473-3-	600	.047	G, J, K	M, P, R, S	1.375	.400	1.312	.400
CQR13A-KF563-3-	600	.056	G, J, K	M, P, R, S	1.125	.562	1.062	.562
CQR13A-KF683-3-	600	.068	G, J, K	M, P, R, S	1.125	.562	1.062	.562
CQR13A-KF823-3-	600	.082	G, J, K	M, P, R, S	1.375	.562	1.312	.562
CQR13A-KF104-3-	600	.10	G, J, K	M, P, R, S	1.375	.562	1.312	.562
CQR13A-KF124-3-	600	.12	G, J, K	M, P, R, S	1.625	.562	1.562	.562
CQR13A-KF154-3-	600	.15	G, J, K	M, P, R, S	1.625	.562	1.562	.562
CQR13A-KF184-3-	600	.18	G, J, K	M, P, R, S	1.625	.670	1.562	.670
CQR13A-KF224-3-	600	.22	G, J, K	M, P, R, S	1.625	.670	1.562	.670
CQR13A-KF274-3-	600	.27	G, J, K	M, P, R, S	2.125	.750	2.062	.750
CQR13A-KF334-3-	600	.33	G, J, K	M, P, R, S	2.125	.750	2.062	.750
CQR13A-KF394-3-	600	.39	G, J, K	M, P, R, S	2.375	.750	2.312	.750
CQR13A-KF474-3-	600	.47	G, J, K	M, P, R, S	2.375	.750	2.312	.750
CQR13A-KG184-3-	1,000	.18	G, J, K	M, P, R, S	2.125	.750	2.062	.750
CQR13A-KG224-3-	1,000	.22	G, J, K	M, P, R, S	2.125	.750	2.062	.750
CQR13A-KG274-3-	1,000	.27	G, J, K	M, P, R, S	2.125	1.0	2.062	1.000
CQR13A-KG334-3-	1,000	.33	G, J, K	M, P, R, S	2.125	1.0	2.062	1.000
CQR13A-KG394-3-	1,000	.39	G, J, K	M, P, R, S	2.375	1.0	2.312	1.000
CQR13A-KG474-3-	1,000	.47	G, J, K	M, P, R, S	2.375	1.0	2.312	1.000

1/ Complete PIN shall include additional symbols to indicate circuit, capacitance tolerance, and failure rate level, as applicable.

2/ See [table III](#) for metric equivalents.

TABLE III. Millimeter equivalents of inches.

Inches	mm	Inches	mm	Inches	mm
.005	0.13	.688	17.48	1.312	33.32
.015	0.38	.750	19.05	1.375	34.93
.031	0.79	.812	20.62	1.562	39.67
.235	5.97	.833	21.16	1.625	41.28
.312	7.92	.875	22.23	2.062	52.37
.400	10.16	1.000	25.40	2.125	53.98
.562	14.27	1.062	26.97	2.312	58.72
.670	17.02	1.125	28.58	2.375	60.33

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 also references the following:

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

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

Preparing activity:
 DLA - CC
 (Project 5910-2026-029)

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 the ASSIST Online database at <https://assist.dla.mil/>.