

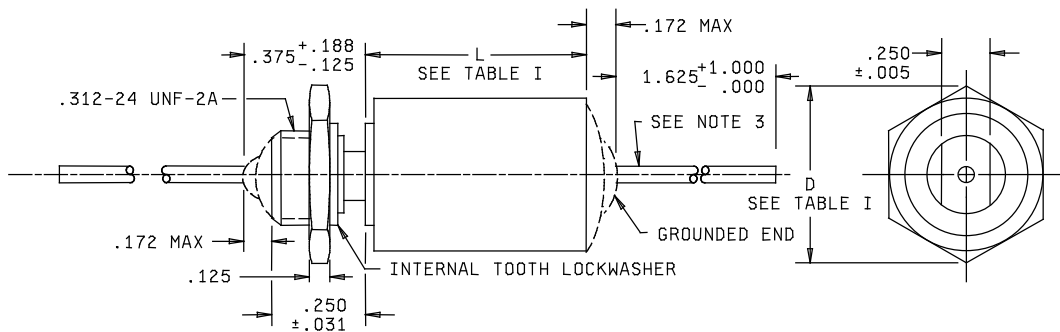
PERFORMANCE SPECIFICATION SHEET

CAPACITOR, FIXED, PLASTIC (OR PAPER-PLASTIC) DIELECTRIC,
AXIAL-WIRE TERMINAL, THREADED-STUD RETAINER, TUBULAR (UNINSULATED),
(HERMETICALLY SEALED IN METAL CASES),
STYLE CQ11

INACTIVE FOR NEW DESIGN
AFTER 30 AUGUST 1974

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](#).



NOTES:

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

FIGURE 1. Style CQ11 capacitors.

Inches	mm
.001	0.03
.004	0.10
.005	0.13
.031	0.79
.032	0.81
.125	3.18
.172	4.37
.250	6.35
.312	7.92
.375	9.53
1.000	25.40
1.625	41.28



REQUIREMENTS:

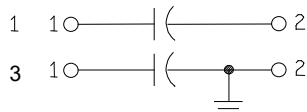
Dimensions and configuration: See [figure 1](#) and [table I](#).

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

Dielectric material: Paper and polyethelene terephthalate (K).

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

Circuit diagram:



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

Rated temperature: -65° to +125°C.

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

Capacitance tolerance: ± 10 percent (symbol K).

Vibration grade: 3.

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

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

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.

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

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

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

TABLE I. Style CQ11 capacitors.

Part or identifying number (PIN) <u>1/</u>	DC voltage rating (volts)	Capacitance (μ F)	Case dimensions (inches) <u>2/</u>		
			D+.010, -.020	Circuit 1 L $\pm$.015	Circuit 3 L $\pm$.015
CQ11A-KB333K3	100	.033	0.400	0.771	0.708
CQ11A-KB154K3	100	.15	0.400	0.896	0.833
CQ11A-KB224K3	100	.22	0.400	1.146	1.083
CQ11A-KB394K3	100	.39	0.562	1.156	1.094
CQ11A-KB474K3	100	.47	0.562	1.156	1.094
CQ11A-KB684K3	100	.68	0.562	1.406	1.344
CQ11A-KB105K3	100	1.0	0.562	1.906	1.844
CQ11A-KC683K3	200	.068	0.400	0.771	0.708
CQ11A-KC104K3	200	.10	0.400	0.896	0.833
CQ11A-KC154K3	200	.15	0.400	1.146	1.083
CQ11A-KC224K3	200	.22	0.400	1.396	1.333
CQ11A-KC334K3	200	.33	0.562	1.156	1.094
CQ11A-KC474K3	200	.47	0.562	1.406	1.344
CQ11A-KC684K3	200	.68	0.562	1.906	1.844
CQ11A-KC105K3	200	1.0	0.670	1.906	1.844
CQ11A-KE103K3	400	.010	0.400	0.771	0.708
CQ11A-KE393K3	400	.039	0.400	0.896	0.833
CQ11A-KE473K3	400	.047	0.400	0.896	0.833
CQ11A-KE683K3	400	.068	0.400	1.146	1.083
CQ11A-KE104K3	400	.10	0.400	1.396	1.333
CQ11A-KE154K3	400	.15	0.562	1.156	1.094
CQ11A-KE224K3	400	.22	0.562	1.406	1.344
CQ11A-KE274K3	400	.27	0.562	1.906	1.844
CQ11A-KE334K3	400	.33	0.562	1.906	1.844
CQ11A-KE474K3	400	.47	0.670	1.906	1.844
CQ11A-KE684K3	400	.68	0.750	2.156	2.094
CQ11A-KE105K3	400	1.0	1.000	1.906	1.844
CQ11A-KF102K3	600	.001	0.400	0.771	0.708
CQ11A-KF152K3	600	.0015	0.400	0.771	0.708
CQ11A-KF222K3	600	.0022	0.400	0.771	0.708
CQ11A-KF332K3	600	.0033	0.400	0.771	0.708
CQ11A-KF472K3	600	.0047	0.400	0.771	0.708
CQ11A-KF682K3	600	.0068	0.400	0.771	0.708
CQ11A-KF103K3	600	.010	0.400	0.771	0.708
CQ11A-KF153K3	600	.015	0.400	0.771	0.708
CQ11A-KF223K3	600	.022	0.400	0.771	0.708
CQ11A-KF333K3	600	.033	0.400	0.896	0.833
CQ11A-KF473K3	600	.047	0.400	1.146	1.083
CQ11A-KF683K3	600	.068	0.400	1.396	1.333
CQ11A-KF104K3	600	.10	0.562	1.156	1.094
CQ11A-KF154K3	600	.15	0.562	1.406	1.344
CQ11A-KF184K3	600	.18	0.562	1.906	1.844
CQ11A-KF224K3	600	.22	0.562	1.906	1.844
CQ11A-KF334K3	600	.33	0.670	1.906	1.844
CQ11A-KF474K3	600	.47	0.750	2.156	2.094
CQ11A-KF684K3	600	.68	1.000	1.906	1.844

1/ Complete part number shall include an additional symbol to indicate circuit.2/ Dimensions are in inches. See [table II](#) for metric equivalents.

TABLE II. Millimeter equivalent of decimal inches.

Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
0.010	0.25	0.670	17.02	0.896	22.76	1.156	29.36	1.844	46.84
0.015	0.38	0.708	17.98	1.000	25.40	1.333	33.86	1.906	48.41
0.020	0.51	0.750	19.05	1.083	27.51	1.344	34.14	2.094	53.19
0.400	10.16	0.771	19.58	1.094	27.79	1.396	35.46	2.156	54.76
0.562	14.27	0.833	21.16	1.146	29.11	1.406	35.71		

Insulation resistance (IR):

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

Terminal to case: Greater than 10,000 megohms.

TABLE III. Terminal-to-terminal insulation resistance.

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

Stability at low and high temperature:

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.

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

MIL-PRF-19978/21B

NOTE: Style CQ11 capacitors are substitutable for style CP11 capacitors formerly covered in [MIL-C-25/1K](#) as shown in the following:

From MIL-C-25/1K (CP11)	To MIL-PRF-19978/21 (CQ11)	From MIL-C-25/1K (CP11)	To MIL-PRF-19978/21 (CQ11)
CP11A-KB333K-	CQ11A-KB333K3-	CP11A-KE334K-	CQ11A-KE334K3-
CP11A-KB154K-	CQ11A-KB154K3-	CP11A-KE474K-	CQ11A-KE474K3-
CP11A-KB224K-	CQ11A-KB224K3-	CP11A-KE684K-	CQ11A-KE684K3-
CP11A-KB394K-	CQ11A-KB394K3-	CP11A-KE105K-	CQ11A-KE105K3-
CP11A-KB474K-	CQ11A-KB474K3-	CP11A-KF102K-	CQ11A-KF102K3-
CP11A-KB684K-	CQ11A-KB684K3-	CP11A-KF152K-	CQ11A-KF152K3-
CP11A-KB105K-	CQ11A-KB105K3-	CP11A-KF222K-	CQ11A-KF222K3-
CP11A-KC683K-	CQ11A-KC683K3-	CP11A-KF332K-	CQ11A-KF332K3-
CP11A-KC104K-	CQ11A-KC104K3-	CP11A-KF472K-	CQ11A-KF472K3-
CP11A-KC154K-	CQ11A-KC154K3-	CP11A-KF682K-	CQ11A-KF682K3-
CP11A-KC224K-	CQ11A-KC224K3-	CP11A-KF103K-	CQ11A-KF103K3-
CP11A-KC334K-	CQ11A-KC334K3-	CP11A-KF153K-	CQ11A-KF153K3-
CP11A-KC474K-	CQ11A-KC474K3-	CP11A-KF223K-	CQ11A-KF223K3-
CP11A-KC684K-	CQ11A-KC684K3-	CP11A-KF333K-	CQ11A-KF333K3-
CP11A-KC105K-	CQ11A-KC105K3-	CP11A-KF473K-	CQ11A-KF473K3-
CP11A-KE103K-	CQ11A-KE103K3-	CP11A-KF683K-	CQ11A-KF683K3-
CP11A-KE393K-	CQ11A-KE393K3-	CP11A-KF104K-	CQ11A-KF104K3-
CP11A-KE473K-	CQ11A-KE473K3-	CP11A-KF154K-	CQ11A-KF154K3-
CP11A-KE683K-	CQ11A-KE683K3-	CP11A-KF184K-	CQ11A-KF184K3-
CP11A-KE104K-	CQ11A-KE104K3-	CP11A-KF224K-	CQ11A-KF224K3-
CP11A-KE154K-	CQ11A-KE154K3-	CP11A-KF334K-	CQ11A-KF334K3-
CP11A-KE224K-	CQ11A-KE224K3-	CP11A-KF474K-	CQ11A-KF474K3-
CP11A-KE274K-	CQ11A-KE274K3-	CP11A-KF684K-	CQ11A-KF684K3-

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](#)

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 last previous issue.

Custodians:

Army - CR

Navy - EC

Air Force - 85

DLA - CC

Preparing activity:

DLA - CC

(Project 5910-2022-007)

Review activities:

Army - AR, MI

Navy - AS

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