

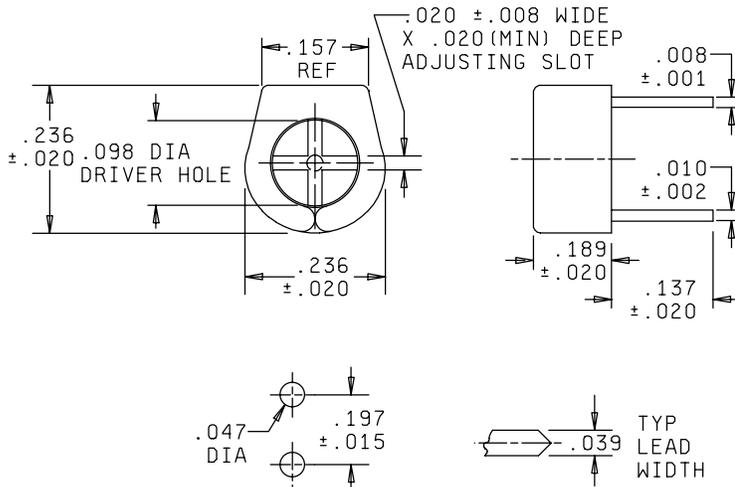
INCH POUND

MIL-PRF-81/8A
 25 May 1999
 SUPERSEDING
 MIL-C-81/8
 10 December 1984

PERFORMANCE SPECIFICATION SHEET
 CAPACITORS, VARIABLE, CERAMIC DIELECTRIC,
 STYLE CV42

This specification 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 and MIL-PRF-81.



RECOMMENDED
 MOUNTING HOLES

Style CV42

Inches	mm	Inches	mm
.001	0.03	.047	1.20
.002	0.05	.098	2.50
.006	0.15	.137	3.50
.008	0.20	.157	4.00
.010	0.25	.189	4.80
.015	0.40	.197	5.00
.020	0.50	.236	6.00
.039	1.00		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.006 (0.15 mm).

FIGURE 1. Dimensions and configurations.

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REQUIREMENTS:

Dimensions and configuration: See figure 1.

Capacitance value: See table I.

DC rated voltage: 100 V dc.

Operating temperature range: -55°C to +85°C.

Characteristics: See table I.

Dielectric withstanding voltage: Method 301 of MIL-STD-202. A dc potential of 2.2 times rated voltage applied between terminals for 3 seconds \pm 2 seconds.

Barometric pressure (reduced): Method 105 of MIL-STD-202, condition D (100,000 feet).

Test potential: 100 percent of dc rated voltage.

Insulation resistance: Method 302 of MIL-STD-202, condition A, 100 volts dc applied: 10,000 megohms, minimum.

Capacitance:

Method 305 of MIL-STD-202.

DF: At 1 MHz \pm 100 kHz, at maximum and minimum capacitance: Shall be not more than 0.2 percent for rated maximum capacitance 11 pF, 20 pF, and 30 pF, 0.3 percent for 7 pF.

TABLE I. Style CV42.

Type designation	Capacitance		DC rated voltage (volts)	Characteristic	
	Min. (pF)	Max. (pF)		Symbol	Temperature coefficient (ppm/°C)
CV42X070	2.0	7.0	100	X	0 \pm 200
CV42Y110	3.0	11.0	100	Y	-450 \pm 300
CV42Z200	4.2	20.0	100	Z	-750 \pm 300
CV42Z300	5.2	30.0	100	Z	-750 \pm 300

Temperature coefficient: Within the limits specified for the applicable characteristic.

Capacitance drift: Within 0.50 picofarad (pF) of initial step 1 measurement.

Terminal strength:

Pull test: Capacitor held by body and 4-pound load applied to each terminal for at least 10 seconds.

Torque: Not less than 0.3 ounce-inch nor more than 2 ounce-inches.

Shock (specified pulse): Method 213 of MIL-STD-202, condition I (100 g's).

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Vibration, high frequency: Method 204 of MIL-STD-202, condition B (15 g's).

Capacitance change: Shall not exceed ± 2 percent or 0.5 pF, whichever is greater.

DF: Shall be not more than 0.2 percent for rated minimum capacitance 11 pF, 20 pF, and 30 pF, 0.3 percent for 7 pF.

Dielectric withstanding voltage: A dc potential of 2.2 times rated voltage applied between terminals for 3 seconds ± 2 seconds.

Insulation resistance: 10,000 megohms, minimum.

Fatigue:

ΔC : Shall not exceed 12 percent or 0.75 pF, whichever is greater.

Torque: Initial requirement.

Life:

Qualification test: 1,000 hours at +85°C, 150 percent of rated volts dc with a peak alternating voltage of 50 percent of rated volts dc (100 Hz or less) superimposed.

Insulation resistance: Initial requirement.

Capacitance change: Shall not exceed ± 8 percent or 0.75 pF, whichever is greater.

Group C life: Conditions and requirements are the same as that for qualification.

Moisture resistance: Method 106 of MIL-STD-202.

Insulation resistance: 10,000 megohms minimum.

Capacitance change: Shall not exceed ± 5 percent of nominal value or 0.5 pF, whichever is greater.

DF: Shall be not more than 0.5 percent.

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5910-2010-05)

Review activities:

Army - AR, MI
Navy - MC
Air Force - 19, 99