

INCH-POUND
MIL-PRF-11693/7F
29 March 2013
SUPERSEDING
MIL-C-11693/7E
9 August 2001

PERFORMANCE SPECIFICATION SHEET

CAPACITORS, FEED THROUGH, RADIO-INTERFERENCE REDUCTION, DC
(HERMETICALLY SEALED IN METAL CASES)
ESTABLISHED AND NON-ESTABLISHED RELIABILITY
STYLES CZ23, CZ24, CZR23 AND CZR24

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-11693](#)

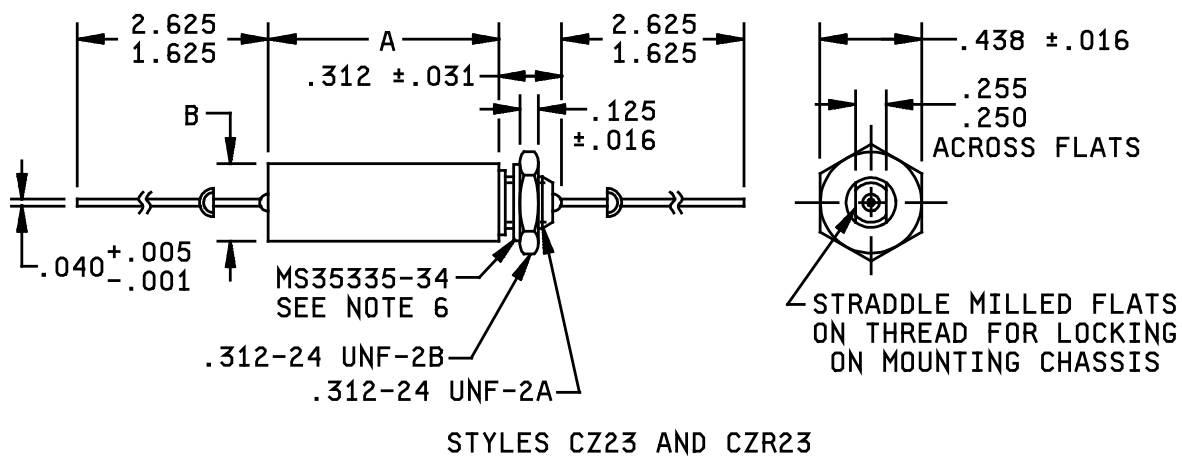
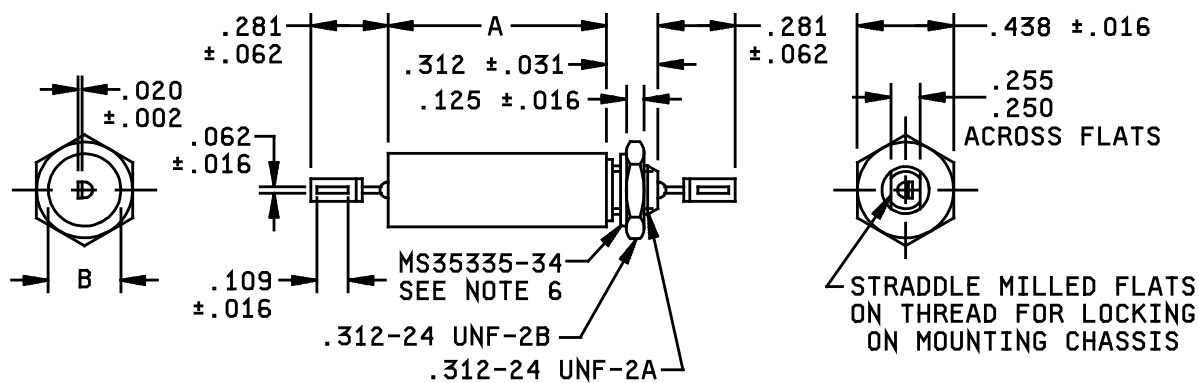
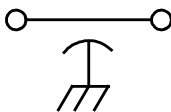


FIGURE 1. Styles CZ23, CZ24, CZR23 and CZR24 capacitors.

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STYLES CZ24 AND CZR24CIRCUIT DIAGRAM

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	.05	1.3	.312	7.92	1.12	28.5
.002	0.05	.062	1.57	.400	10.16	1.38	35.1
.005	0.13	.109	2.77	.438	11.13	1.625	41.28
.015	0.38	.125	3.18	.562	14.27	1.88	47.8
.016	0.41	.234	5.94	.670	17.02	2.12	53.9
.020	0.51	.250	6.35	.75	19.1	2.38	60.5
.031	0.79	.255	6.48	.88	22.4	2.625	66.68
.040	1.02	.281	7.14	1.00	25.4		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is $\pm .031$ inch (0.79 mm).
4. Threaded neck to mounting shoulder shall be perpendicular with $\pm 3^\circ$.
5. Recommended mounting torque: 10 pound-inches.
6. Lockwasher shall not be cadmium plated.

FIGURE 1. Styles CZ23, CZ24, CZR23, and CZR24 capacitors - Continued.

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REQUIREMENTS

Dimensions and configuration: See figure 1 and table I.

TABLE I. Type designation, dimensions, and electrical characteristics.

Part or Identifying Number (PIN) ^{1/}	Rated voltage (Volts, dc)	Nominal capacitance (μ F)	Rated current (Amperes)	Characteristics	Dimensions (Inches)	
					A \pm .05	B \pm .015
CZ-2-B-B473-	100	0.047	10	K, E	.75	.400
CZ-2-B-B104-	100	0.1	10	K, E	.88	.400
CZ-2-B-B224-	100	0.22	10	K, E	1.38	.400
CZ-2-B-B474-	100	0.47	10	K, E	1.38	.562
CZ-2-B-B105-	100	1.0	10	K, E	1.88	.670
CZ-2-B-B205-	100	2.0	10	K, E	2.12	1.00
CZ-2-B-C473-	200	0.047	10	K, E	.88	.400
CZ-2-B-C104-	200	0.1	10	K, E	1.12	.400
CZ-2-B-C224-	200	0.22	10	K, E	1.12	.562
CZ-2-B-C474-	200	0.47	10	K, E	1.88	.562
CZ-2-B-C105-	200	1.0	10	K, E	2.12	.750
CZ-2-B-E104-	400	0.1	10	K, E	1.12	.562
CZ-2-B-E224-	400	0.22	10	K, E	1.88	.562
CZ-2-B-E474-	400	0.47	10	K, E	2.12	.750
CZ-2-B-F472-	600	0.0047	10	K, E	.75	.400
CZ-2-B-F103-	600	0.01	10	K, E	.75	.400
CZ-2-B-F473-	600	0.047	10	K, E	1.38	.400
CZ-2-B-F104-	600	0.1	10	K, E	1.38	.562
CZ-2-B-F224-	600	0.22	10	K, E	1.88	.670
CZ-2-B-F474-	600	0.47	10	K, E	2.38	.750

^{1/} Complete PIN will include the following:

1st dash - Symbol "R" (for styles CZR23 and CZR24) or dash will be deleted (for styles CZ23 and CZ24).

2nd dash - Applicable style number.

3rd dash - Applicable characteristic (K or E).

4th dash - Applicable failure rate level symbol (CZR23 and CZR24 only) or dash will be deleted (for styles CZ23 and CZ24).

Dielectric: Normally paper, or paper-plastic.

Characteristic: See table I.

Temperature range: Characteristic E -55°C to +85°C.
Characteristic K -55°C to +125°C.

Rated voltage: See table I.

Rated current: See table I.

Capacitance: See table I.

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Insertion loss: Measurements shall be made at the following frequencies for the capacitance values specified.

Nominal capacitance (μF)	Frequency (MHz)
0.0047	400 and 1,000
0.01	400 and 1,000
0.047	400 and 1,000
0.1	400 and 200
0.22	400 and 100
0.47	400 and 80
1.0	400 and 50
2.0	400 and 50

DC resistance: The dc resistance shall not exceed 0.01 ohm.

Vibration, high frequency: [Method 204 of MIL-STD-202](#) condition A (10G).

Thermal shock: [Method 107 of MIL-STD-202](#).

IR at +25°C: Not less than 30 percent of the value specified in the initial requirement.

Capacitance: Change not more than ± 5 percent from the initial measurement.

Moisture resistance: [Method 106 of MIL-STD-202](#).

IR at +25°C: Not less than 30 percent of the initial requirement.

Capacitance: Change not more than ± 5 percent from the initial measurement.

Solderability: Applicable for styles CZ23, CZ24, CZR23, and CZR24.

Life (accelerated): [Method 108 of MIL-STD-202](#).

IR at +25°C: Not less than 30 percent of the value specified in the initial requirement.

Capacitance: Change not more than ± 5 percent from the initial measured value.

Referenced documents: In addition to [MIL-PRF-11693](#), this document references [MIL-STD-202](#).

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
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Review activities:
 Army - EA, MI
 Air Force - 99

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