

PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR42/U

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 sheet and [MIL-PRF-3098](#).

Pertinent characteristics: 90 kHz to 250 kHz; fundamental; controlled; antiresonance.

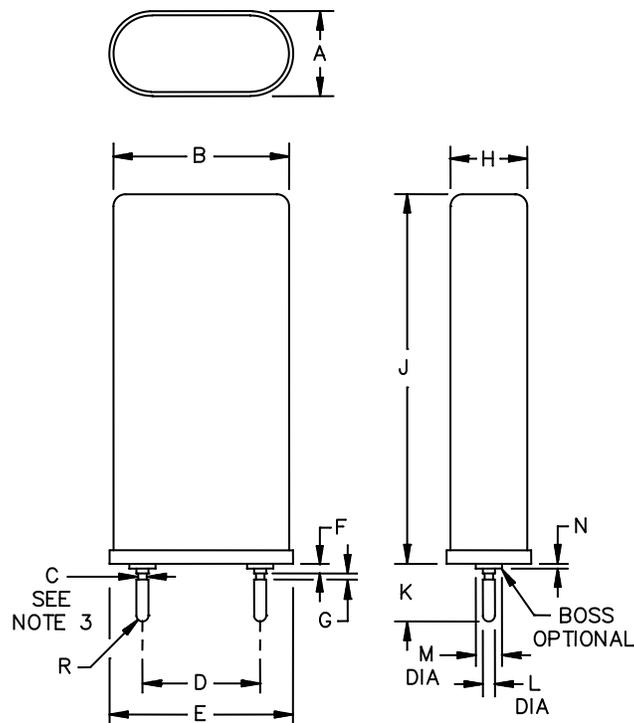


FIGURE 1. Crystal unit - CR42/U.

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Ltr	Inches		mm	
	Min	Max	Min	Max
A	---	.352	---	8.94
B	---	.725	---	18.42
C	.030	.037	0.76	0.94
D	.478	.494	12.14	12.55
E	---	.757	---	19.23
F	.030	.040	0.76	1.02
G	.015	.025	0.38	0.64
K	.223	.248	5.66	6.30
H	---	.317	---	8.05
J	---	1.526	---	38.76
L	.048	.052	1.22	1.32
M	.075	.141	1.91	3.58
N	.015	.025	0.38	0.64

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. The pin undercut may be omitted.
4. Marking to be in accordance with [MIL-PRF-3098](#).

FIGURE 1. Crystal unit - CR42/U - Continued.

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REQUIREMENTS:

Dimensions, marking, and configuration: See figure 1.

Frequency range: 90 kHz to 250 kHz, inclusive.

Capacitance, shunt: See table I.

Frequency tolerance:

Operating temperature range: ± 30 parts per million (ppm).

Frequency stability: ± 20 ppm.

Equivalent resistance: 90 kHz to 170 kHz: 4,500 ohms, maximum.
170+ kHz to 250 kHz: 5,000 ohms, maximum.

Mode of oscillation: Fundamental.

Rated drive level: 1.0 mW, maximum.

Antiresonance, load capacitance: 32.0 pF ± 0.5 pF.

Temperature ranges:

Operable: -55°C to $+70^{\circ}\text{C}$, inclusive.

Operating (controlled): $+70^{\circ}\text{C}$ to $+80^{\circ}\text{C}$, inclusive.

Reference temperature: $+75^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

Shock (specified pulse):

Frequency change permitted: +5 ppm, -10 ppm.

Equivalent resistance change permitted: ± 15 percent.

Vibration: [Method 201 of MIL-STD-202](#), amplitude 0.015 inch (0.030 inch total excursion).

Frequency change permitted: +5 ppm, -10 ppm.

Equivalent resistance change permitted: ± 15 percent.

Thermal shock:

Frequency change permitted: +5 ppm, -10 ppm.

Equivalent resistance change permitted: ± 15 percent.

Bond strength: 90 kHz to 170 kHz: 800 grams, minimum.
170+ kHz to 250 kHz: 700 grams, minimum.

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TABLE I. Capacitance, shunt.

Frequency range, inclusive <u>kHz</u>	Capacitance <u>pF</u> <u>1/</u>
90 to 170	$\frac{450}{f} + 1.2$
170+ to 250	$\frac{322}{f} + 1.2$

1/ The letter "f" represents specified frequency in kHz. A capacitance tolerance of $\pm 15\%$ is permitted.

Part or Identifying Number (PIN): CR42/U (followed by specified frequency), see 1.2 of [MIL-PRF-3098](#).

Referenced documents. In addition to [MIL-PRF-3098](#), this document references the following:

[MIL-STD-202](#).

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 - 99
DLA - CC

Preparing activity:

Army - CR

Agent:

DLA - CC

Review activities:

Army - AR, MI
Navy - AS, MC, SH
Air Force - 19, 84

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