

PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR47/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: 190 kHz to 500 kHz; fundamental; controlled; anti-resonance.

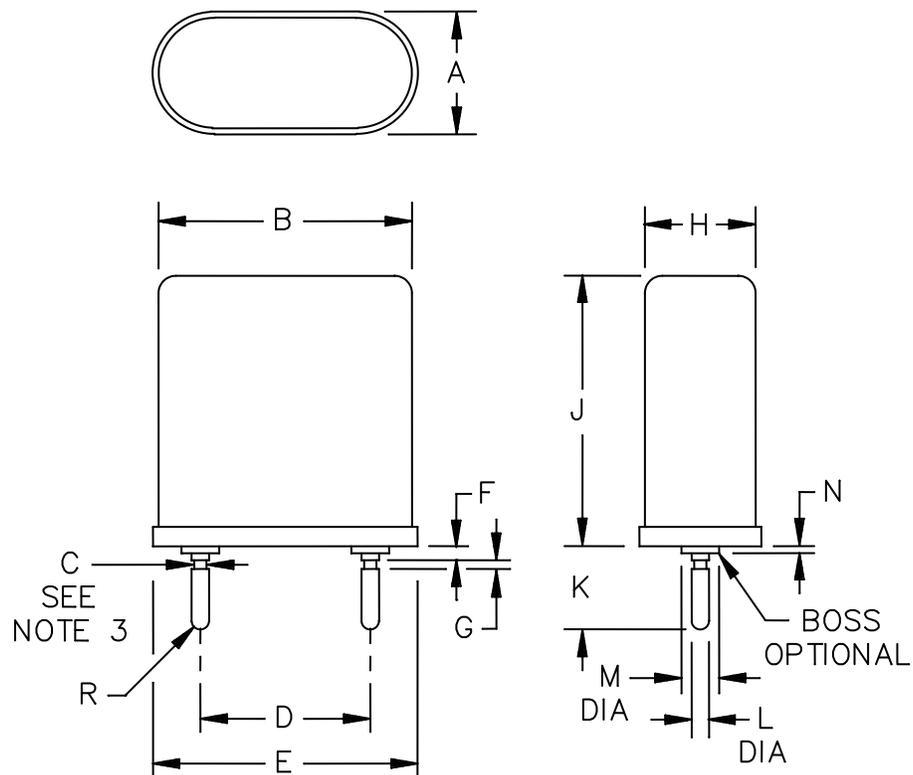


FIGURE 1. Crystal unit - CR47/U.

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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
H	---	.317	---	8.05
J	---	.775	---	19.69
K	.223	.248	5.66	6.30
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 - CR47/U - Continued.

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REQUIREMENTS:

Dimensions, marking, and configuration: See figure 1.

Frequency range: 190 kHz to 500 kHz, inclusive.

Frequency tolerance (operating temperature range): ± 20 parts per million (ppm).

Frequency stability: ± 5 ppm.

Equivalent resistance: See table II.

Mode of oscillation: Fundamental.

Antiresonance, load capacitance: 20.0 pF ± 0.5 pF.

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

Temperature ranges:

Operable: -40°C to $+70^{\circ}\text{C}$, inclusive.

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

Rated drive level: 1.0 mW, maximum.

Shock: (specified pulse):

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: ± 15 percent.

Vibration: [Method 201 of MIL-STD-202](#), amplitude .015 inch (total excursion .030 inch).

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: ± 15 percent.

Thermal shock:

Frequency change permitted: ± 10 ppm.

Equivalent resistance change permitted: ± 15 percent.

Bond strength: See table I.

TABLE I. Bond strength.

Frequency range, inclusive (kHz)	Grams, minimum
190 to 250	700
250+ to 320	500
320+ to 370	400
370+ to 435	300
435+ to 500	250

TABLE II. Equivalent resistance.

Frequency range, inclusive kHz	Maximum resistance Ohms
190 to 225	5,300
225+ to 275	6,000
275+ to 325	6,500
325+ to 375	7,000
375+ to 425	7,500
425+ to 475	8,000
475+ to 500	8,500

NOTE: Frequency and resistance at room temperature (for controlled types) requirement is not applicable.

Part or Identifying Number (PIN): CR47/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.

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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

(Project 5955-2009-043)

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.daps.dla.mil>.