

PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR37/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; noncontrolled; anti-resonance.

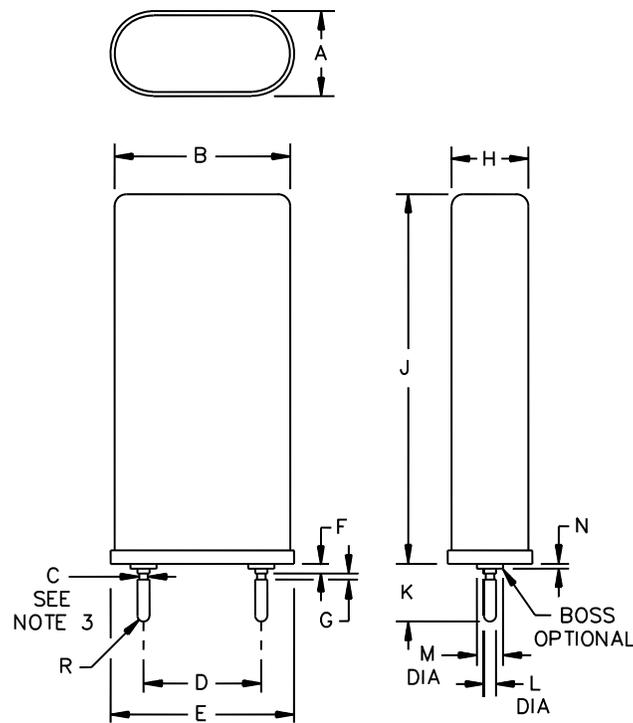


FIGURE 1. Crystal unit - CR37/U.



MIL-PRF-3098/17H

Ltr	Inches		mm	
	Min	Max	Min	Max
A	---	.352	---	8.94
B	---	.725	---	18.41
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	0.63
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	1.90	3.58
N	.015	.025	0.38	0.63

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 - CR37/U - Continued.

MIL-PRF-3098/17H

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:  $\pm 200$  parts per million (ppm).

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

Mode of oscillation: Fundamental.

Antiresonance, load capacitance: 20.0 pF  $\pm 0.5$  pF.

Operating temperature range (noncontrolled):  $-40^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ , inclusive.

Rated drive level: 1.0 mW, maximum.

Shock (specified pulse):

Frequency change permitted:  $\pm 10$  ppm.

Equivalent resistance change permitted:  $\pm 15$  percent.

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

Frequency change permitted:  $\pm 10$  ppm.

Equivalent resistance change permitted:  $\pm 15$  percent.

Temperature run:

Frequency change permitted:  $\pm 10$  ppm.

Equivalent resistance change permitted:  $\pm 15$  percent.

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

TABLE I. Capacitance, shunt.

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

<sup>1/</sup> The letter "f" represents specified frequency in kHz. A capacitance tolerance of ±15 percent is permitted.

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

(Project 5955-2015-004)

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.dla.mil/>.