

INCH POUND

MIL-PRF-3098/37K

13 April 2010

SUPERSEDING

MIL-PRF-3098/37J

19 December 2003

PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR59/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: 50 MHz to 125 MHz; fifth mechanical overtone; controlled; series resonance.

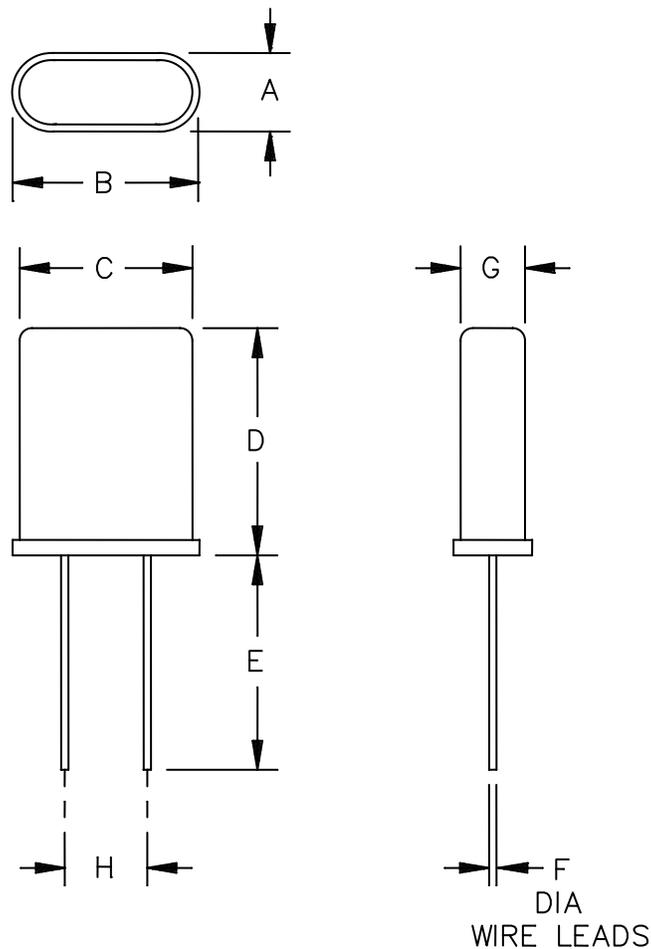


FIGURE 1. Crystal unit - CR59/U.

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Ltr	Inches		mm	
	Min	Max	Min	Max
A	---	.183	---	4.65
B	---	.435	---	11.05
C	---	.402	---	10.21
D	---	.530	---	13.46
E	.500	---	12.70	---
F	.016	.019	0.41	0.48
G	---	.150	---	3.81
H	.184	.200	4.67	5.08

NOTES:

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

FIGURE 1. Crystal unit - CR59/U.

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REQUIREMENTS:

Dimensions, marking, and configuration: See figure 1.

Frequency range: 50 MHz to 125 MHz, inclusive.

Capacitance, shunt: 7 pF, maximum.

Frequency tolerance:

Operating temperature range:  $\pm 20$  parts per million (ppm).

Room temperature:  $\pm 80$  ppm.

Frequency stability:  $\pm 5$  ppm.

Equivalent resistance: 50 MHz to 100 MHz: 50 ohms, maximum.  
100+ MHz to 125 MHz: 60 ohms, maximum.

Mode of oscillation: Fifth mechanical overtone.

Reference temperature:  $+85^{\circ}\text{C} \pm 1^{\circ}\text{C}$

Temperature ranges:

Operating (controlled):  $+80^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$ , inclusive.

Operable:  $-55^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$ , inclusive.

Calibration values:

Resistance: 60 ohms.

Resistor voltage drop: 0.24 volt.

Rated drive level: 1.0 mW, maximum.

Resonance: Series.

Shock:

Frequency change permitted:  $\pm 5$  ppm.

Equivalent resistance change permitted:  $\pm 10$  percent.

Vibration: [Method 201 of MIL-STD-202](#).

Frequency change permitted:  $\pm 5$  ppm

Equivalent resistance change permitted:  $\pm 10$  percent

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Thermal shock:

Frequency change permitted:  $\pm 5$  ppm.

Equivalent resistance change permitted:  $\pm 10$  percent.

Aging:

Frequency change permitted:  $\pm 5$  ppm.

Part or Identifying Number (PIN): CR59/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, SM

Navy - AS, CG, MC, OS, SH

Air Force - 19, 84

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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>.