

INCH-POUND

MIL-PRF-3098/14H
w/AMENDMENT 2
4 June 2025

SUPERSEDING
MIL-PRF-3098/14H
w/AMENDMENT 1
9 March 2020

PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR33/U

INACTIVE FOR NEW
DESIGN AFTER 4 JUNE 2025

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: 10 MHz to 30 MHz; third mechanical overtone; noncontrolled; anti-resonance.

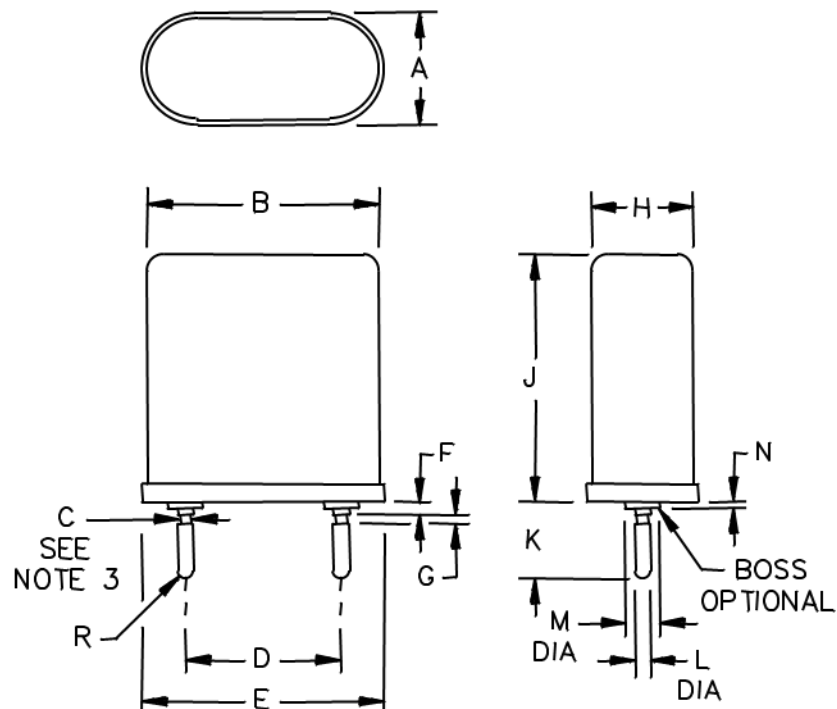


FIGURE 1. Crystal unit - CR33/U.

AMSC N/A

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

FSC 5955



MIL-PRF-3098/14H
w/AMENDMENT 2

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
H	---	.317	---	8.05
J	---	.775	---	19.68
K	.223	.248	5.66	6.30
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 - CR33/U - Continued.

REQUIREMENTS:

Dimensions, marking, and configuration: See [figure 1](#).

Frequency range: 10 MHz to 30 MHz, inclusive.

Capacitance, shunt: 12 pF, maximum.

Frequency tolerance: ± 50 parts per million (ppm).

Equivalent resistance: See [table I](#).

Antiresonance, load capacitance: 32.0 pF ± 0.5 pF.

Mode of oscillation: Third mechanical overtone.

Rated drive level: 1.0 mW, maximum.

Calibration values:

Resistance: 25 ± 1 ohms.

Resistor voltage drop: 0.25 volt.

Temperature range:

Operating (noncontrolled): -55°C to $+105^{\circ}\text{C}$, inclusive.

Shock (specified pulse):

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: ± 10 percent.

Thermal shock:

Frequency change permitted: ± 10 ppm.

Equivalent resistance change permitted: ± 10 percent.

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

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: ± 10 percent.

Low temperature storage:

Resistance: See [table I](#).

MIL-PRF-3098/14H
w/AMENDMENT 2

Temperature run:

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: ± 10 percent.

Aging:

Frequency change permitted: ± 5 ppm.

TABLE I. Equivalent resistance.

Frequency range, inclusive	Maximum resistance
<u>MHz</u>	<u>Ohms</u>
10.0 to 11.0	65
11.0+ to 12.0	60
12.0+ to 13.0	55
13.0+ to 14.0	50
14.0+ to 15.0	45
15.0+ to 16.0	41
16.0+ to 17.0	38
17.0+ to 18.0	36
18.0+ to 18.5	34
18.5+ to 19.0	32
19.0+ to 19.5	30
19.5+ to 20.0	28
20.0+ to 20.5	26
20.5+ to 21.0	25
21.0+ to 21.5	24
21.5+ to 22.0	23
22.0+ to 22.5	22
22.5+ to 23.0	21
23.0+ to 23.5	20
23.5+ to 24.0	19
24.0+ to 24.5	18
24.5+ to 25.0	17
25.0+ to 30.0	15

Part or Identifying Number (PIN): CR33/U (followed by specified frequency), see 1.2 of [MIL-PRF-3098](#).

Qualification inspection is not applicable for this specification sheet. Acceptance testing shall consist of screening, Group A and Group B inspection of [MIL-PRF-3098](#).

MIL-PRF-3098/14H
w/AMENDMENT 2

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

[MIL-STD-202-201](#).

Amendment notations. The margins of this specification sheet are marked with vertical lines to indicate modifications generated by this amendment. 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.

| Custodians:

Army - CR

Navy - EC

Air force - 85

DLA - CC

Preparing activity:

DLA - CC

(Project 5955-2025-002)

| Review activities:

Army - AR, MI

Navy - AS, MC

Air Force - 19

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/>.