

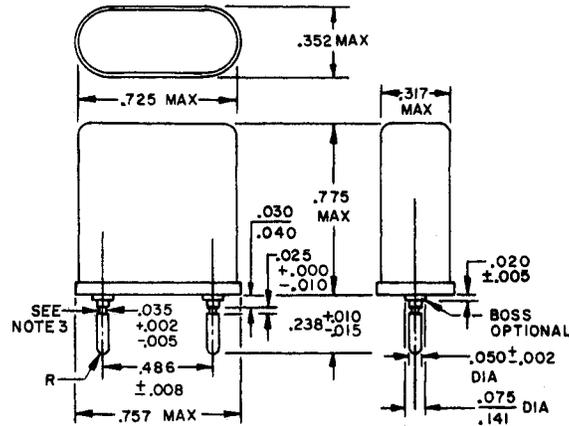
PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR33/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 and MIL-PRF-3098.

Pertinent characteristics: 10 MHz to 30 MHz; third mechanical overtone; noncontrolled; antiresonance.



Inches	mm	Inches	mm
.002	.05	.050	1.27
.005	.13	.075	1.91
.008	.20	.141	3.58
.010	.25	.238	6.05
.015	.38	.317	8.05
.020	.51	.352	8.94
.025	.64	.486	12.34
.030	.76	.725	18.42
.035	.89	.757	19.23
.040	1.02	.775	19.69

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.

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: Method 201 of MIL-STD-202.

Frequency change permitted: ± 5 ppm.

Equivalent resistance change permitted: ± 10 percent.

Low temperature storage:

Resistance: See table I.

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
25.5+ to 30.0	15

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army - CR
Navy - EC
Air Force - 11
DLA – CC

Review activities:

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

Preparing activity:

Army - CR

Agent:

DLA - CC

(Project 5955-0749-04)