INCH-POUND
MIL-PRF-3098/120C
27 August 1997
SUPERSEDING
MIL-C-3098/120B (ER)
24 September 1992

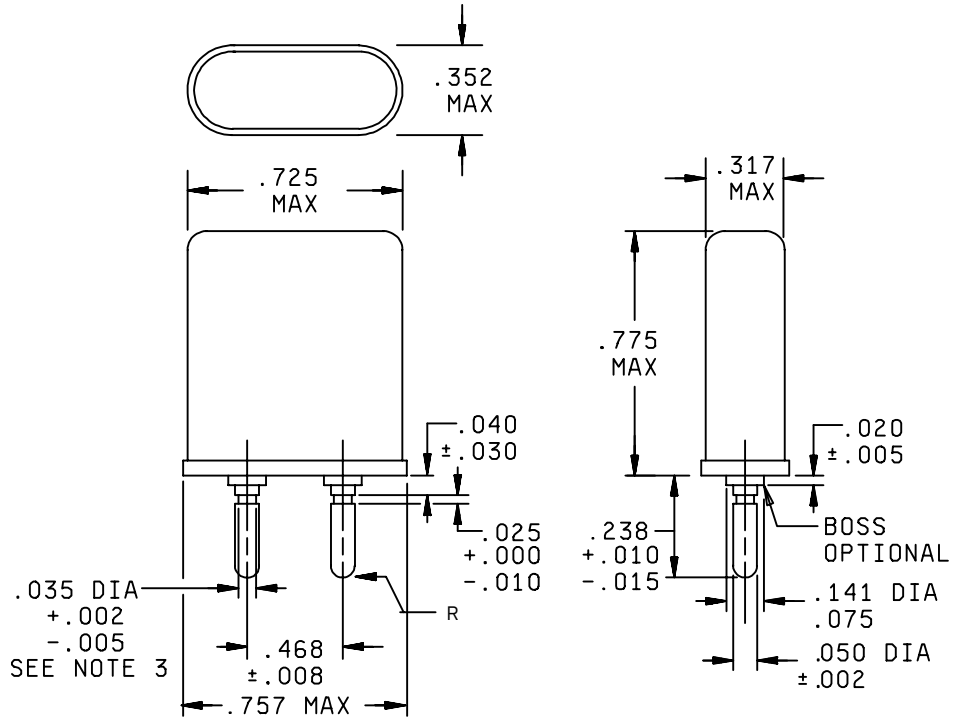
PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR131/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: 0.8 MHz to 20 MHz; fundamental; controlled; antiresonance.



INCHES	MM
.002	.05
.005	.13
.008	.20
.010	.25
.015	.38
.020	.51
.025	.64
.030	.76
.035	.89
.040	1.02
.050	1.27
.075	1.91
.141	3.58
.238	6.05
.317	8.05
.352	8.94
.486	12.34
.725	18.42
.757	19.23
.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 shall be in accordance with MIL-PRF-3098.

FIGURE 1. Crystal unit - CR131/U.

REQUIREMENTS:

Dimensions, marking, and configuration: See figure 1.

Frequency range: 0.8 MHz to 20 MHz, inclusive.

Frequency stability: ±5 ppm.

Antiresonance, load capacitance: 30.0 pF ±0.5 pF.

Frequency and equivalent resistance: See table I.

Reference temperature: 75°C ±1°C.

Frequency tolerance: ±20 ppm.

TABLE I. Equivalent resistance.

Frequency range, inclusive	Maximum resistance
MHz	Ohms
0.80 to 0.85	630
0.85+ to 0.90	600
0.90+ to 1.00	580
1.00+ to 1.12	540
1.12+ to 1.25	490
1.25+ to 1.37	450
1.37+ to 1.50	410
1.50+ to 1.62	380
1.62+ to 1.75	330
1.75+ to 1.87	300
1.87+ to 2.00	290
2.00+ to 2.12	270
2.12+ to 2.25	250
2.25+ to 2.60	200
2.60+ to 3.00	150
3.00+ to 3.40	110
3.40+ to 3.75	90
3.75+ to 4.00	75
4.00+ to 5.00	60
5.00+ to 7.00	35
7.00+ to 10.00	24
10.00+ to 15.00	22
15.00+ to 20.00	20

Mode of oscillation: Fundamental.

Operable temperature range: -55°C to +70°C and +80°C to +90°C, inclusive.

Operating temperature range (controlled): +70°C to +80°C, inclusive.

Rated drive level: 1.0 mW, maximum.

Capacitance, shunt: 7.0 pF, maximum.

Shock (specified pulse): 1/

Frequency change permitted: ±5 ppm.

Equivalent resistance change permitted: 0.8 MHz to 2.0 MHz ±15 percent.
2.0 MHz + to 20.0 MHz ±10 percent.

Vibration: Method 201, MIL-STD-202.

Frequency change permitted: ±5 ppm.

Equivalent resistance change permitted: 0.8 MHz to 2.0 MHz ±15 percent.
2.0+ MHz to 20.0 MHz ±10 percent.

Thermal shock:

Frequency change permitted: ±5 ppm.

Equivalent resistance change permitted: ±15 percent.

Aging:

Frequency change permitted: ±5 ppm.

NOTE: This crystal unit is identical to the CR27/U, except for a load capacitance rating of 30 pF ±0.5 pF. This unit is not interchangeable with the CR27/U.

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

1/ The violation of $P = I^2R$ is intentional at the higher resistance of the crystal unit.

Custodians:
Army - CR

Review activities:
Army - AR, MI

Preparing activity:
Army - CR

Agent:
DLA - CC

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