

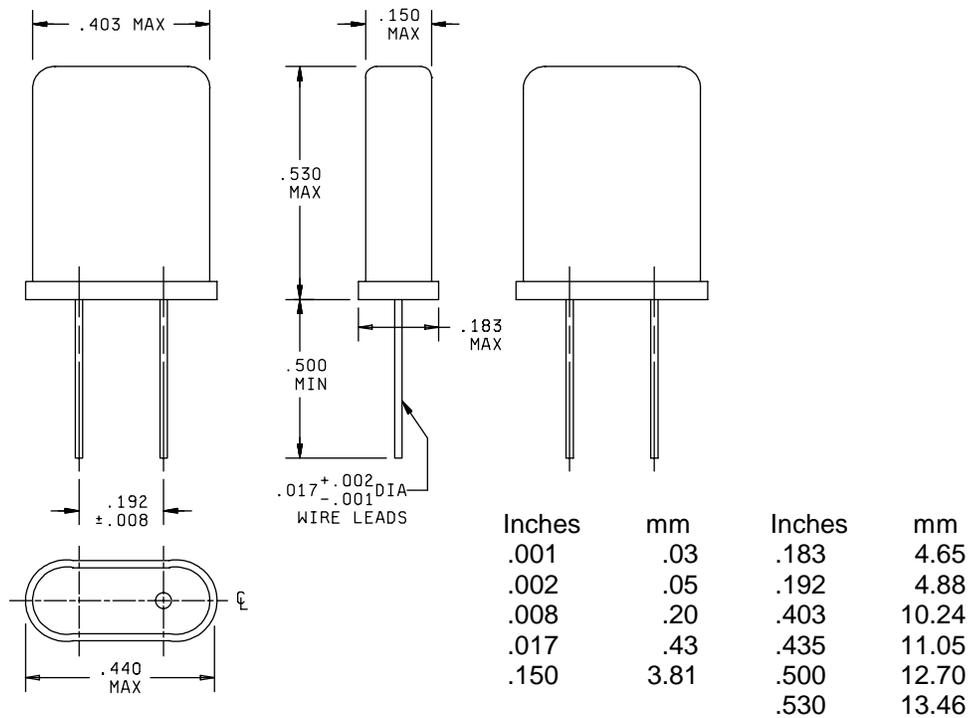
**INCH-POUND**  
MIL-PRF-3098/146C (CR)  
19 December 2003  
SUPERSEDING  
MIL-PRF-3098/146B (CR)  
27 August 1997

**PERFORMANCE SPECIFICATION SHEET**  
**CRYSTAL UNIT, QUARTZ, CR165/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: 2.4 MHz to 20 MHz; fundamental; noncontrolled; antiresonance.



**NOTES:**

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Corrosion resistant metal plating of the enclosure after resistance welding is permitted.
4. Marking to be in accordance with MIL-PRF-3098.

FIGURE 1. Crystal unit - CR165/U.

MIL-PRF-3098/146C

REQUIREMENTS:

Dimensions, marking, and configuration: See figure 1.

Frequency range: 2.4 MHz to 20 MHz, inclusive.

Frequency tolerance :  $\pm 50$  ppm.

Equivalent resistance: See table I.

TABLE I Equivalent resistance .

Frequency range, inclusive. MHz	Maximum resistance Ohms
2.40 to 2.60	300
2.61+ to 2.90	250
2.90+ to 3.75	180
3.75+ to 4.75	120
4.75+ to 6.00	75
6.00+ to 7.00	50
7.00+ to 10.00	30
10.00+ to 20.00	25

Mode of oscillation: Fundamental.

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

Drive level: 1.0 mW, maximum.

Antiresonance, load capacitance:  $30.0\text{ pF} \pm 0.5\text{ pF}$ .

Capacitance, shunt:

2.4 MHz to 4.0 MHz --- 1.7 pF minimum to 7.0 pF maximum.

4.0 MHz to 6.0 MHz --- 2.7 pF minimum to 7.0 pF maximum.

6.0 MHz to 20.0 MHz --- 3.7 pF minimum to 7.0 pF maximum.

Shock:

Frequency change permitted:  $\pm 5$  ppm.

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

Vibration: Method 204, MIL-STD-202, test condition A.

Frequency change permitted:  $\pm 5$  ppm.

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

MIL-PRF-3098/146C

Temperature cycling:

Frequency change permitted:  $\pm 5$  ppm.

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

Aging:

Frequency change permitted:  $\pm 5$  ppm.

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

Custodian:  
Army - CR  
DLA - CC

Preparing activity:  
Army - CR

Agent:  
DLA - CC

(Project 5955-A213)