

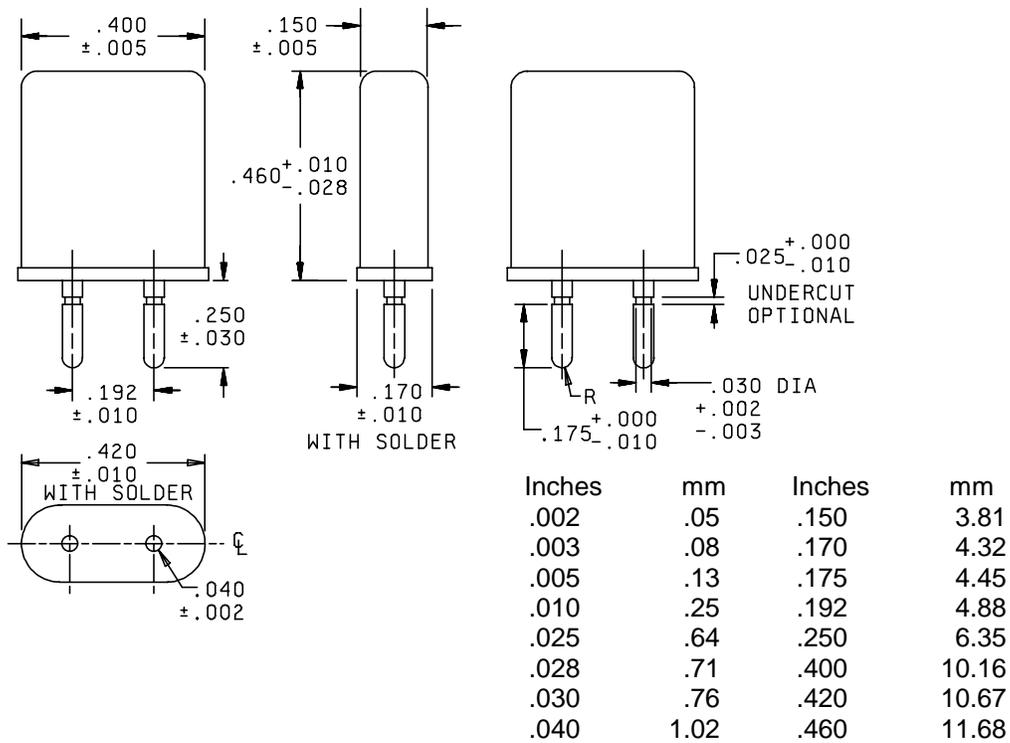
PERFORMANCE SPECIFICATION SHEET

CRYSTAL UNIT, QUARTZ, CR109/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 11.5 MHz; fundamental; controlled; antiresonance.



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 - CR109/U.

MIL-PRF-3098/85C

REQUIREMENTS:

Dimensions, marking, and configuration: See figure 1.

Frequency range: 10 MHz to 11.5 MHz, inclusive.

Frequency tolerances:

Operating temperature range:  $\pm 0.002$  percent.

Reference temperature:  $\pm 0.002$  percent.

Room temperature:  $\pm 0.008$  percent.

Frequency stability:  $\pm 0.0005$  percent.

Mode of oscillation: Fundamental.

Reference temperature:  $85^{\circ}\text{C} \pm 2^{\circ}\text{C}$ .

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.

Capacitance, load:  $32.0 \text{ pF} \pm 0.5 \text{ pF}$ .

Rated drive level: 1.0 mW, maximum.

Calibration values:

Resistance: 11 ohms.

Crystal current: 15 mA.

Capacitance, shunt: 7 pF, maximum.

Equivalent resistance: 22 ohms, maximum.

Frequency change permitted:  $\pm 0.0004$  percent.

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

Vibration: Method 201, MIL-STD-202; double amplitude 0.036 inches or 10 gravity units, whichever is the limiting value. Frequency shall be cycled between 10 Hz and 500 Hz in 15-minute cycles.

Frequency change permitted:  $\pm 0.0004$  percent.

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

Aging:

Frequency change permitted:  $\pm 0.0005$  percent.

Reference documents. In addition to MIL-PRF-3098, this document references the following:

MIL-STD-202

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

MIL-PRF-3098/85C

Custodians:

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

Preparing activity:  
DLA - CC

(Project 5955-0754)

Review activities:

Air Force - 19, 99

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 [www.dodssp.daps.mil](http://www.dodssp.daps.mil).