

INCH-POUND

MIL-PRF-3098/85D
w/AMENDMENT 2
4 June 2025

SUPERSEDING
MIL-PRF-3098/85D
w/AMENDMENT 1
24 June 2019

PERFORMANCE SPECIFICATION SHEET

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

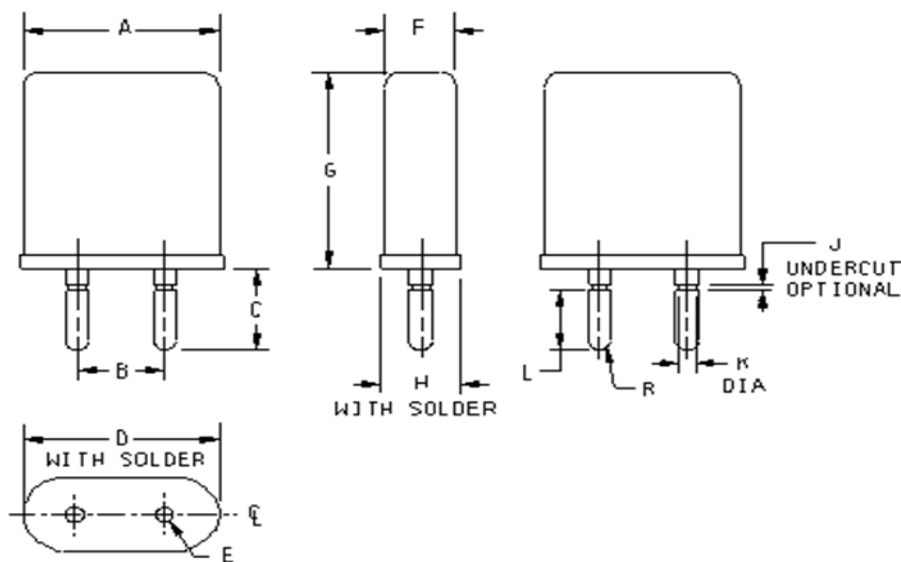


FIGURE 1. Crystal unit - CR109/U.

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

FSC 5955



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Ltr	Inches		mm	
	Min	Max	Min	Max
A	.395	.405	10.03	10.29
B	.182	.202	4.62	5.13
C	.220	.280	5.59	7.11
D	.410	.430	10.41	10.92
E	.038	.042	0.96	1.07
F	.145	.155	3.68	3.94
G	.432	.470	10.97	11.94
H	.160	.180	4.06	4.57
J	.015	.025	0.38	0.64
K	.027	.032	0.68	0.81
L	.165	.175	4.19	4.45

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 - Continued.

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REQUIREMENTS:

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

Frequency range: 10 MHz to 11.5 MHz, inclusive.

Frequency tolerances:

Operating temperature range: ± 0.002 percent.

Reference temperature: ± 0.002 percent.

Room temperature: ± 0.008 percent.

Frequency stability: ± 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°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.

Shock:

Frequency change permitted: ± 0.0004 percent.

Equivalent resistance change permitted: ± 10 percent.

Vibration: [MIL-STD-202-201](#); double amplitude .036 inches (0.91 mm) 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: ± 0.0004 percent.

Equivalent resistance change permitted: ± 10 percent.

Aging:

Frequency change permitted: ± 0.0005 percent.

Part or Identifying Number (PIN): CR109/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](#).

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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 5955-2025-006)

Review activities:

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/>.