CR28/U-Series Specifications

0.757L x 0.352W x 0.775H (in)

PDI *MIL-PRF-3098* Qualified Product List (QPL) crystals are available in both standard or custom frequencies to provide precision timing in a resistance welded HC-48 package.

ex) **CR—28—/U—7M000000**

COMPONENT	**NUMBER**	**BASIC INDICATOR**	**XXXXXXXX**
Crystal Unit	Type of Crystal	General Utility	Specified Nominal Frequency

Parameter		**Frequency Range**	**Units**
		2.250000 to 20.000000	**MHz**
Mode of Oscillation		Fundamental	
Equivalent Series Resistance		See Table 1	
Reference Temperature	±1	+75	°C
Operating Temperature Range	Controlled	+70 to +80	°C
Operable Temperature Range		-55 to +70 and +80 to +90	°C
Frequency Tolerance (Inclusive)	Room Temperature	±70	ppm
	Operating Temperature Range	±20	
Frequency Stability		±5	ppm
Drive Level	Max	1.0	mW
Load Capacitance (CL)		Series	
Seal Method	Resistance Weld		
Shunt Capacitance (C0)	Max	7.0	pF

Environmental Specifications			**Units**
Shock (Specified Pulse)	Frequency Change Permitted	±5	ppm
	Equivalent Resistance Change Permitted	±10	%
Vibration MIL-STD-202, Method 201	Frequency Change Permitted	±5	ppm
	Equivalent Resistance Change Permitted	±10	%
Thermal Shock	Frequency Change Permitted	±5	ppm
	Equivalent Resistance Change Permitted	±10	%
Aging	Frequency Change Permitted	±5	ppm

(Table 1) Equivalent Series Resistance		
Frequency Range (Inclusive)	**Max Resistance**	**Units**
2.25 MHz	150	Ω
>2.25 MHz – 2.60 MHz	120	
>2.60 MHz – 3.00 MHz	90	
>3.00 MHz – 3.40 MHz	70	
>3.40 MHz – 3.75 MHz	52	
>3.75 MHz – 4.00 MHz	45	
>4.00 MHz – 5.00 MHz	37	
>5.00 MHz – 7.00 MHz	25	
>7.00 MHz – 10.00 MHz	20	
>10.00 MHz – 15.00 MHz	18	
>15.00 MHz – 20.00 MHz	15	

The product described in this spec. consist of this specification and MIL-PRF-3098.

Decimal XXX = ± .008, XX = ± .020 *Metric* [XXX = ± .20], [XX = ± .50]

MIL-PRF-3098 w/Amendment 1 Table VI, Group B Inspection for Product Level B Crystals		
Subgroup I 1/	Requirement Paragraph	Method Paragraph
Solderability	3.7	4.10.3
Resistance to solvents (4 sample units)	3.8	4.10.4
Shock (Specified pulse)	3.17	4.10.13
Vibration	3.19.1	4.10.15.1
Thermal shock	3.23	4.10.19.1
Seal	3.24	4.10.26
Salt atmosphere (Corrosion)	3.27	4.10.21
Moisture resistance	3.28	4.10.22
Terminal strength 2/	3.30	4.10.23
Visual and mechanical examination (Internal) 2/	3.5, 3.6, 3.35	4.10.2.2
Bond strength (When specified) 2/	3.31	4.10.24
Subgroup II 3/		
Insulation resistance	3.14	4.10.10
Aging	3.29	4.10.27.1

1/ If the contractor can demonstrate that any of these tests have been performed for three consecutive periods with zero failures, the frequency of this test, with the approval of the qualifying activity, can be performed every 36 months. If the design, material, construction, or processing of the crystal units change, or if there are any quality problems or failures, the qualifying activity may require resumption of the original test frequency.

2/ Only two units are required. These two samples units shall be subjected to terminal strength, visual and mechanical (Internal), and bond strength (When specified see 3.1).

3/ If the contractor can demonstrate that any of these tests have been performed for six consecutive periods with zero failures, the frequency of this test, with the approval of the qualifying activity, can be performed every 36 months. If the design, material, construction, or processing of the crystal units change, or if there are any quality problems or failures, the qualifying activity may require resumption of the original test frequency.

PACKAGE DIMENSIONS