



MP-1 Series HC-49U Crystal Resonator

FEATURES

Resistance Weld (HC-49U)
AT-Cut Fundamental and Overtone Modes
Swept Quartz Options Available
Rugged Design to support harsh environments
MIL-PRF-3098 (CR64/U, CR69/U) equivalent

APPLICATIONS

Avionics and Aerospace
Communication and Navigation
Military Radios
Instrumentation and Industrial
Test and Measurement Equipment

ORDERING INFORMATION

MP-1		-R	00.0000 MHz
Product			
MP-1: Fundamental (AT-cut)			
302-000: Third Overtones (AT-cut) See Note 2			
309-000: Fifth Overtones (AT-cut) See Note 3			
320-000: Fifth Overtones (AT-cut) See Note 4			
RoHS Compliance			
-R: RoHS Compliant			
-V: non-RoHS			

Example of parallel resonant part Number: MP-1-R 16 .0000 MHz
Example of series resonant part Number: SRMP-1-R 16 .0000 MHz

Notes

Note 1	Series resonant designated "SR" prefix (i.e., SRMP-1-R)
Note 2	This is a parallel resonant part.
Note 3	This is a series resonant part.
Note 4	This is a series resonant part.

09/09/21 Rev. B

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency Range	F ₀	1.8432		200	MHz	
Frequency Tolerance	F/F	-30		+30	ppm	@ +25°C, see ordering information.
Frequency Stability	$\Delta F/F$	-50		+50	ppm	Over the operating temperature range
Aging		-5		+5	ppm	Per year
Load Capacitance			18		pF	See Note 1
Shunt Capacitance				7	pF	
ESR		See ESR Table				
Drive Level	DL	50	100	1000	μW	
Insulation Resistance	IR	500			MΩ	

Temperature

Operating Temperature	T _A	-10		+70	°C	
Storage Temperature	T _S	-55		+125	°C	

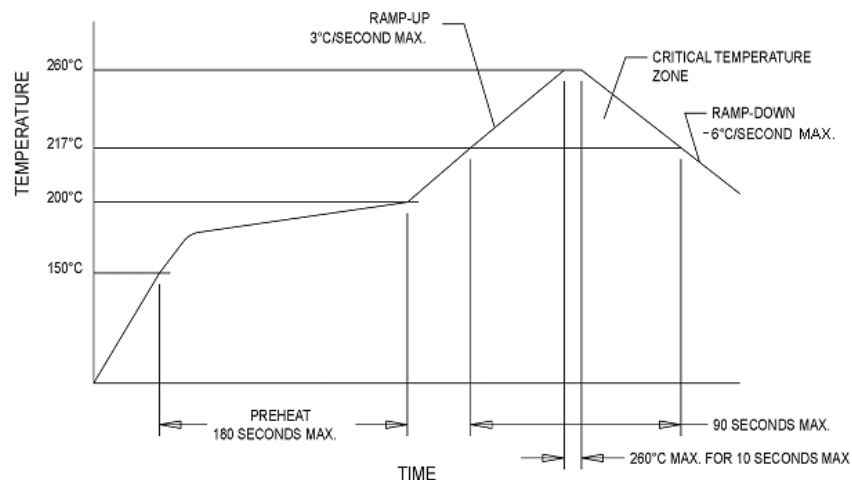
ESR Table

Frequency Range	ESR (MAX)
Fundamental (AT-cut)	
1.8432 to 1.999 MHz	700 Ω
2.000 to 2.399 MHz	600 Ω
2.400 to 3.299 MHz	400 Ω
3.300 to 3.569 MHz	140 Ω
3.570 to 3.999 MHz	100 Ω
4.000 to 5.999 MHz	75 Ω
6.000 to 7.999 MHz	50 Ω
8.000 to 10.999 MHz	40 Ω
11.000 to 14.999 MHz	30 Ω
15.000 to 19.999 MHz	25 Ω
20.000 to 34.000 MHz	25 Ω
Third Overtone (AT-cut) – Note 2	
20.000 to 49.999 MHz	40 Ω
50.000 to 75.000 MHz	50 Ω
Fifth Overtone (AT-cut) – Note 3	
50.000 to 125.000 MHz	90 Ω
Seventh Overtone (AT-cut) – Note 4	
125.000 to 200.000 MHz	150 Ω

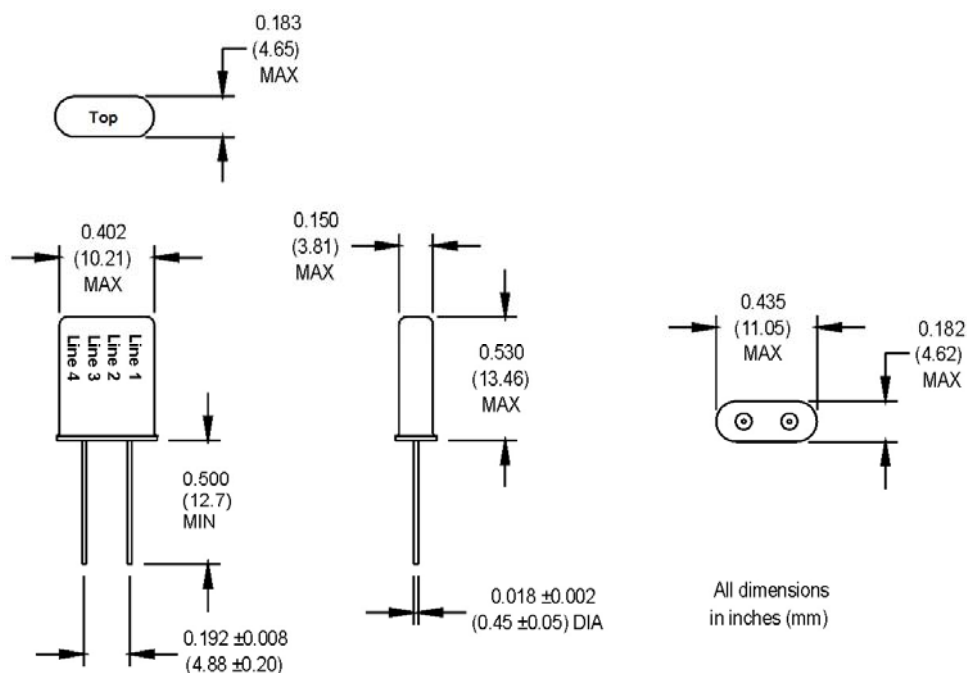
ENVIRONMENTAL CONDITIONS

Mechanical Shock	Per MIL-STD-202, Method 213, Condition C (100 g's, 6 ms duration, ½ sinewave)
Mechanical Vibration	Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)
Thermal Cycle	MIL-STD-883, Method 1010, B (-55°C to 125°C, 15 min dwell, 10 cycles)
Solderability	Per EIAJ-STD-002
Hermeticity	Per MIL-STD-202, Method 112 (1 x 10 ⁻⁸ atm cc/s of helium)
Max Wave Soldering	Conditions +260°C for 10 secs. Max.

LEAD FREE SOLDER PROFILE



MECHANICAL AND PIN OUT INFORMATION



MtronPTI reserves the right to make changes to the product(s) and service(s) described herein without notice.
No liability is assumed as a result of their use or application.