

# QUARTZ CRYSTAL

## RESISTANCE WELDED UM-1.-5 LOW PROFILE PACKAGE

### FEATURE

- Low Cost
- Communication Equipment
- Wide Frequency Range and AT Cut Crystal
- Excellent Aging

### ELECTRICAL SPECIFICATIONS

Nominal frequency	3.6864 to 225Mhz
Oscillation mode	See below table
Operating temperature range	-20°C--+70°C (Typical), -10°C ~ +60°C, -40°C ~ +85°C, or specify
Storage temperature range	-40°C--+85°C
Frequency tolerance	±30PPM at 25±2°C (Typical), or specify
Freq. Temp characteristics	±50PPM -20°C--+70°C (Typical), or specify
Load capacitance	Series, 16pF, 20pF, 30pF, or specify
Equivalent series resistance	See below table
Parallel capacitance(Co)	7PF Max
Drive level	100 μW
Insulation resistance	More than 500M Ω AT DC100V

### EQUIVALENT SERIES RESISTANCE(ESR) AND OSCILLATION MODE

Frequency Range	E.S.R (Ω)	Mode
3.6864MHz~40.000MHz	60Max	Fundamental/AT
30.000MHz~100.00MHz	60Max	3rd overtone /AT
80.000MHz~155.000MHz	80Max	5th overtone /AT
120.000MHz~225.000MHz	150Max	7th overtone /AT

### Mechanical characteristics

Resistance to shock:	±3PPM Max ±3 Ω Max, Naturally drop it 3 times on a hard wood plate from 100cm height
Resistance to vibration:	±3PPM Max ±3 Ω Max

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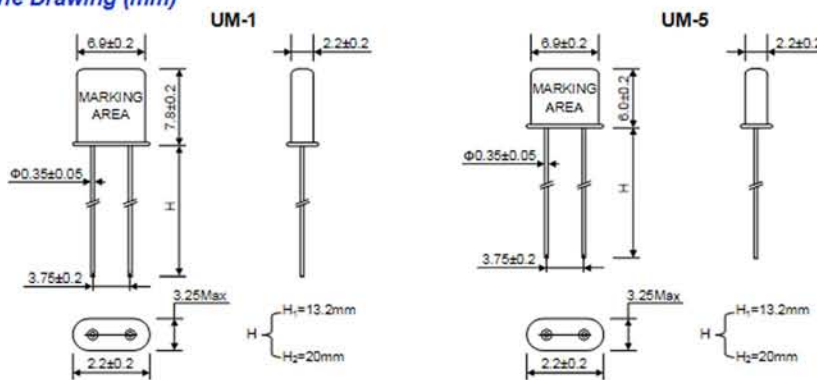
## RESISTANCE WELDED HC-49/S LOW PROFILE PACKAGE

### Reliability

Aging	$\pm 3\text{PPM Max/Year}$
Air tightness	
(1) Gross leak	should be immersed in hot water( $90 \pm 5^\circ\text{C}$ ) for 5 minutes
(2) Fine leak	should be less than $5 \times 10^{-8}$ atmcc/sec by helium leak detector
Low drive characteristics	Measured $\Delta 1, C1, 3$ point at 1.0, 10, 100 $\mu\text{W}$

### Dimension

#### Outline Drawing (mm)



20.000	20	30	40	F	B	50	H
Frequency e.g. 20.000:20.000 MHz	Load capacitance e.g. 20.20pf s:series	Frequency tolerance e.g. 30:±30ppm	E.S.R max e.g. 20:40Ωmax	oscillate mode F:Fundamental 3:3rd overtone 5:5th overtone	operating temperature range A:-10-60°C B:-20-70°C C:-40-85°C	temperature stability: e.g. 50:±50ppm	H:Normal (3.2mm) h:low (2.5mm)