

EC3SMD-10-13.000M

[Click part number to visit Part Number Details page](#)
REGULATORY COMPLIANCE (Data Sheet downloaded on Aug 9, 2020)

ITEM DESCRIPTION

Quartz Crystal Resonator HC49/UP 4 Pad Surface Mount (SMD) 4.0mm Height Metal Resistance Weld Seal 13.000MHz ± 30 ppm at 25°C, ± 50 ppm over -20°C to +70°C 10pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

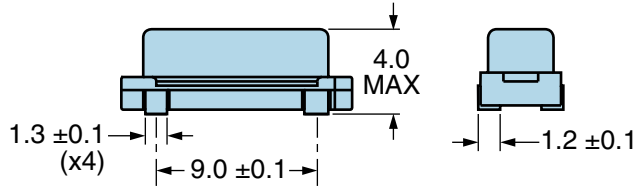
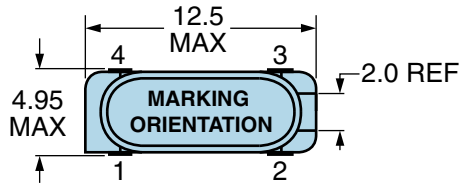
| | |
|-------------------------------|--|
| Nominal Frequency | 13.000MHz |
| Frequency Tolerance/Stability | ± 30 ppm at 25°C, ± 50 ppm over -20°C to +70°C |
| Aging at 25°C | ± 5 ppm/year Maximum |
| Load Capacitance | 10pF Parallel Resonant |
| Shunt Capacitance (C0) | 7pF Maximum |
| Equivalent Series Resistance | 70 Ohms Maximum |
| Mode of Operation | AT-Cut Fundamental |
| Drive Level | 1mWatts Maximum |
| Storage Temperature Range | -40°C to +85°C |
| Insulation Resistance | 500 Megaohms Minimum at 100Vdc |

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

| | |
|------------------------------|--------------------------------------|
| Fine Leak Test | MIL-STD-883, Method 1014 Condition A |
| Gross Leak Test | MIL-STD-883, Method 1014 Condition C |
| Mechanical Shock | MIL-STD-202, Method 213 Condition C |
| Resistance to Soldering Heat | MIL-STD-202, Method 210 |
| Resistance to Solvents | MIL-STD-202, Method 215 |
| Solderability | MIL-STD-883, Method 2003 |
| Temperature Cycling | MIL-STD-883, Method 1010 |
| Vibration | MIL-STD-883, Method 2007 Condition A |

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MECHANICAL DIMENSIONS (all dimensions in millimeters)

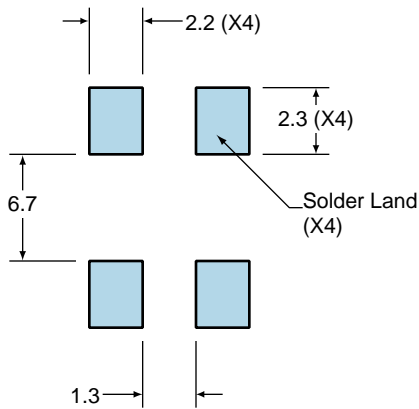


| PIN | CONNECTION |
|-----|--------------------|
| 1 | Crystal |
| 2 | Connected to Pin 3 |
| 3 | Connected to Pin 2 |
| 4 | Crystal |

| LINE | MARKING |
|------|---|
| 1 | E13.000 E=Ecliptek Designator |

Suggested Solder Pad Layout

All Dimensions in Millimeters

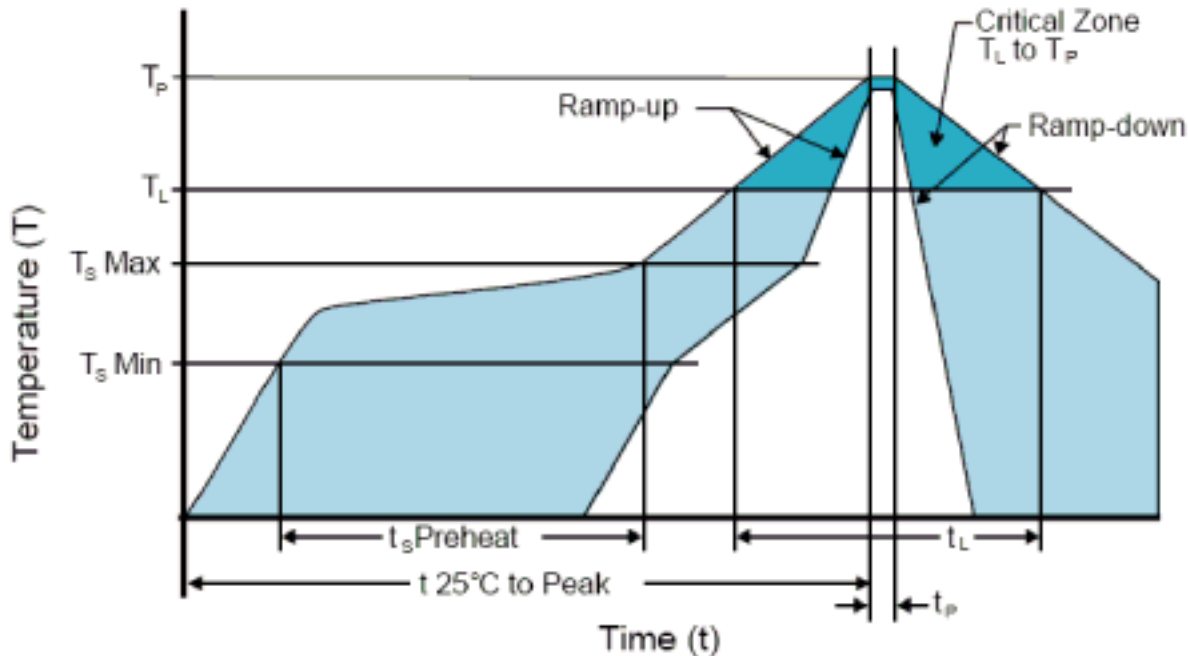


All Tolerances are ±0.1

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Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 225°C

Ts MAX to TL (Ramp-up Rate) 5°C/Second Maximum

Preheat

- Temperature Minimum (Ts MIN) N/A
 - Temperature Typical (Ts TYP) 150°C
 - Temperature Maximum (Ts MAX) N/A
 - Time (ts MIN) 30 - 60 Seconds

Ramp-up Rate (TL to TP) 5°C/Second Maximum

Time Maintained Above:

- Temperature (TL) 150°C
 - Time (tL) 200 Seconds Maximum

Peak Temperature (TP) 225°C Maximum

Target Peak Temperature (TP Target) 225°C Maximum 2 Times

Time within 5°C of actual peak (tp) 80 Seconds Maximum 2 Times

Ramp-down Rate 5°C/Second Maximum

Time 25°C to Peak Temperature (t) N/A

Moisture Sensitivity Level Level 1

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum.

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum.