

EC1SMD-16-27.000M TR [Click part number to visit Part Number Details page](#)



REGULATORY COMPLIANCE (Data Sheet downloaded on Oct 2, 2016)



ITEM DESCRIPTION

Quartz Crystal Resonator HC49/UP Short 2 Pad Surface Mount (SMD) 3.2mm Height Metal Resistance Weld Seal 27.000MHz ± 30 ppm at 25°C, ± 50 ppm over -20°C to +70°C 16pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

Nominal Frequency	27.000MHz
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	16pF Parallel Resonant
Shunt Capacitance (C0)	7pF Maximum
Equivalent Series Resistance	40 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	1mWatt 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

4.88 ± 0.20

0.50 MIN (x2)

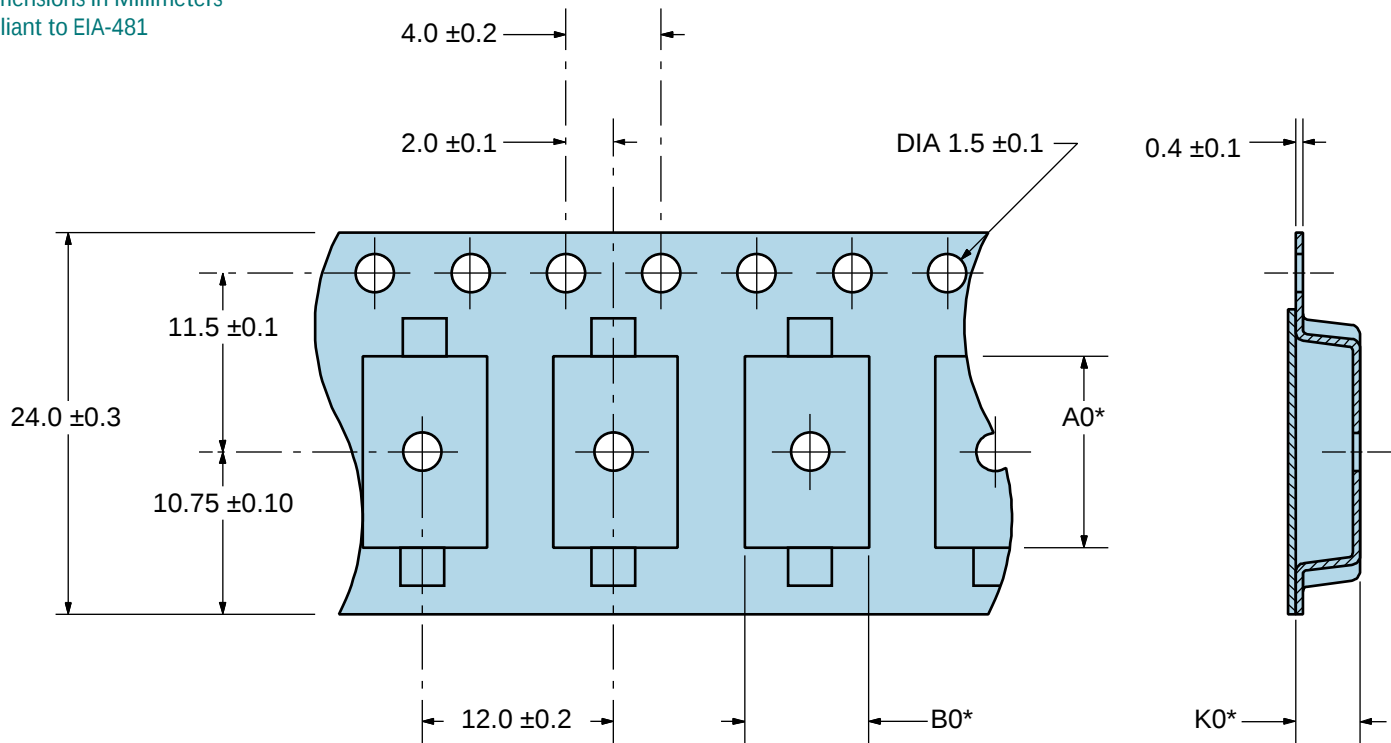
0.80 ± 0.30 (x2)

11.60 MAX

NOTE: Coplanarity 0.360 MAX

1-800-ECLIPTEK or 714.433.1200

Compliant to EIA-481



Technical drawing of a cylindrical component, showing front and side views with dimensions.

Front View Dimensions:

- Overall Diameter: DIA 50 MIN
- Inner Hole Diameter: DIA 20.2 MIN
- Slot Width: 2.5 MIN
- Slot Depth: 10.0 MIN
- Slot Location: DIA 40 MIN Access Hole at Slot Location
- Slot Position: 1.5 MIN
- Core Diameter: DIA 13.0 ± 0.2

Side View Dimensions:

- Overall Length: 360 MAX
- Slot Depth: 24.4 $+2.0/-0.0$
- Slot Width: 30.4 MAX

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Recommended Solder Reflow Methods



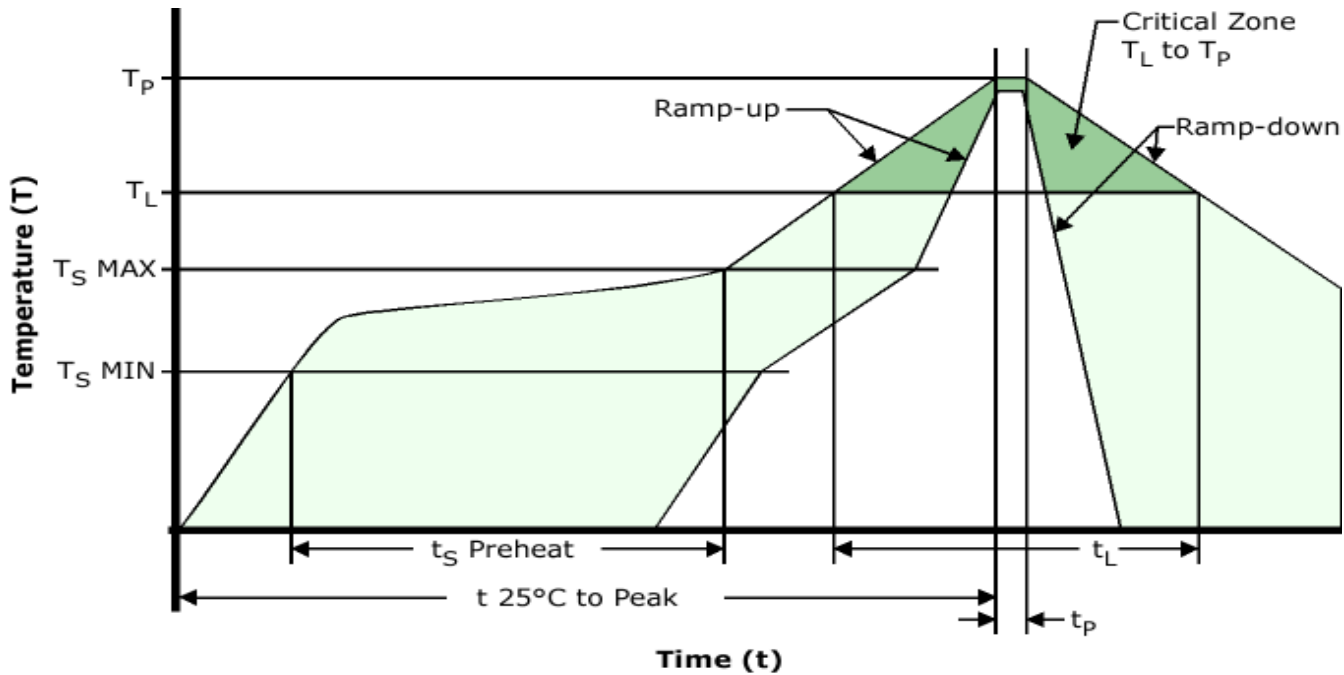
High Temperature Infrared/Convection

TS MAX to TL (Ramp-up Rate)	3°C/Second Maximum
Preheat	
- Temperature Minimum (TS MIN)	150°C
- Temperature Typical (TS TYP)	175°C
- Temperature Maximum (TS MAX)	200°C
- Time (ts MIN)	60 - 180 Seconds
Ramp-up Rate (TL to TP)	3°C/Second Maximum
Time Maintained Above:	
- Temperature (TL)	217°C
- Time (tL)	60 - 150 Seconds
Peak Temperature (TP)	260°C Maximum for 10 Seconds Maximum
Target Peak Temperature (TP Target)	250°C +0/-5°C
Time within 5°C of actual peak (tp)	20 - 40 Seconds
Ramp-down Rate	6°C/Second Maximum
Time 25°C to Peak Temperature (t)	8 Minutes Maximum
Moisture Sensitivity Level	Level 1

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Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 245°C

Ts MAX to Tl (Ramp-up Rate)	5°C/Second Maximum
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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
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Time Maintained Above:

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

Peak Temperature (Tp)	245°C Maximum
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Target Peak Temperature (Tp Target)	245°C Maximum 2 Times / 230°C Maximum 1 Time
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Time within 5°C of actual peak (tp)	10 Seconds Maximum 2 Times / 80 Seconds Maximum 1 Time
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Ramp-down Rate	5°C/Second Maximum
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Time 25°C to Peak Temperature (t)	N/A
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Moisture Sensitivity Level	Level 1
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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.