

E1UPA16-4.000M-I2



ITEM DESCRIPTION

Quartz Crystal Resonator HC49/US Short Thru-Hole 2.5mm Height Metal Resistance Weld Seal 4.000MHz ± 10 ppm at 25°C, ± 15 ppm over -20°C to +70°C 16pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

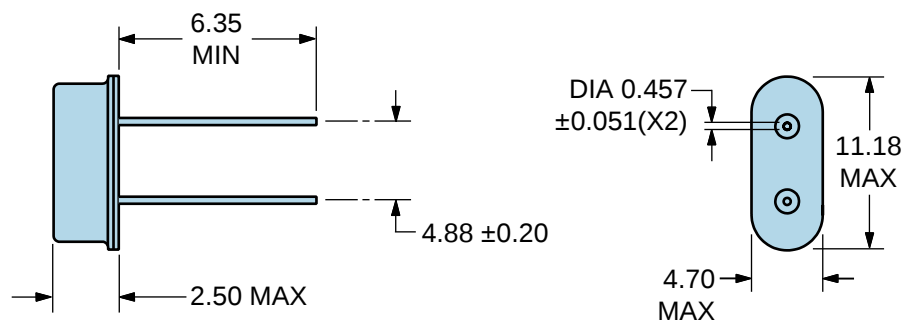
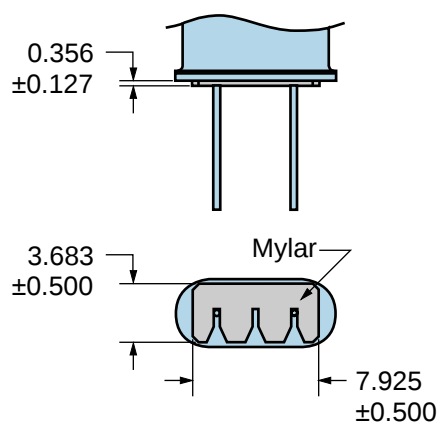
Nominal Frequency	4.000MHz
Frequency Tolerance/Stability	± 10 ppm at 25°C, ± 15 ppm over -20°C to +70°C
Aging at 25°C	± 5 ppm/year Maximum
Load Capacitance	16pF Parallel Resonant
Shunt Capacitance	7pF Maximum
Equivalent Series Resistance	200 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	1mWatt Maximum
Storage Temperature Range	-40°C to +125°C
Insulation Resistance	500 Megaohms Minimum (Measured at 100Vdc)

ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500V
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Flammability	UL94-V0
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Lead Integrity	MIL-STD-883, Method 2004
Mechanical Shock	MIL-STD-202, Method 213, Condition C
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A

E1UPA16-4.000M-I2 **MECHANICAL DIMENSIONS (all dimensions in millimeters)**

LINE	MARKING
1	E4.0000M <i>E=Ecliptek Designator</i>

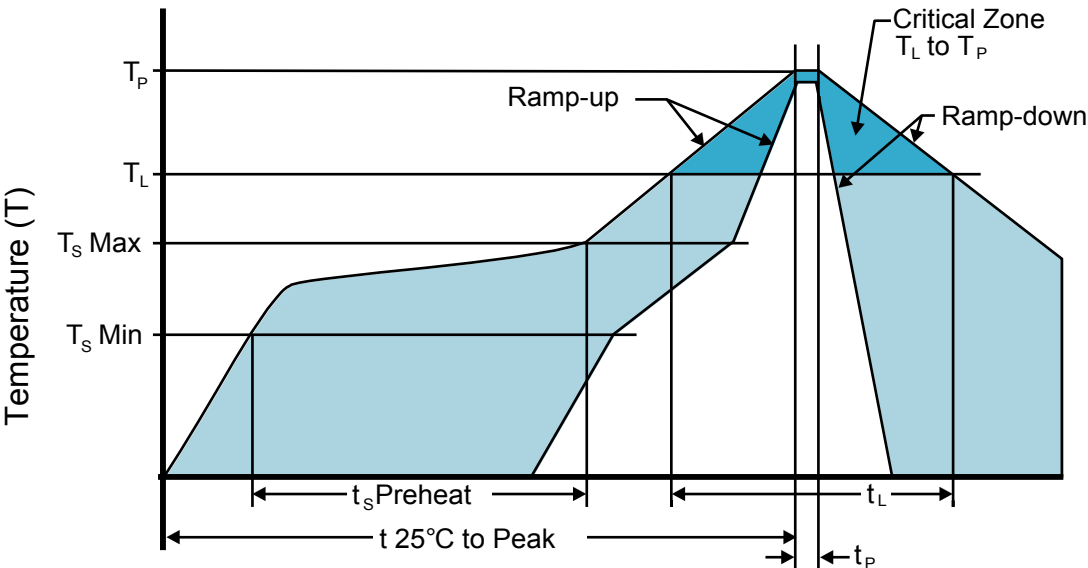
**Value Added Option - Mylar Insulator Tab**

All dimensions are in millimeters

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Recommended Solder Reflow Methods

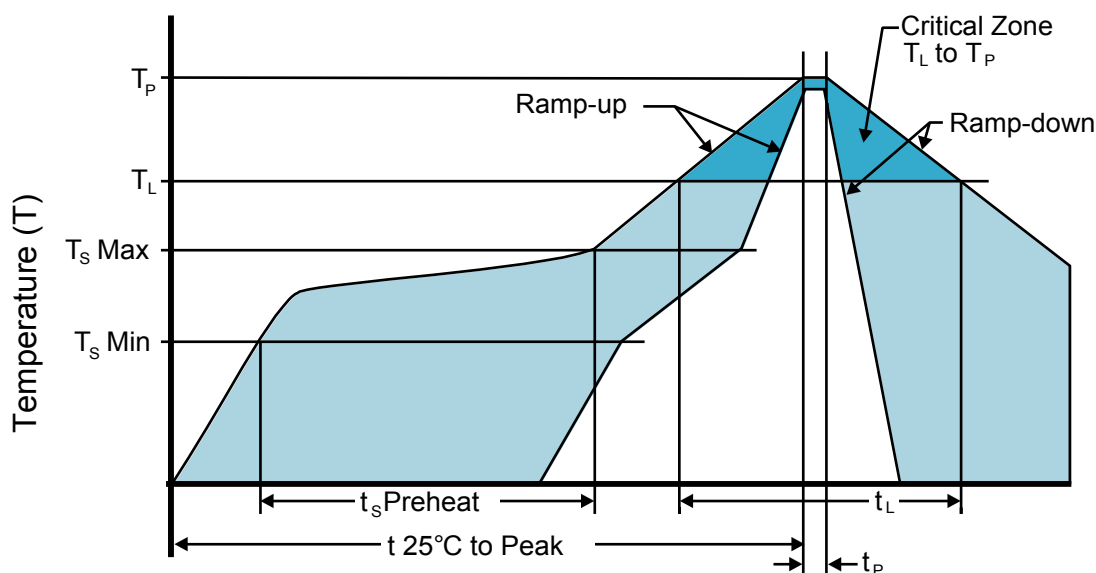


High Temperature Solder Bath (Wave Solder)

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
Additional Notes	Temperatures shown are applied to back of PCB board and device leads only.

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Recommended Solder Reflow Methods



Low Temperature Solder Bath (Wave Solder) Time (t)

T_S MAX to T_L (Ramp-up Rate) 5°C/Second Maximum

Preheat

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

Ramp-up Rate (T_L to T_P) 5°C/Second Maximum

Time Maintained Above:

- Temperature (T_L) 150°C
- Time (t_L) 200 Seconds Maximum

Peak Temperature (T_P) 245°C Maximum

Target Peak Temperature (T_P Target) 245°C Maximum 1 Time / 235°C Maximum 2 Times

Time within 5°C of actual peak (t_p) 5 Seconds Maximum 1 Time / 15 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

Additional Notes Temperatures shown are applied to back of PCB board and device leads only.

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to back of PCB board and device leads only.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to back of PCB board and device leads only.)