

E2UHA18-12.000M [↗](#)

| | | | |
|--|---|---|---|
| Lead Free  COMPLIANT | EU RoHS 2011/65 + 2015/863 COMPLIANT | ChinaRoHS  COMPLIANT | REACH SVHC 163 Jun 15, 2015 COMPLIANT |
|--|---|---|---|



ITEM DESCRIPTION


Quartz Crystal Resonator HC49/US Thru-Hole 3.68mm Height Metal Resistance Weld Seal 12.000MHz ±15ppm at 25°C, ±30ppm over -20°C to +70°C 18pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

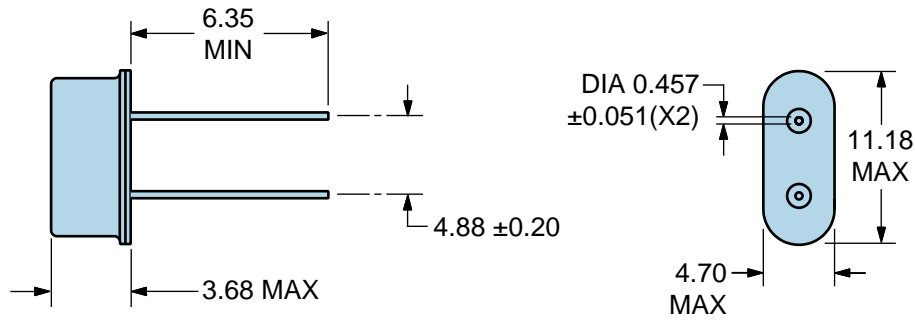
| | |
|--------------------------------------|--|
| Nominal Frequency | 12.000MHz |
| Frequency Tolerance/Stability | ±15ppm at 25°C, ±30ppm over -20°C to +70°C |
| Aging at 25°C | ±5ppm/year Maximum |
| Load Capacitance | 18pF Parallel Resonant |
| Shunt Capacitance | 7pF Maximum |
| Equivalent Series Resistance | 70 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 |

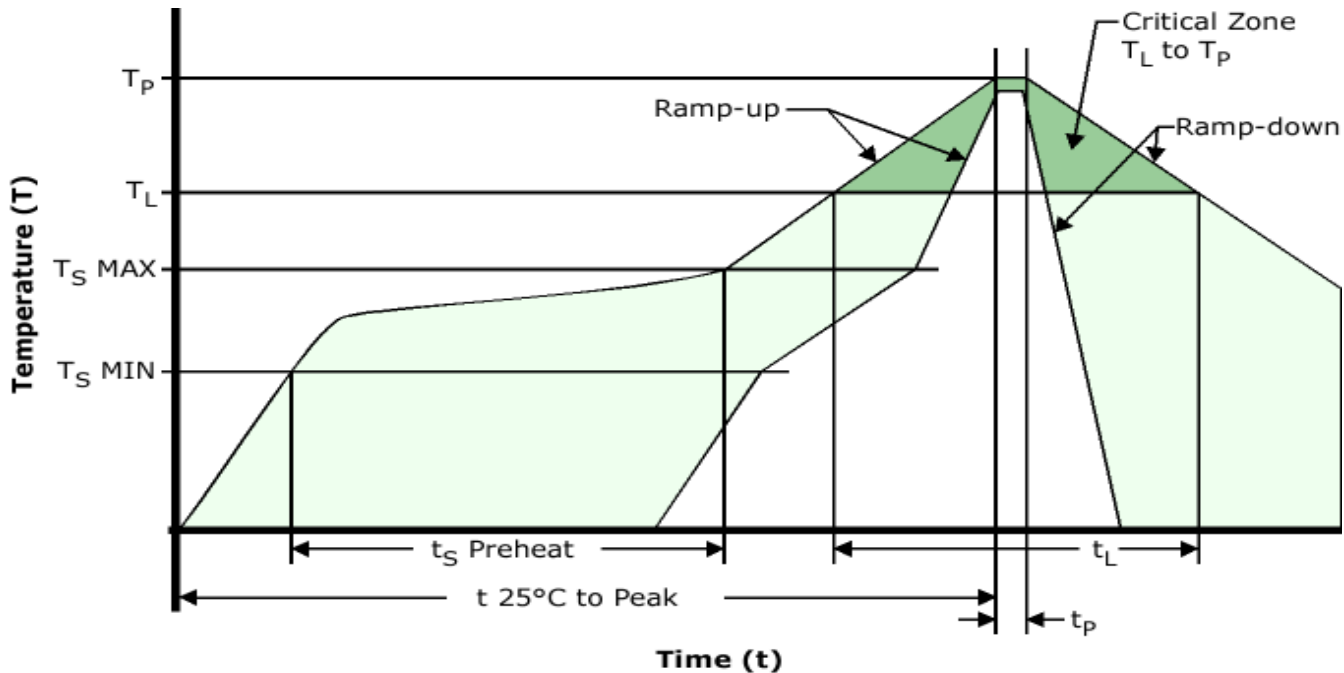
E2UHA18-12.000M **MECHANICAL DIMENSIONS (all dimensions in millimeters)**

| LINE | MARKING |
|------|---|
| 1 | E12.000M <i>E=Ecliptek Designator</i> |



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Recommended Solder Reflow Methods

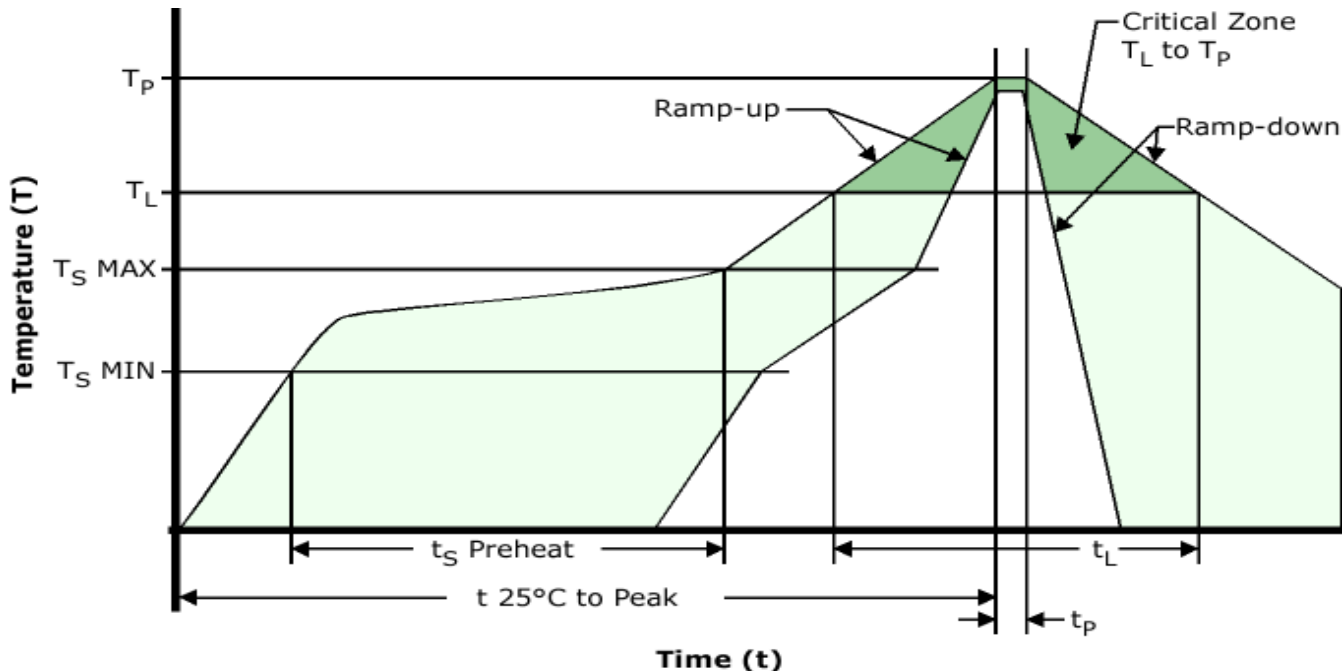


High Temperature Solder Bath (Wave Solder)

| | |
|--|--|
| T_S MAX to T_L (Ramp-up Rate) | 3°C/Second Maximum |
| Preheat | |
| - Temperature Minimum (T_S MIN) | 150°C |
| - Temperature Typical (T_S TYP) | 175°C |
| - Temperature Maximum (T_S MAX) | 200°C |
| - Time (t_s MIN) | 60 - 180 Seconds |
| Ramp-up Rate (T_L to T_P) | 3°C/Second Maximum |
| Time Maintained Above: | |
| - Temperature (T_L) | 217°C |
| - Time (t_L) | 60 - 150 Seconds |
| Peak Temperature (T_P) | 260°C Maximum for 10 Seconds Maximum |
| Target Peak Temperature (T_P Target) | 250°C +0/-5°C |
| Time within 5°C of actual peak (t_p) | 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)

| | |
|--|--|
| 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) | 245°C Maximum |
| Target Peak Temperature (TP Target) | 245°C Maximum 1 Time / 235°C Maximum 2 Times |
| Time within 5°C of actual peak (tp) | 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.)

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