

# E1UKAS-4.4336M

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## REGULATORY COMPLIANCE (Data Sheet downloaded on Dec 12, 2019)



◀ Click badges to download compliance docs

Regulatory Compliance standards are subject to updates by governing bodies. Click the badges to download the latest compliance docs for this part number directly from Ecliptek.



## ITEM DESCRIPTION

Quartz Crystal Resonator HC49/US Short Thru-Hole 2.5mm Height Metal Resistance Weld Seal 4.4336MHz ±15ppm at 25°C, ±20ppm over 0°C to +70°C Series Resonant

## ELECTRICAL SPECIFICATIONS

|                               |   |
|-------------------------------|---|
| Nominal Frequency             | 4.4336MHz                                 |
| Frequency Tolerance/Stability | ±15ppm at 25°C, ±20ppm over 0°C to +70°C  |
| Aging at 25°C                 | ±5ppm/year Maximum                        |
| Load Capacitance              | Series Resonant                           |
| Shunt Capacitance             | 7pF Maximum                               |
| Equivalent Series Resistance  | 200 Ohms Maximum                          |
| Mode of Operation             | AT-Cut Fundamental                        |
| Drive Level                   | 1mWatt Maximum                            |
| Storage Temperature Range     | -55°C to +125°C                           |
| Insulation Resistance         | 500 Megaohms Minimum (Measured at 100Vdc) |

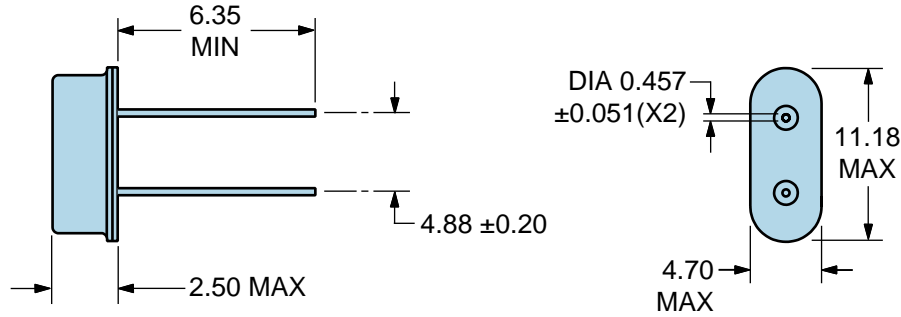
## ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

|                              |   |
|------------------------------|---|
| 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         |

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### MECHANICAL DIMENSIONS (all dimensions in millimeters)

| LINE | MARKING   |
|------|---|
| 1    | <b>E4.4336M</b><br><i>E=Ecliptek Designator</i> |



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

|  |  |
|--|--|
| <b>Ts MAX to TL (Ramp-up Rate)</b>         | 5°C/Second Maximum   |
| <b>Preheat</b>                             |  |
| - Temperature Minimum (Ts MIN)             | N/A  |
| - Temperature Typical (Ts TYP)             | 150°C  |
| - Temperature Maximum (Ts MAX)             | N/A  |
| - Time (ts MIN)                            | 30 - 60 Seconds  |
| <b>Ramp-up Rate (TL to TP)</b>             | 5°C/Second Maximum   |
| <b>Time Maintained Above:</b>              |  |
| - Temperature (TL)                         | 150°C  |
| - Time (tL)                                | 200 Seconds Maximum  |
| <b>Peak Temperature (TP)</b>               | 245°C Maximum  |
| <b>Target Peak Temperature (TP Target)</b> | 245°C Maximum 1 Time / 235°C Maximum 2 Times                               |
| <b>Time within 5°C of actual peak (tp)</b> | 5 Seconds Maximum 1 Time / 15 Seconds Maximum 2 Times                      |
| <b>Ramp-down Rate</b>                      | 5°C/Second Maximum   |
| <b>Time 25°C to Peak Temperature (t)</b>   | N/A  |
| <b>Moisture Sensitivity Level</b>          | Level 1  |
| <b>Additional Notes</b>                    | 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.)