PART NUMBER DATA SHEET

# E2UGA18-24.576M TR

Click part number to visit Part Number Details page

Ecliptek

## REGULATORY COMPLIANCE (Data Sheet downloaded on Mar 17, 2019)

Lead Free COMPLIANT | EU RoHS 2011/65 + 2015/863 COMPLIANT | China RoHS COMPLIANT | REACH 163 SVHC COMPLIANT

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.

DRC CONFLICT FREE

## ITEM DESCRIPTION

Quartz Crystal Resonator HC49/US Thru-Hole 3.68mm Height Metal Resistance Weld Seal 24.576MHz ±15ppm at 25°C, ±30ppm over 0°C to +70°C 18pF Parallel Resonant

## ELECTRICAL SPECIFICATIONS

| | |
|---|---|
| **Nominal Frequency** | 24.576MHz |
| **Frequency Tolerance/Stability** | ±15ppm at 25°C, ±30ppm over 0°C to +70°C |
| **Aging at 25°C** | ±5ppm/year Maximum |
| **Load Capacitance** | 18pF Parallel Resonant |
| **Shunt Capacitance** | 7pF Maximum |
| **Equivalent Series Resistance** | 40 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 |



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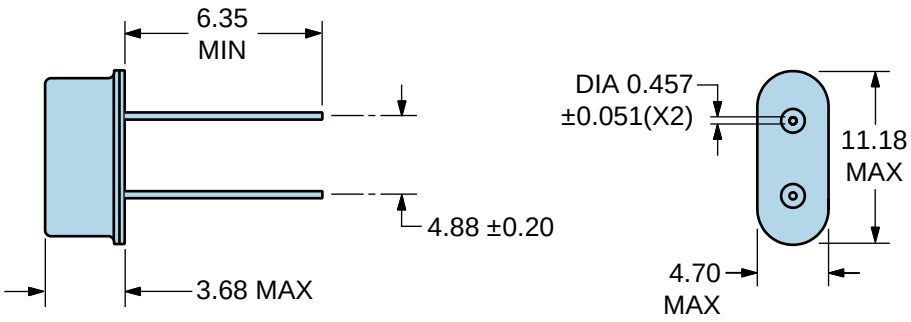
## MECHANICAL DIMENSIONS (all dimensions in millimeters)

| LINE | MARKING |
|---|---|
| 1 | **E24.576M**<br>*E=Ecliptek Designator* |



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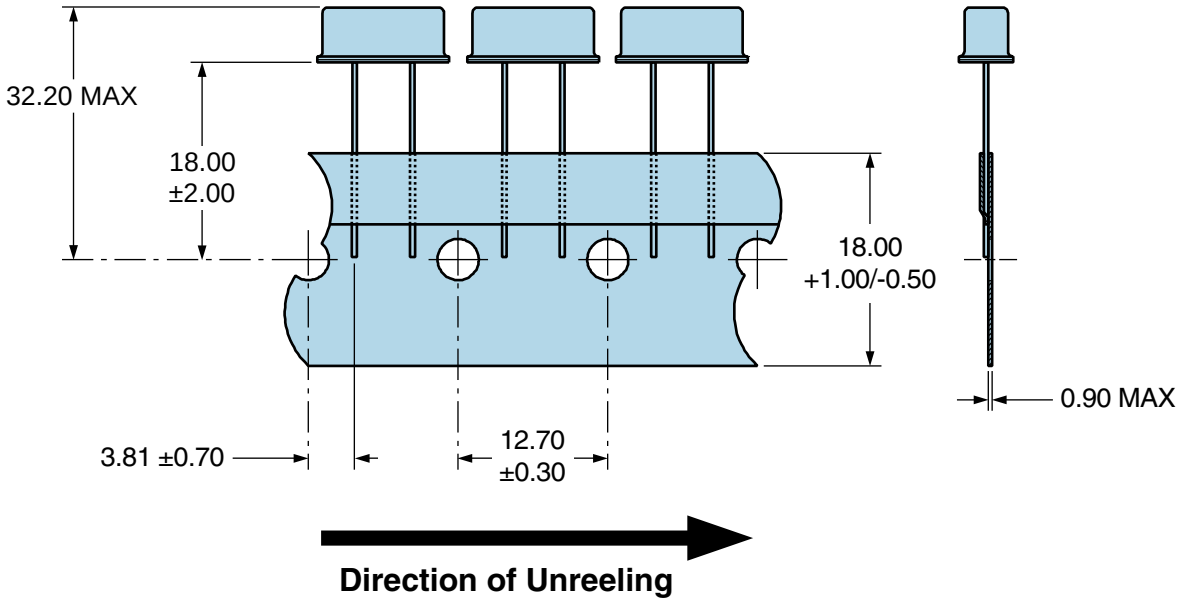
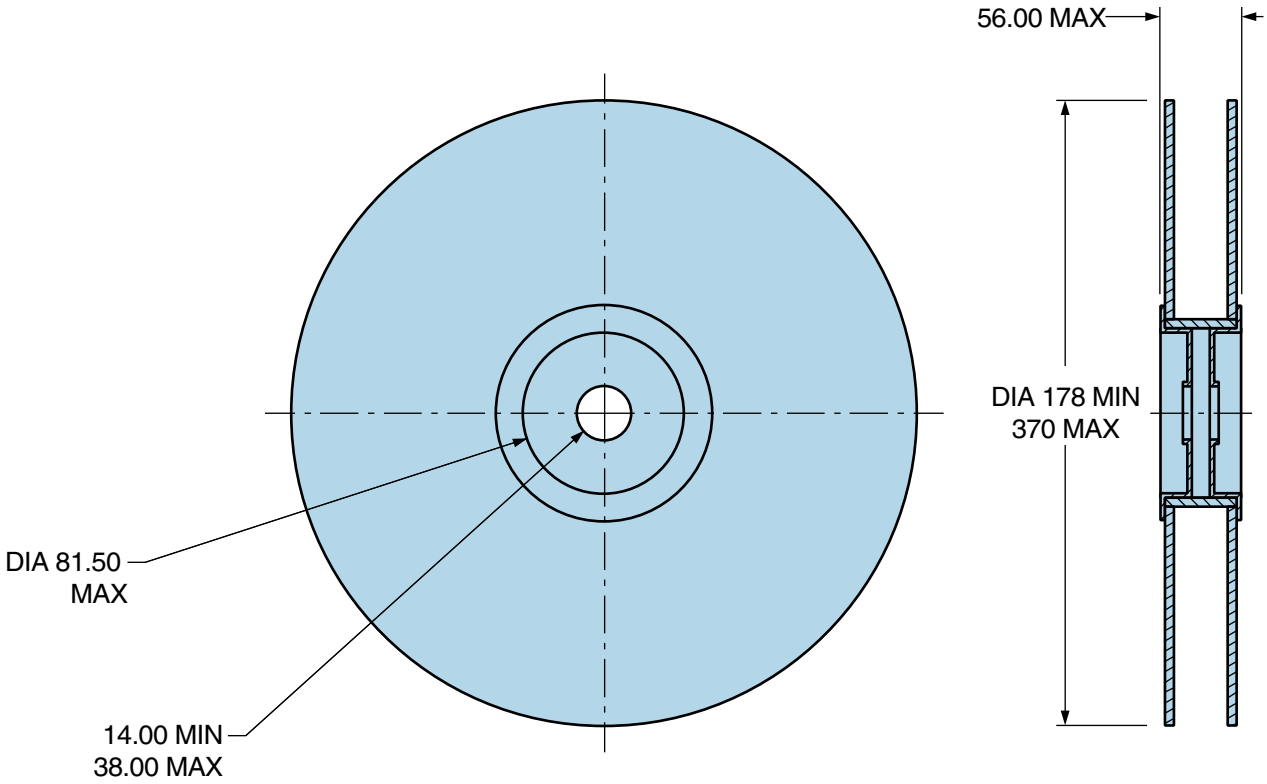
## Tape & Reel Dimensions

Quantity Per Reel: 1,000 units

All Dimensions in Millimeters

Compliant to EIA-468



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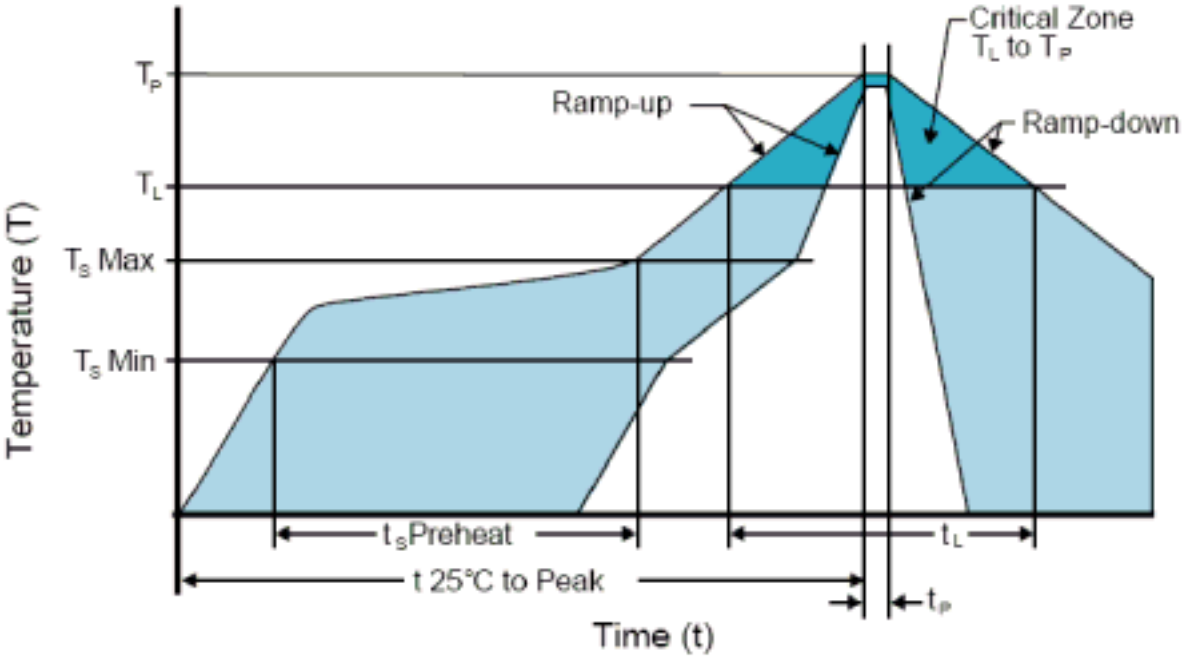
## Recommended Solder Reflow Methods




## 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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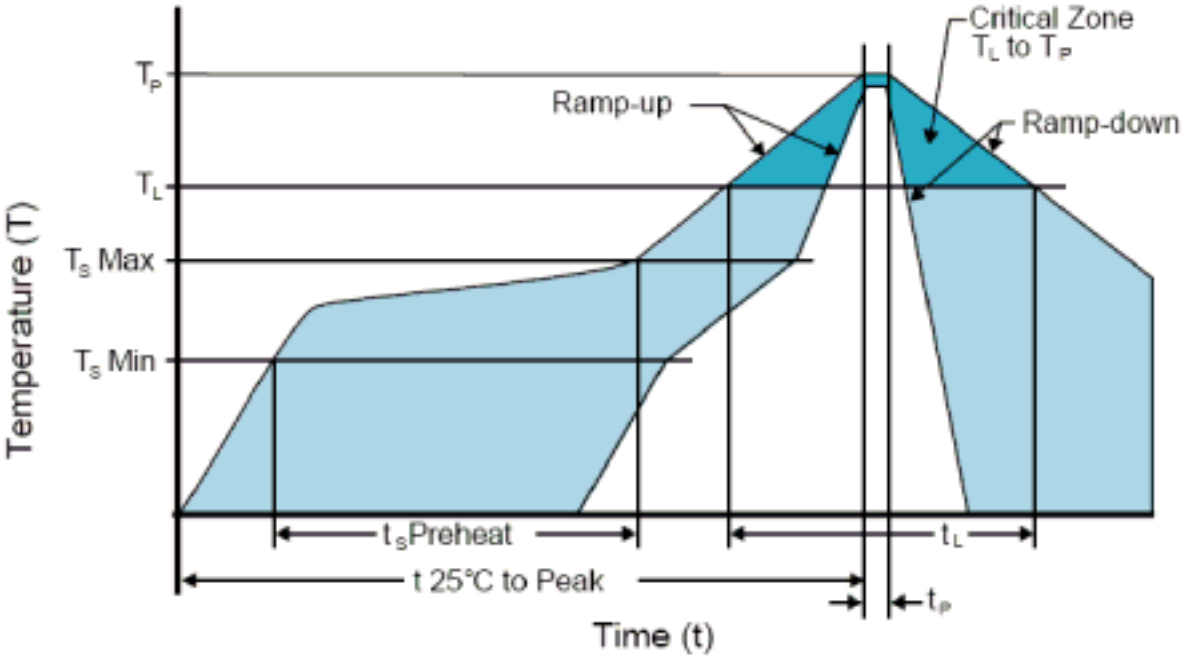


## Low Temperature Solder Bath (Wave Solder)

| | |
|---|---|
| **$T_S$ 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.)



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