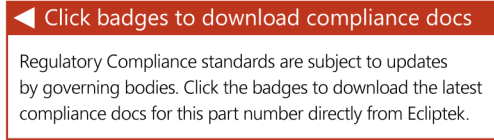


EA1012HA07-52.000M TR [Click part number to visit Part Number Details page](#)

REGULATORY COMPLIANCE (Data Sheet downloaded on Feb 14, 2020)



ITEM DESCRIPTION

Quartz Crystal Resonator 1.0mm x 1.2mm x 0.33mm 4 Pad Ceramic Surface Mount (SMD) 52.000MHz ± 15 ppm at 25°C, ± 20 ppm over -20°C to +70°C 07pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

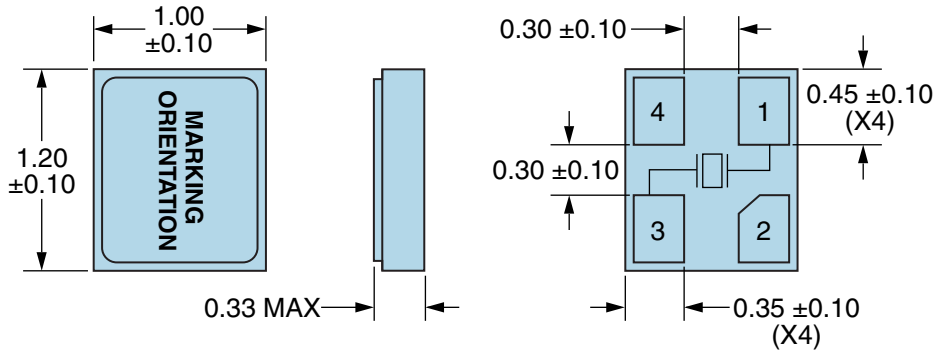
| | |
|-------------------------------|--|
| Nominal Frequency | 52.000MHz |
| Frequency Tolerance/Stability | ± 15 ppm at 25°C, ± 20 ppm over -20°C to +70°C |
| Aging at 25°C | ± 3 ppm/year Maximum |
| Load Capacitance | 07pF Parallel Resonant |
| Shunt Capacitance | 5pF Maximum |
| Equivalent Series Resistance | 60 Ohms Maximum |
| Mode of Operation | AT-Cut Fundamental |
| Drive Level | 100 μ Watts Maximum |
| Spurious Response | -3dB Minimum (Measured from Fo to Fo +5000ppm) |
| Storage Temperature Range | -40°C to +85°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 |
| Mechanical Shock | MIL-STD-883, Method 2002, Condition B |
| Moisture Resistance | MIL-STD-883, Method 1004 |
| Moisture Sensitivity | J-STD-020, MSL 1 |
| 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 |

EA1012HA07-52.000M TR [Click part number to visit Part Number Details page](#)

MECHANICAL DIMENSIONS (all dimensions in millimeters)



| PIN | CONNECTION |
|-----|--------------|
| 1 | Crystal |
| 2 | Cover/Ground |
| 3 | Crystal |
| 4 | No Connect |

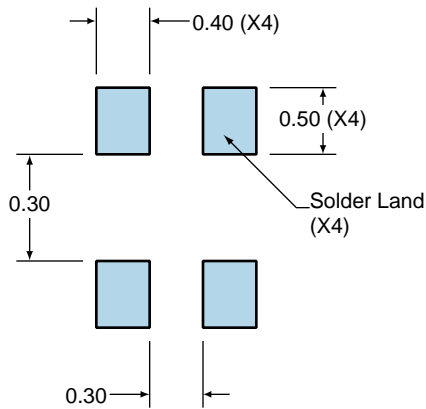
| LINE | MARKING |
|------|---|
| 1 | XXXX XXXX=Ecliptek Manufacturing Identifier |

Electron-Beam Sealed

Terminal Plating Thickness: Gold (0.3 to 1.0µm) over Nickel (1.27 to 8.89µm).

Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ±0.1

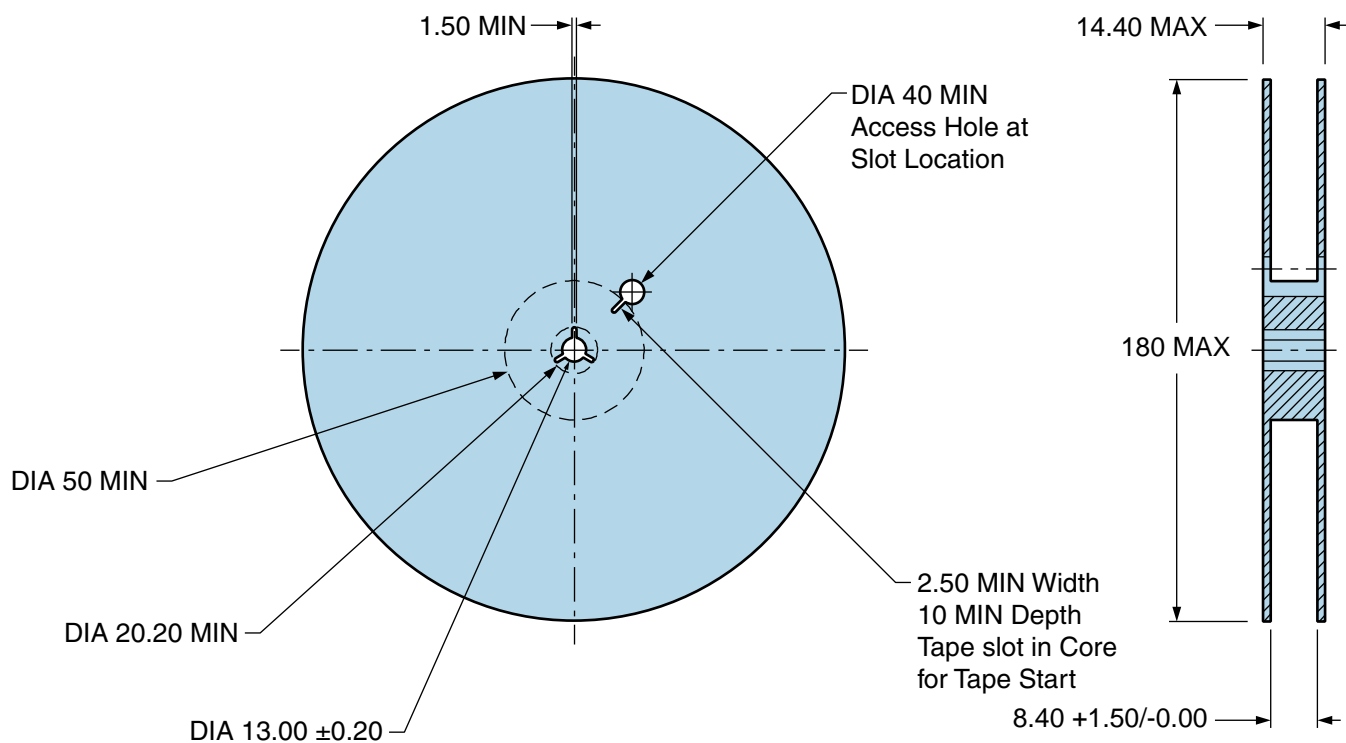
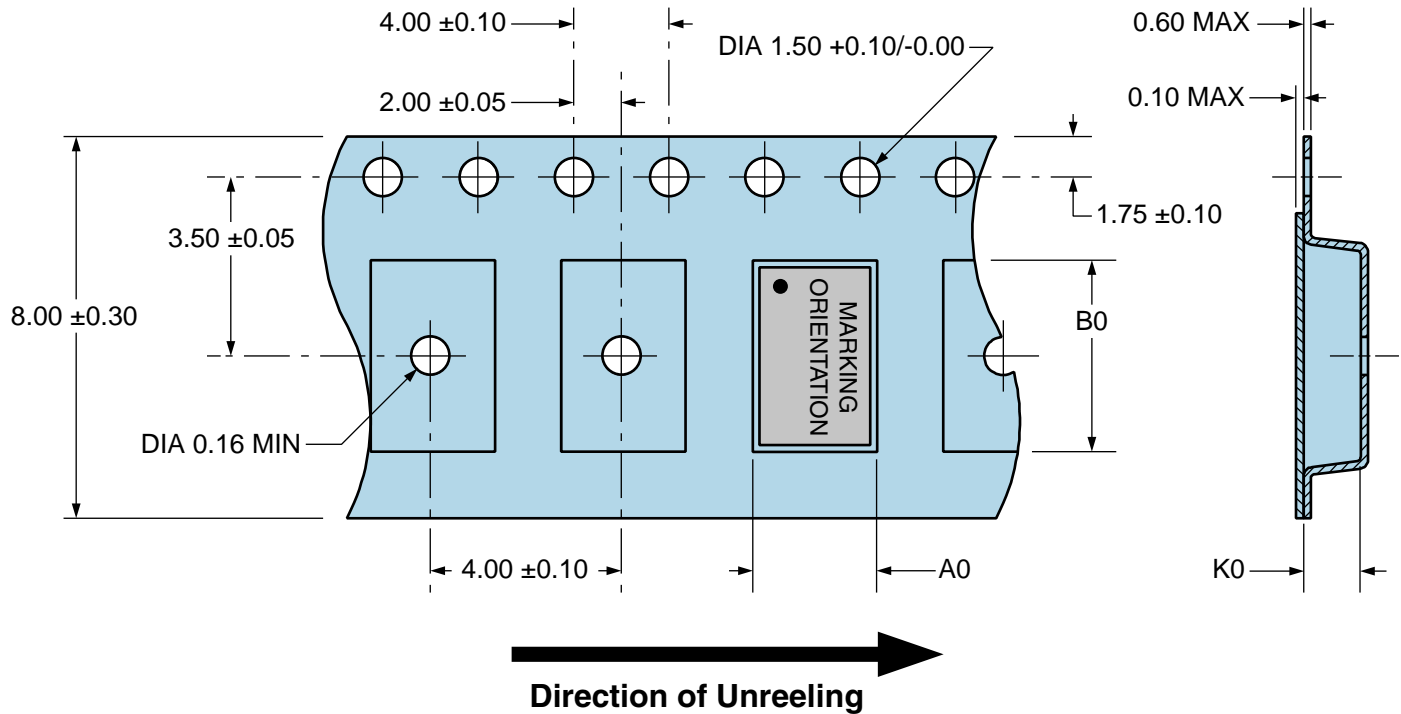
EA1012HA07-52.000M TR

Tape & Reel Dimensions

Quantity Maximum Per Reel: 5,000 units

All Dimensions in Millimeters

Compliant to EIA-481



EA1012HA07-52.000M TR [Click part number to visit Part Number Details page](#)

Recommended Solder Reflow Methods



High Temperature Infrared/Convection

| | |
|--|---|
| $T_s \text{ MAX}$ to T_L (Ramp-up Rate) | 3°C/Second Maximum |
| Preheat | |
| - Temperature Minimum ($T_s \text{ MIN}$) | 150°C |
| - Temperature Typical ($T_s \text{ TYP}$) | 175°C |
| - Temperature Maximum ($T_s \text{ MAX}$) | 200°C |
| - Time ($t_s \text{ MIN}$) | 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 ($T_P \text{ Target}$) | 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 body of device. |

EA1012HA07-52.000M TR [Click part number to visit Part Number Details page](#)

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 245°C

| | |
|--|--|
| 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 2 Times / 230°C Maximum 1 Time |
| Time within 5°C of actual peak (t_p) | 10 Seconds Maximum 2 Times / 80 Seconds Maximum 1 Time |
| 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 body of device. |

Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)

High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to body of device.)

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