

# EB3250AYA08-10.000M TR [Click part number to visit Part Number Details page](#)

## REGULATORY COMPLIANCE (Data Sheet downloaded on Jun 22, 2020)



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## ITEM DESCRIPTION

Automotive Grade Quartz Crystal Resonator 3.2mm x 5.0mm x 1.1mm 2 Pad Ceramic Surface Mount (SMD)  
10.000MHz  $\pm 30$ ppm at 25°C,  $\pm 50$ ppm over -40°C to +125°C 08pF Parallel Resonant



## ELECTRICAL SPECIFICATIONS

|                               |                                                         |
|-------------------------------|---------------------------------------------------------|
| Nominal Frequency             | 10.000MHz                                               |
| Frequency Tolerance/Stability | $\pm 30$ ppm at 25°C, $\pm 50$ ppm over -40°C to +125°C |
| Aging at 25°C                 | $\pm 3$ ppm/Year Maximum                                |
| Load Capacitance              | 08pF Parallel Resonant                                  |
| Shunt Capacitance             | 5pF Maximum                                             |
| Equivalent Series Resistance  | 100 Ohms Maximum                                        |
| Mode of Operation             | AT-Cut Fundamental                                      |
| Drive Level                   | 300 $\mu$ Watts Maximum                                 |
| Spurious Response             | -3dB Minimum (Measured from Fo to Fo+5000ppm)           |
| Storage Temperature Range     | -50°C to +150°C                                         |
| Insulation Resistance         | 500 Megaohms Minimum (Measured at 100Vdc)               |

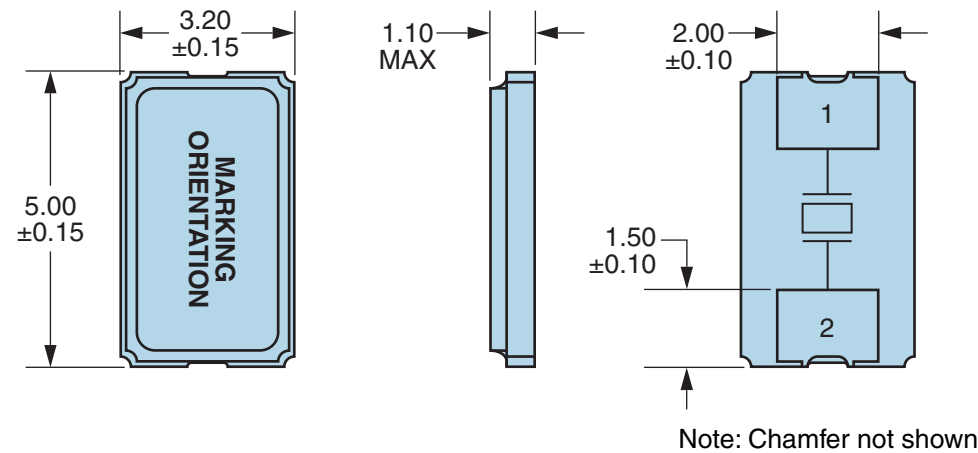
## ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

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

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MECHANICAL DIMENSIONS (all dimensions in millimeters)



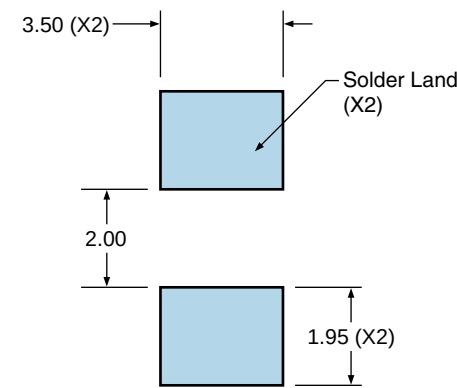
| PIN | CONNECTION |
|-----|------------|
| 1   | Crystal    |
| 2   | Crystal    |

| LINE | MARKING                                         |
|------|-------------------------------------------------|
| 1    |                                                 |
| 2    | XXX<br>XXX=Ecliptek<br>Manufacturing Identifier |

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

Suggested Solder Pad Layout

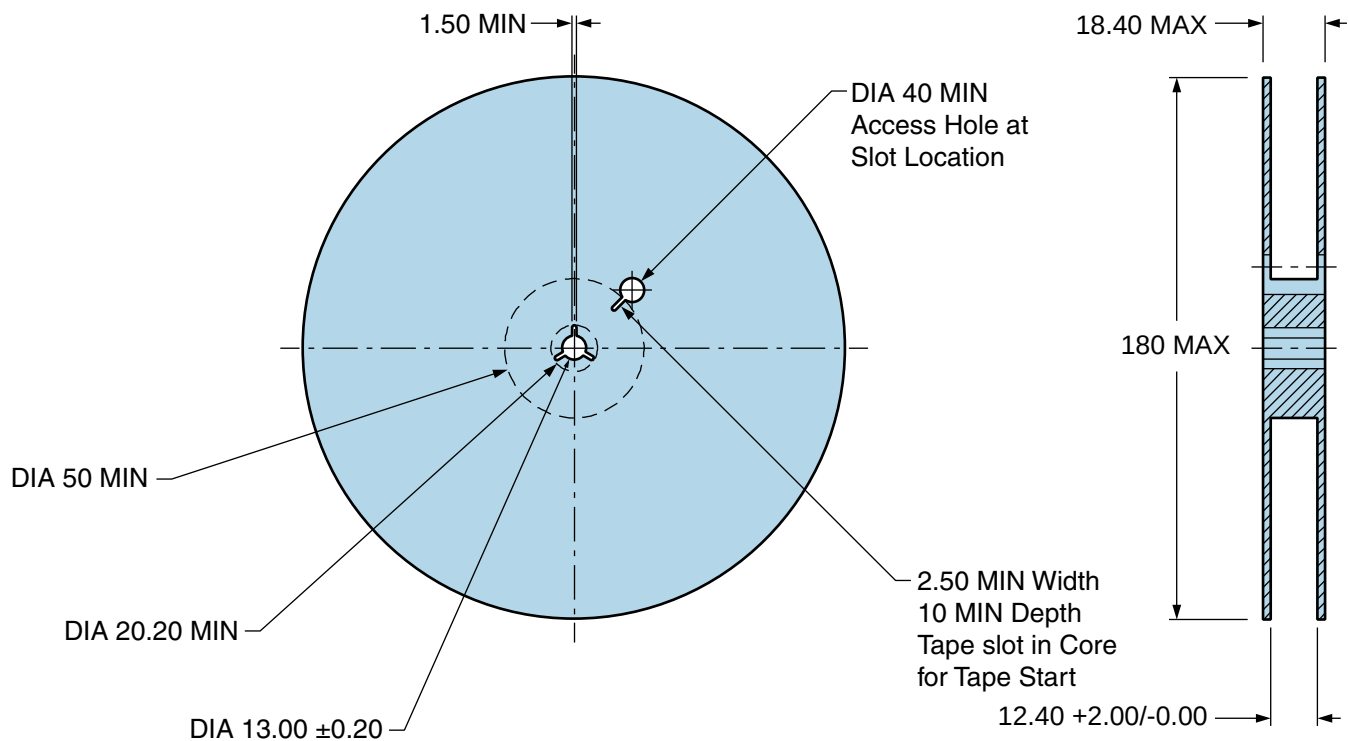
All Dimensions in Millimeters



All Tolerances are ±0.1

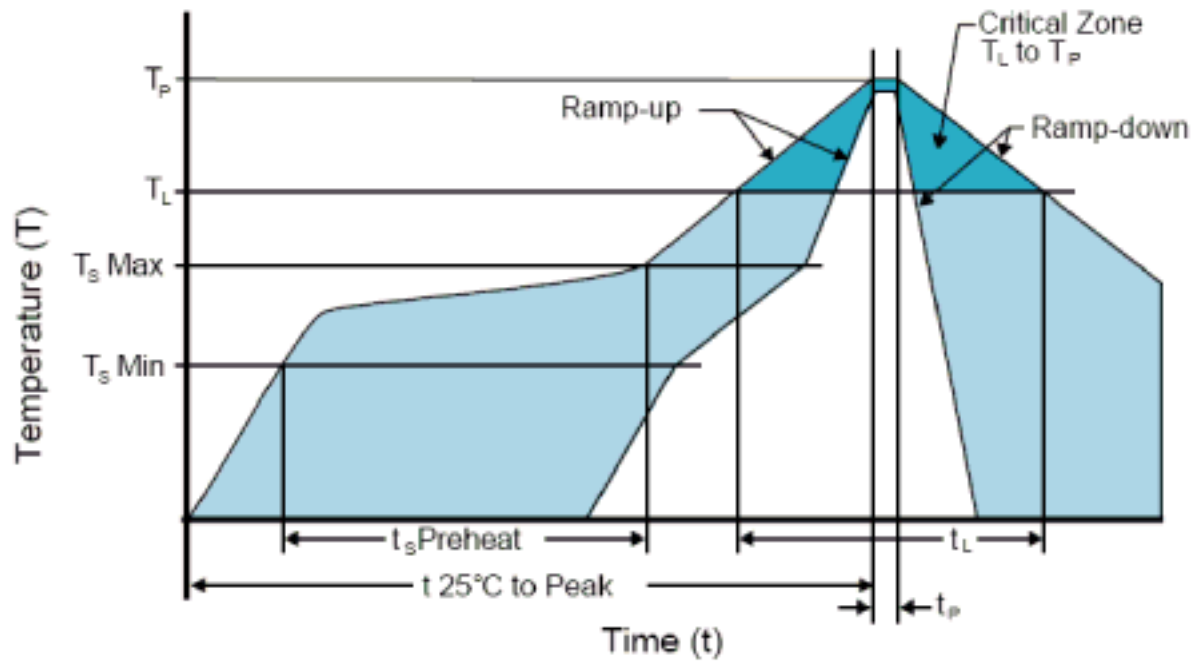
## Tape & Reel Dimensions

Compliant to EIA-481



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Recommended Solder Reflow Methods

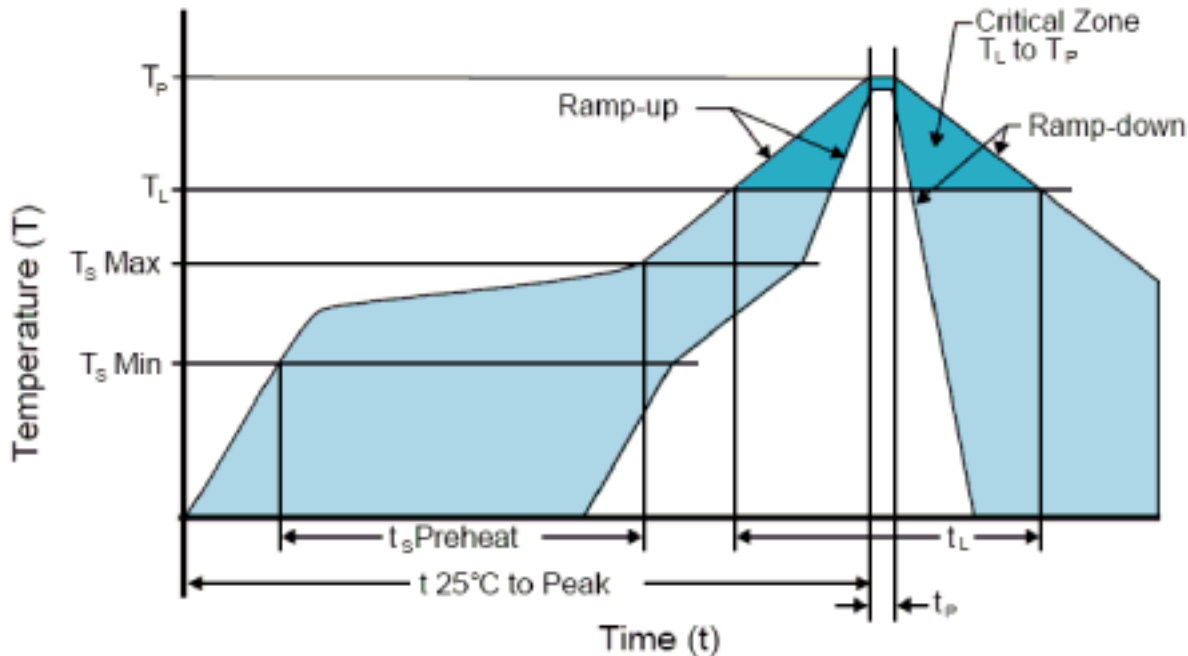


High Temperature Infrared/Convection

|                                            |  |                                                   |
|--------------------------------------------|--|---------------------------------------------------|
| <b>Ts MAX to TL (Ramp-up Rate)</b>         |  | 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 body of device. |

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## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 245°C

|                             |                    |
|-----------------------------|--------------------|
| 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 2 Times / 230°C Maximum 1 Time |
|-------------------------------------|----------------------------------------------|

|                                     |                                                        |
|-------------------------------------|--------------------------------------------------------|
| Time within 5°C of actual peak (tP) | 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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