

# EA2532NA18-27.000M TR [Click part number to visit Part Number Details page](#)

## REGULATORY COMPLIANCE (Data Sheet downloaded on Jun 21, 2020)



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## ITEM DESCRIPTION

Quartz Crystal Resonator 2.5mm x 3.2mm x 0.8mm 4 Pad Ceramic Surface Mount (SMD) 27.000MHz  $\pm 15$ ppm at 25°C,  $\pm 20$ ppm over 0°C to +70°C 18pF Parallel Resonant

## ELECTRICAL SPECIFICATIONS

|                               |  |
|-------------------------------|--|
| Nominal Frequency             | 27.000MHz  |
| Frequency Tolerance/Stability | $\pm 15$ ppm at 25°C, $\pm 20$ ppm over 0°C to +70°C |
| Aging at 25°C                 | $\pm 3$ ppm/Year Maximum                             |
| Load Capacitance              | 18pF Parallel Resonant                               |
| Shunt Capacitance (C0)        | 5pF Maximum  |
| Equivalent Series Resistance  | 60 Ohms Maximum                                      |
| Mode of Operation             | AT-Cut Fundamental                                   |
| Drive Level                   | 100 $\mu$ Watts Maximum                              |
| Crystal Cut                   | AT-Cut   |
| Spurious Response             | -3dB Minimum (Measured from Fo to Fo +5000ppm)       |
| Storage Temperature Range     | -40°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   | Cover/Ground |
| 3   | Crystal      |
| 4   | Cover/Ground |

| LINE | MARKING   |
|------|---|
| 1    | <b>E27.0</b><br>E=Ecliptek Designator                   |
| 2    | <b>XXXXX</b><br>XXXXX=Ecliptek Manufacturing Identifier |

**Note:** Chamfer not shown.

**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

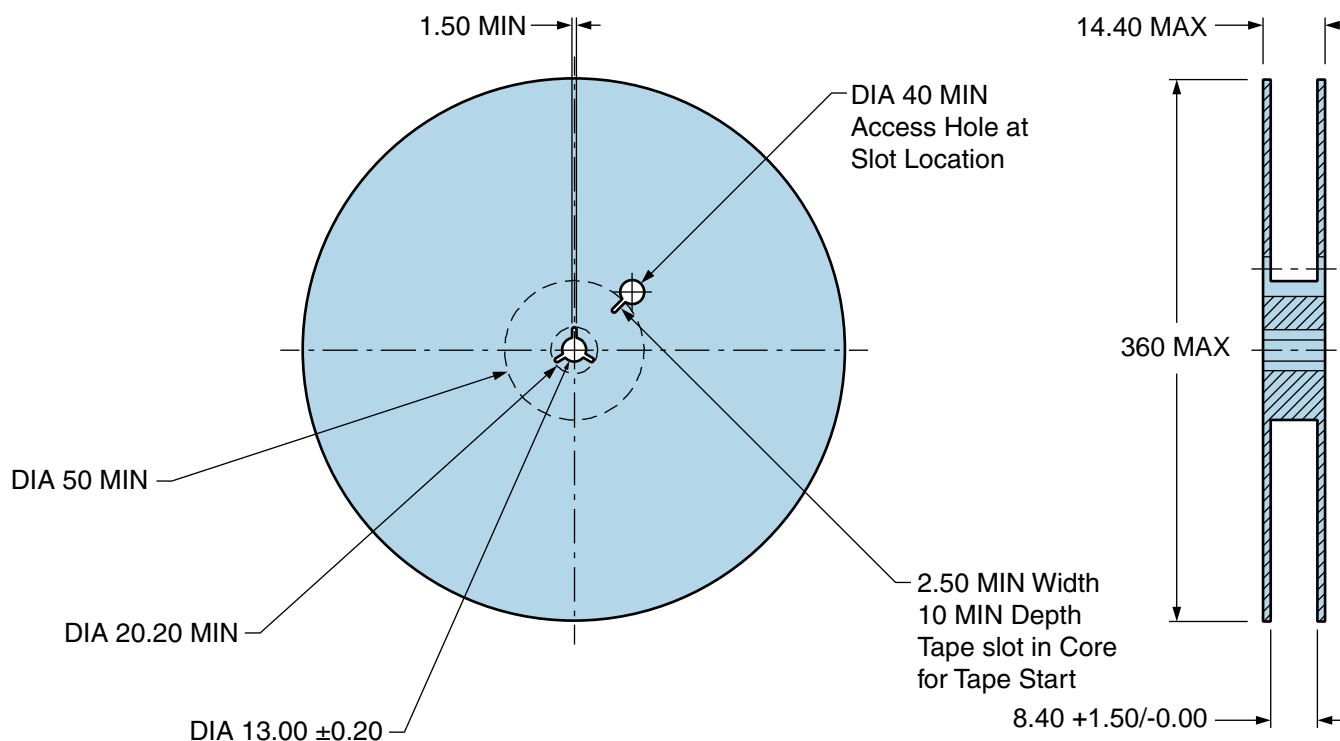
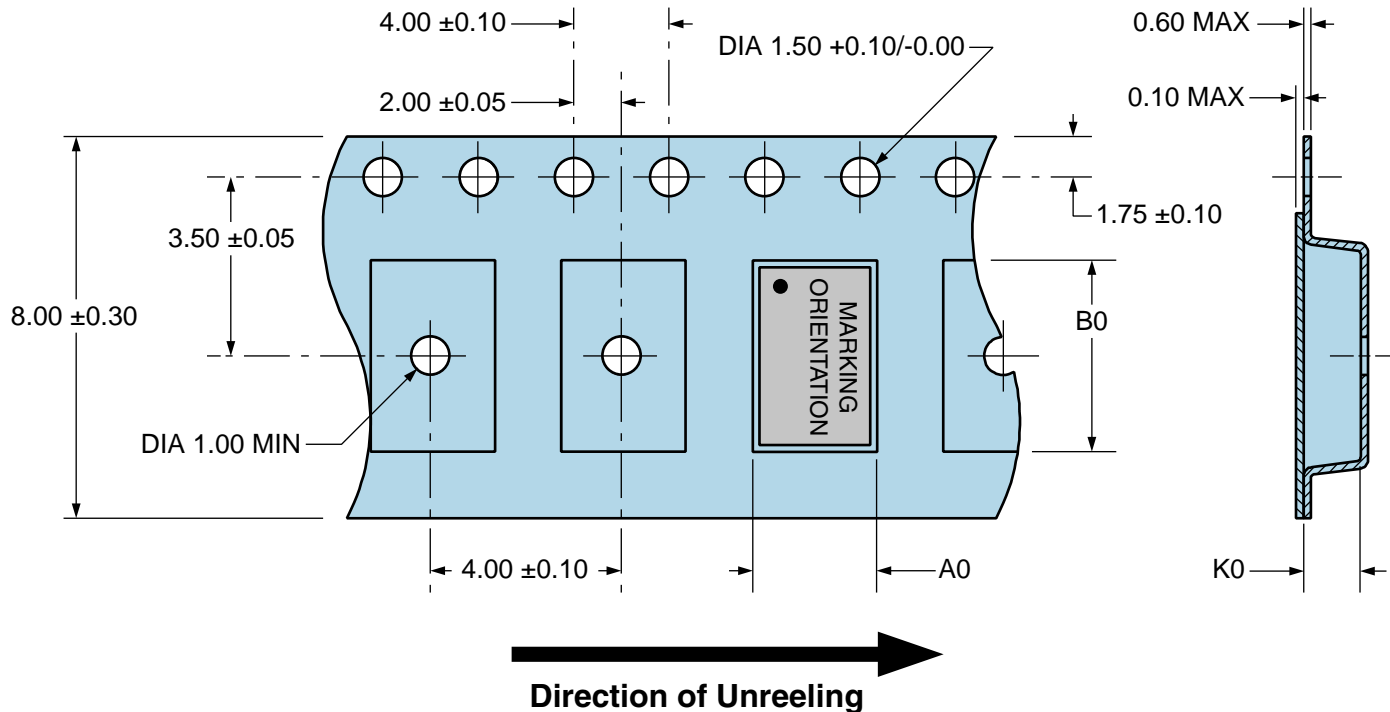
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## Tape & Reel Dimensions

Quantity Per Reel: 1,000 units

All Dimensions in Millimeters

Compliant to EIA-481



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## Recommended Solder Reflow Methods



### High Temperature Infrared/Convection

|  |   |
|--|---|
| $T_s$ MAX to $T_L$ (Ramp-up Rate)                          | 3°C/Second Maximum                                |
| <b>Preheat</b>   |   |
| - 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                                  |
| <b>Ramp-up Rate (<math>T_L</math> to <math>T_P</math>)</b> | 3°C/Second Maximum                                |
| <b>Time Maintained Above:</b>                              |   |
| - Temperature ( $T_L$ )                                    | 217°C   |
| - Time ( $t_L$ )   | 60 - 150 Seconds                                  |
| <b>Peak Temperature (<math>T_P</math>)</b>                 | 260°C Maximum for 10 Seconds Maximum              |
| <b>Target Peak Temperature (<math>T_P</math> Target)</b>   | 250°C +0/-5°C                                     |
| <b>Time within 5°C of actual peak (<math>t_p</math>)</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                                     |
| <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 2 Times / 230°C Maximum 1 Time           |
| <b>Time within 5°C of actual peak (tp)</b> | 10 Seconds Maximum 2 Times / 80 Seconds Maximum 1 Time |
| <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 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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- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

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