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EA2025 Series Crystal

Quartz Crystal Resonator 2.0mm x 2.5mm x 0.6mm 4 Pad Ceramic Surface Mount (SMD)

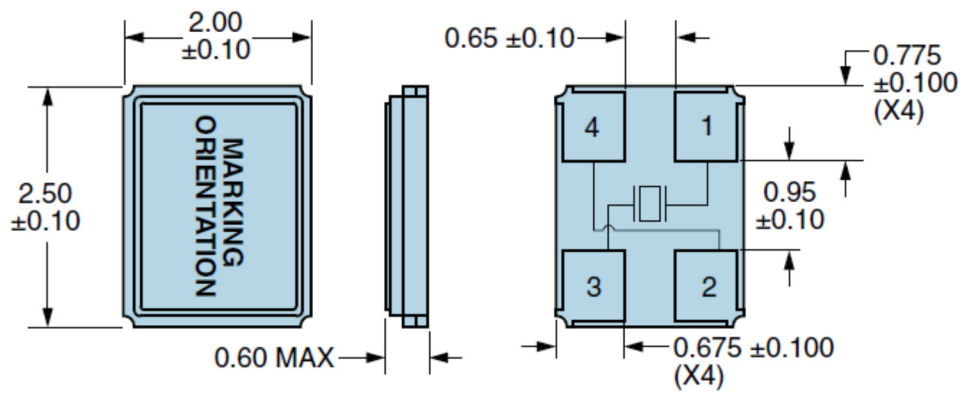


Revision B 09/19/2013

Electrical Specifications

Nominal Frequency	12.000MHz to 50.000MHz <i>Some frequencies within this range may not be available.</i>
Frequency Tolerance (at 25°C)	±50ppm Maximum ±30ppm Maximum ±15ppm Maximum ±10ppm Maximum
Frequency Stability (over Operating Temperature Range)	±100ppm Maximum ±50ppm Maximum ±30ppm Maximum ±20ppm Maximum ±15ppm Maximum ±10ppm Maximum
Operating Temperature Range	0°C to +70°C -20°C to +70°C -40°C to +85°C
Load Capacitance	8pF to 32pF Parallel Resonant Series Resonant
Equivalent Series Resistance	120 Ohms Maximum over Nominal Frequency of 12MHz to 15.999999MHz 100 Ohms Maximum over Nominal Frequency of 16MHz to 19.999999MHz 80 Ohms Maximum over Nominal Frequency of 20MHz to 29.999999MHz 60 Ohms Maximum over Nominal Frequency of 30MHz to 39.999999MHz 50 Ohms Maximum over Nominal Frequency of 40MHz to 50MHz
Shunt Capacitance	5pF Maximum
Mode of Operation	AT-Cut Fundamental
Crystal Cut	AT-Cut
Storage Temperature Range	-40°C to +85°C
Drive Level	100µWatts Maximum
Spurious Response	Measured from Fo to Fo +5000ppm -3dB Minimum
Aging (at 25°C)	±3ppm/year Maximum
Insulation Resistance	Measured at 100V _{DC} 500 Megaohms Minimum

Mechanical Dimensions



Note: Chamfer not shown.

All Dimensions in Millimeters

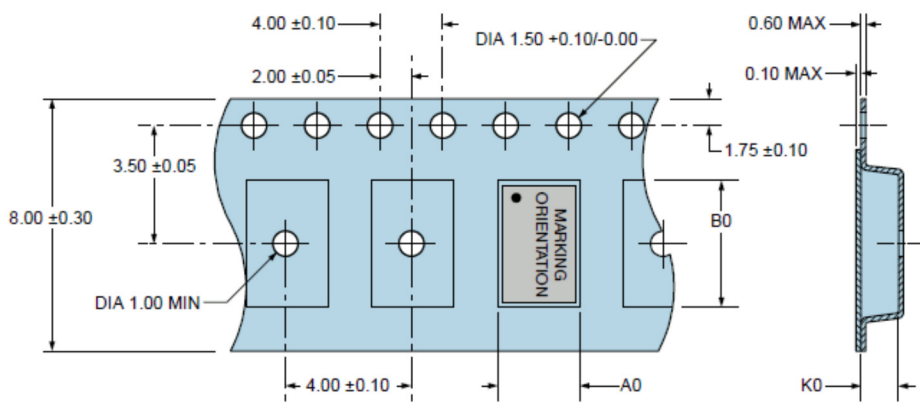
Marking Specifications

- Line 1: **XXXX**
- XXXX = Nominal Frequency in MHz (3 Digits + Decimal)
- Line 2: **XXX**
- XXX = Ecliptek Manufacturing Identifier

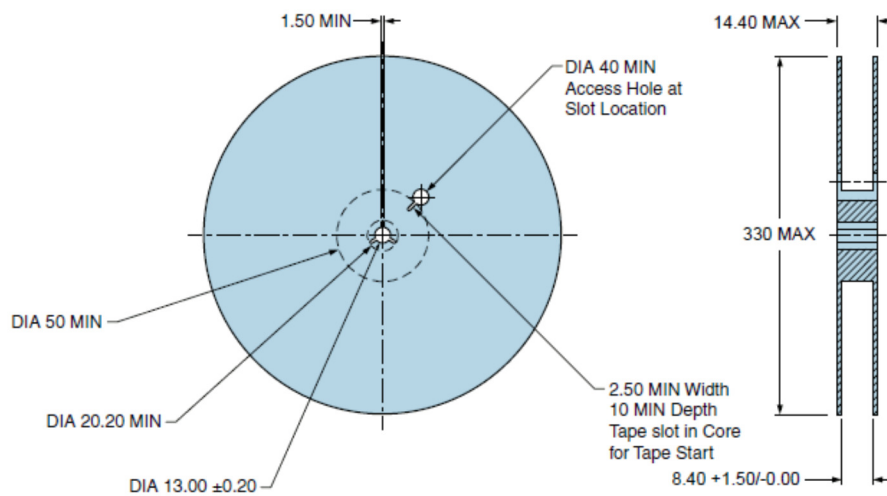
Environmental and Mechanical Specifications

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, MSL1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Resistance to Solvent:	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

Tape & Reel Dimensions

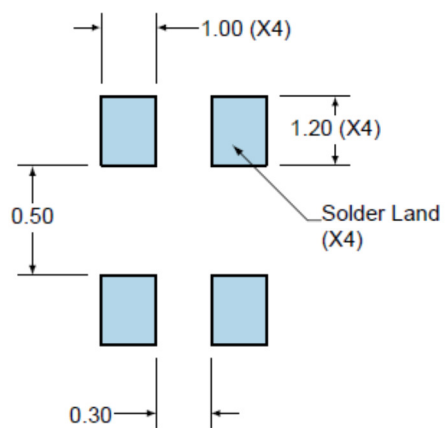


Direction of Unreeling



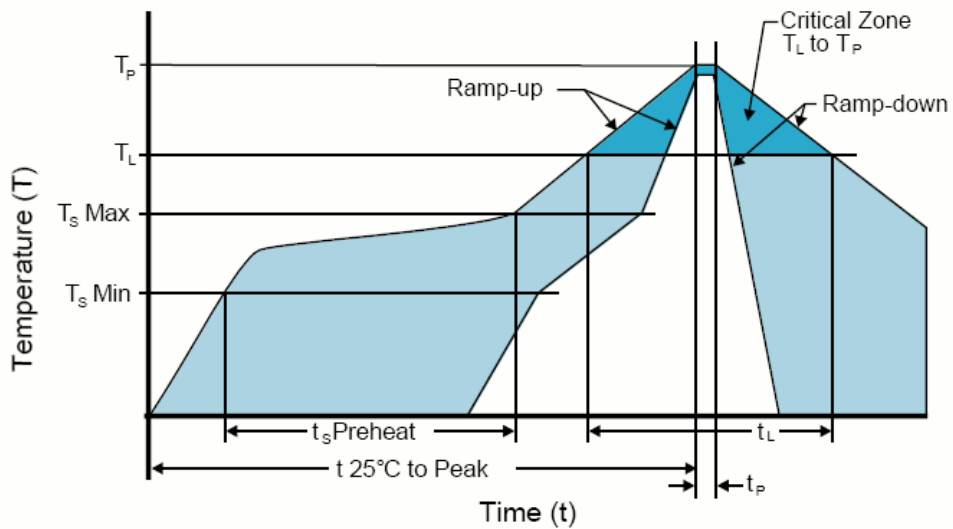
1000 pieces per reel
Compliant to EIA-481
All Dimensions in Millimeters

Recommended Solder Pad Dimensions



Tolerances = ± 0.1
All Dimensions in Millimeters

Solder Reflow Profile



High Temperature Infrared/Convection

Note: Temperatures shown are applied to body of device.

$T_S \text{ MAX}$ 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) 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

Low Temperature Infrared/Convection

Note: Temperatures shown are applied to body of device.

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)	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

High Temperature Manual Soldering

Note: Temperatures listed are applied to body of device.
260°C Maximum for 5 seconds Maximum, 2 times Maximum.

Low Temperature Manual Soldering

Note: Temperatures listed are applied to body of device.
185°C Maximum for 10 seconds Maximum, 2 times Maximum.

Part Number Constructor

Build a Part Number

Select the parameters that meet your requirements and then click the Next button below

Frequency (MHz)

12.000 to 50.000

Some frequencies within this range may not be available

Frequency Tolerance/Stability

±50ppm at 25°C, ±100ppm over 0°C to +70°C

Load Capacitance (pF)

18 (8 to 32 or leave blank for Series Resonant)

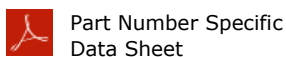
Packaging Options

Tape & Reel



On the next page

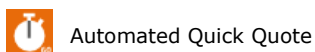
Part Number specific documents, resources, and tools



Part Number Specific Data Sheet



Compliance Docs
(REACH, RoHS, CMRT)



Automated Quick Quote



IPC-1752



Check Stock

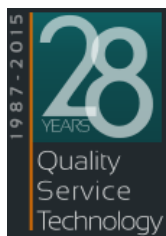
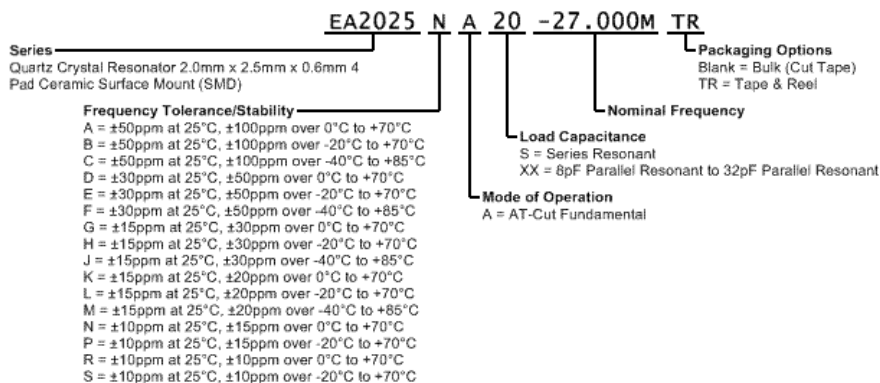


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