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EA5070 Series Crystal

Quartz Crystal Resonator 5.0mm x 7.0mm x 1.3mm 4 Pad Ceramic Surface Mount (SMD)

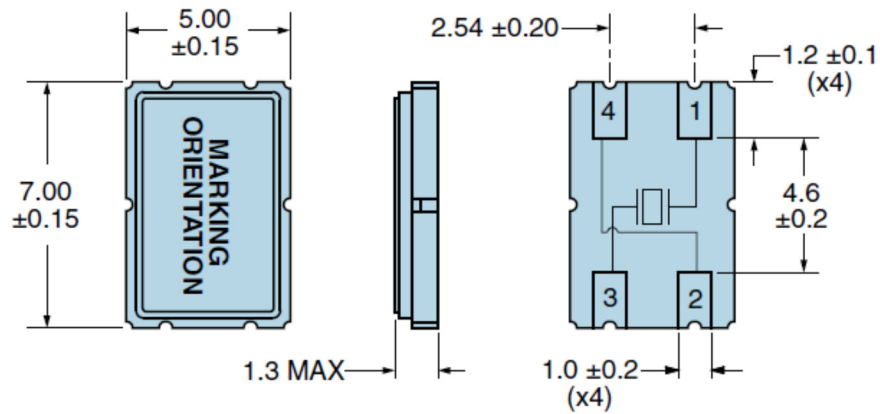


Electrical Specifications

Revision B 12/01/2015

Nominal Frequency	6.000MHz to 66.000MHz <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
Operating Temperature Range	0°C to +70°C -20°C to +70°C -40°C to +85°C
Load Capacitance	12pF to 50pF Parallel Resonant Series Resonant
Equivalent Series Resistance	Click to Open ESR Table
Shunt Capacitance	7pF Maximum
Mode of Operation	Fundamental or Third Overtone
Crystal Cut	AT-Cut
Storage Temperature Range	-40°C to +85°C
Drive Level	50µWatts 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 and index
mark not shown.

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

All Dimensions in Millimeters

Marking Specifications

Line 1:

XXXXXX

- E = Ecliptek Designator
- XXXXX = Nominal Frequency in MHz (4 Digits + Decimal)

Line 2:

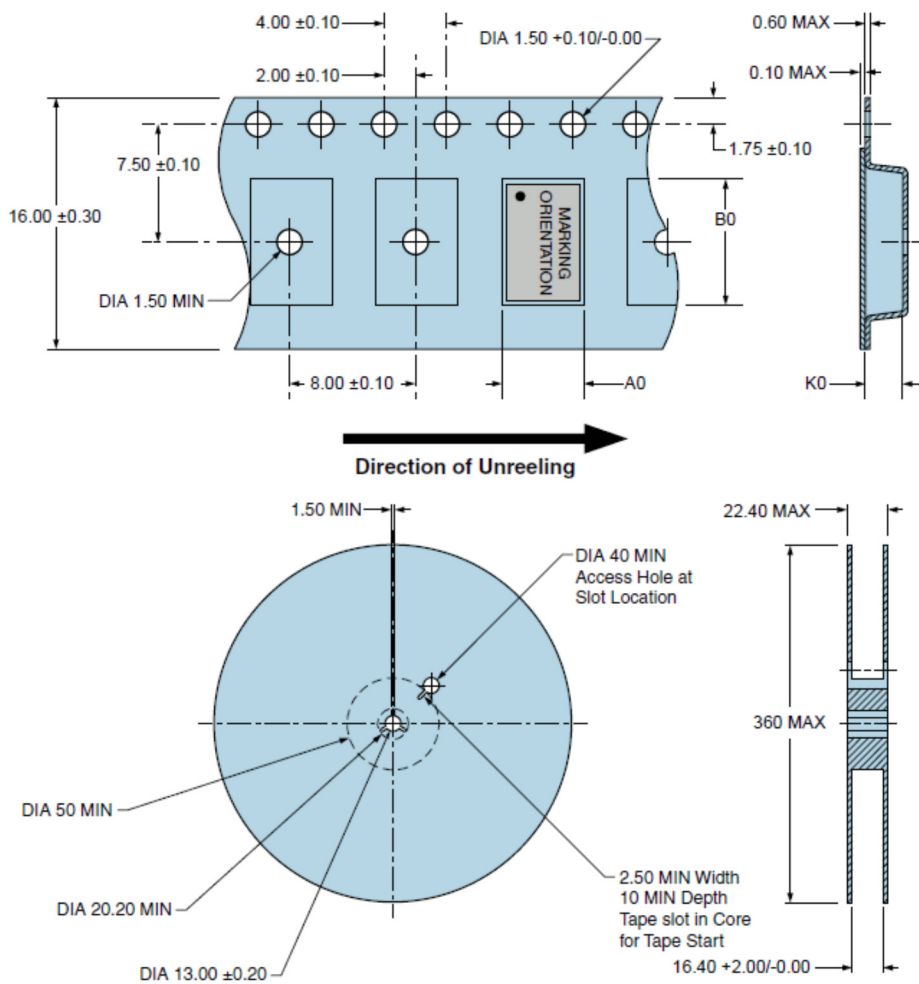
XXXXX

- XXXXX = 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, 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

Tape & Reel Dimensions



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

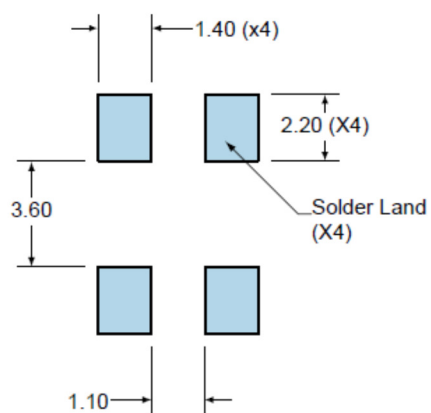
Fundamental Mode AT Cut

<i>Nominal Frequency Range in MHz</i>	<i>Maximum ESR in Ohms</i>
6.000000 to 9.999999	90
10.000000 to 10.999999	60
11.000000 to 13.999999	50
14.000000 to 15.999999	40
16.000000 to 40.000000	30

Third Overtone Mode AT Cut

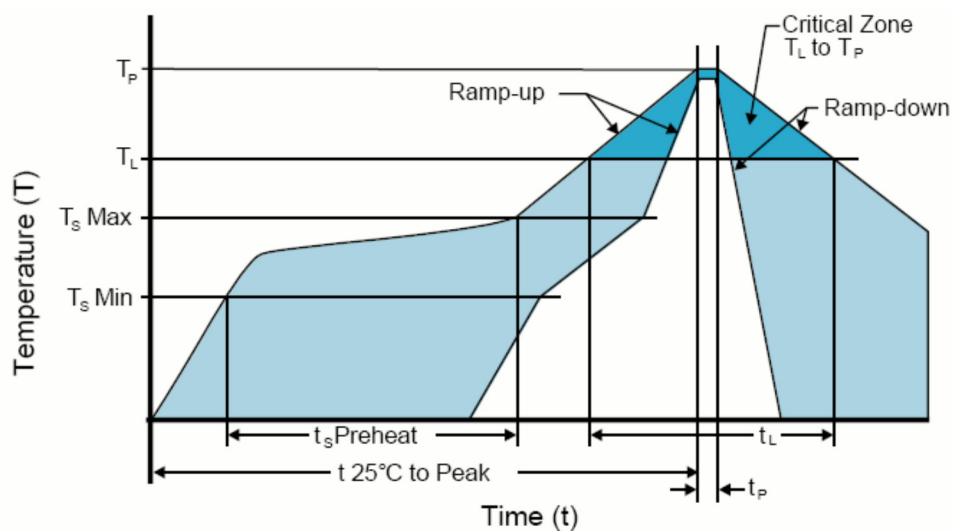
<i>Nominal Frequency Range in MHz</i>	<i>Maximum ESR in Ohms</i>
35.328000 to 39.999999	100
40.000000 to 66.000000	80

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.

TS MAX to TL (Ramp-up Rate) 3°C/second Maximum

Preheat

- Temperature Minimum (TS MIN) 150°C
- Temperature Typical (TS TYP) 175°C
- Temperature Maximum (TS MAX) 200°C
- Time (ts) 60 - 180 Seconds

Ramp-up Rate (TL to Tp) 3°C/second Maximum

Time Maintained Above:

- Temperature (TL) 217°C
- Time (tL) 60 - 150 Seconds

Peak Temperature (Tp) 260°C Maximum for 10 Seconds Maximum

Target Peak Temperature (Tp Target) 250°C +0/-5°C

Time within 5°C of actual peak (tp) 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)

6.000 to 66.000

Some frequencies within this range may not be available

Frequency Tolerance/Stability

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

Mode of Operation

AT-Cut Fundamental

Load Capacitance (pF)

18 (12 to 50 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



My Parts List ?

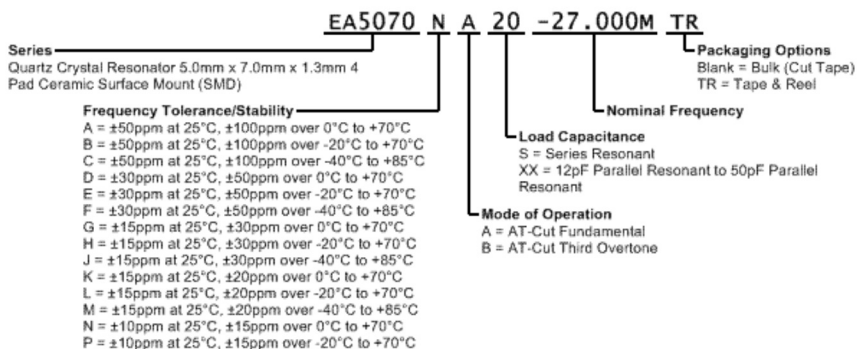


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Part Numbering Guide



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