

ECCM7MA16-16.000M TR



ITEM DESCRIPTION

Quartz Crystal Resonator 2.5mm x 3.2mm x 0.8mm 4 Pad Ceramic Surface Mount (SMD) 16.000MHz ± 15 ppm at 25°C, ± 20 ppm over -30°C to +85°C 16pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

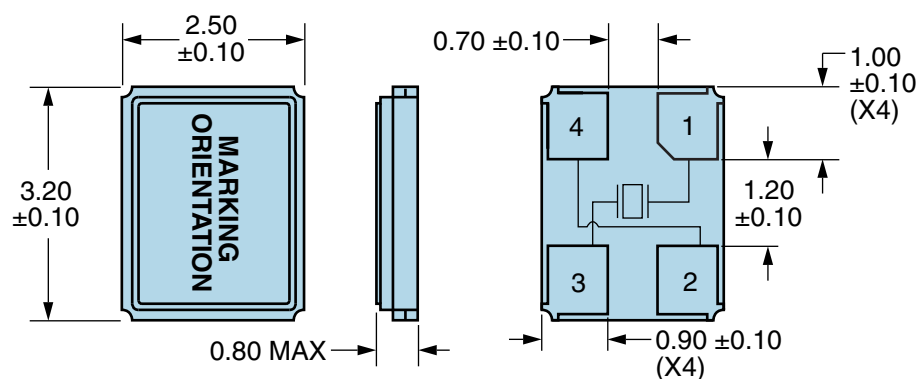
Nominal Frequency	16.000MHz
Frequency Tolerance/Stability	± 15 ppm at 25°C, ± 20 ppm over -30°C to +85°C
Aging at 25°C	± 3 ppm/Year Maximum
Load Capacitance	16pF Parallel Resonant
Shunt Capacitance	5pF Maximum
Equivalent Series Resistance	100 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	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

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MECHANICAL DIMENSIONS (all dimensions in millimeters)

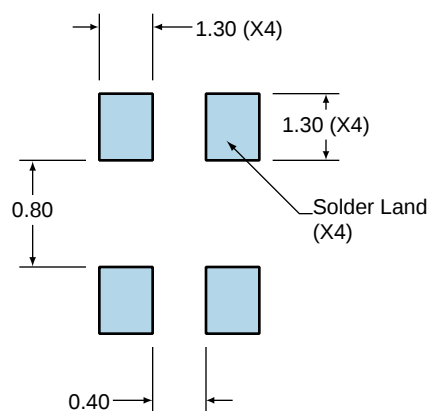


PIN	CONNECTION
1	Crystal
2	Cover/Ground
3	Crystal
4	Cover/Ground

LINE	MARKING
1	E16.0 <i>E=Ecliptek Designator</i>
2	XXXXX <i>XXXXX=Ecliptek Manufacturing Identifier</i>

Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ± 0.1

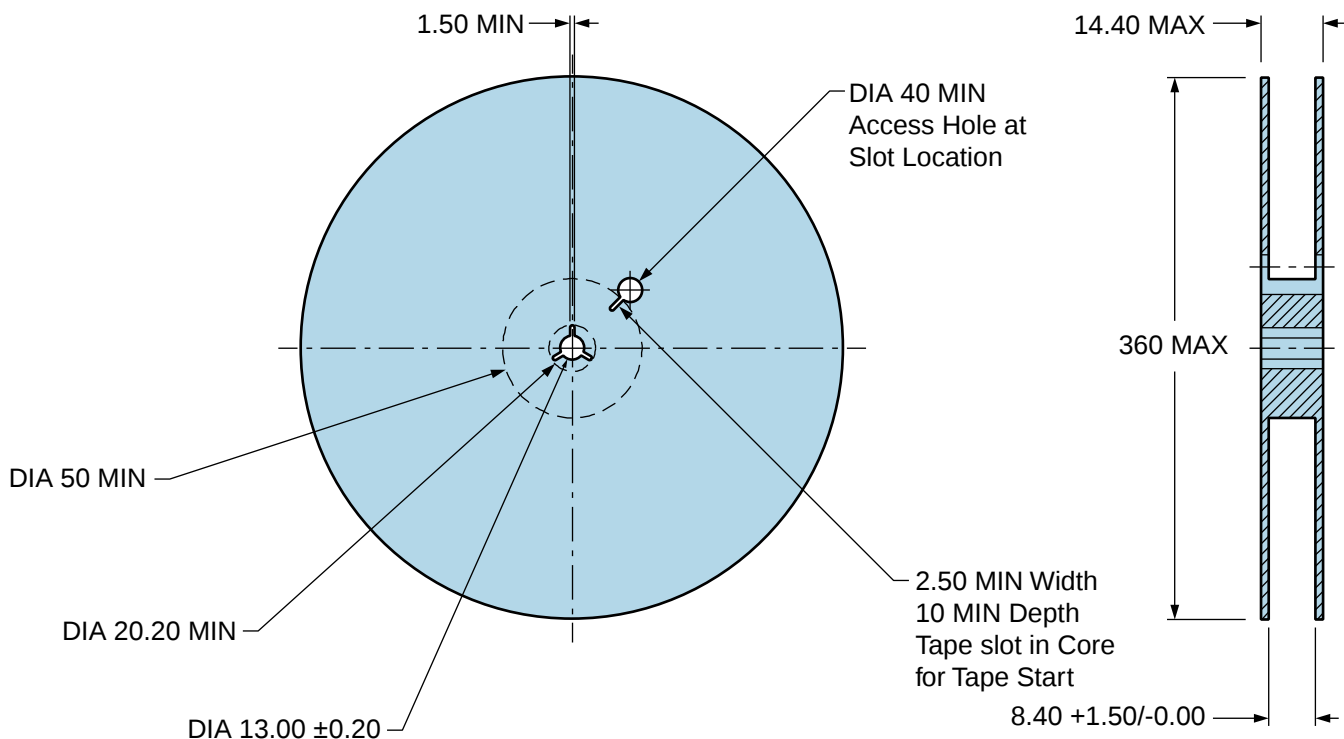
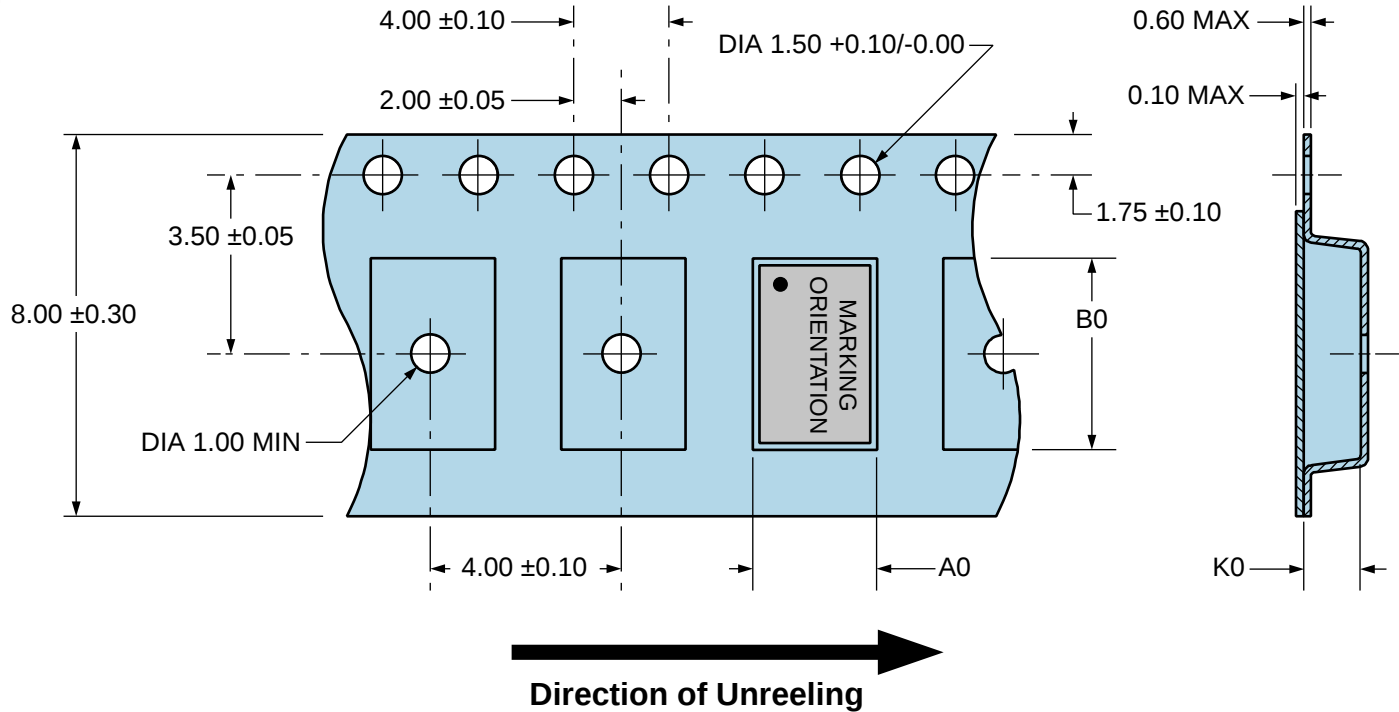
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Tape & Reel Dimensions

Quantity Per Reel: 1,000 units

All Dimensions in Millimeters

Compliant to EIA-481



Recommended Solder Reflow Methods



High Temperature Infrared/Convection

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 MIN) 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

Additional Notes Temperatures shown are applied to body of device.

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Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 245°C Time (t)

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.)