

ECCM7GAS-16.384M

[Click part number to visit Part Number Details page](#)

REGULATORY COMPLIANCE (Data Sheet downloaded on May 18, 2019)


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Regulatory Compliance standards are subject to updates by governing bodies. Click the badges to download the latest compliance docs for this part number directly from Ecliptek.



ITEM DESCRIPTION

Quartz Crystal Resonator 2.5mm x 3.2mm x 0.8mm 4 Pad Ceramic Surface Mount (SMD) 16.384MHz ± 15 ppm at 25°C, ± 30 ppm over -10°C to +60°C Series Resonant

ELECTRICAL SPECIFICATIONS

Nominal Frequency	16.384MHz
Frequency Tolerance/Stability	± 15 ppm at 25°C, ± 30 ppm over -10°C to +60°C
Aging at 25°C	± 3 ppm/Year Maximum
Load Capacitance	Series 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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The drawing shows three views of a square component:

- Top View:** A square with a width of 2.50 ± 0.10 and a height of 3.20 ± 0.10 . The text "MARKING ORIENTATION" is printed vertically in the center.
- Side View:** Shows the component's thickness as 0.80 MAX .
- Bottom View:** A square with a width of 0.70 ± 0.10 . It features four mounting pads labeled 1, 2, 3, and 4. The distance from the top edge to the center of pad 1 is $1.00 \pm 0.10 (X4)$. The distance from the right edge to the center of pad 2 is 1.20 ± 0.10 . The distance between the centers of pads 1 and 2 is $0.90 \pm 0.10 (X4)$.

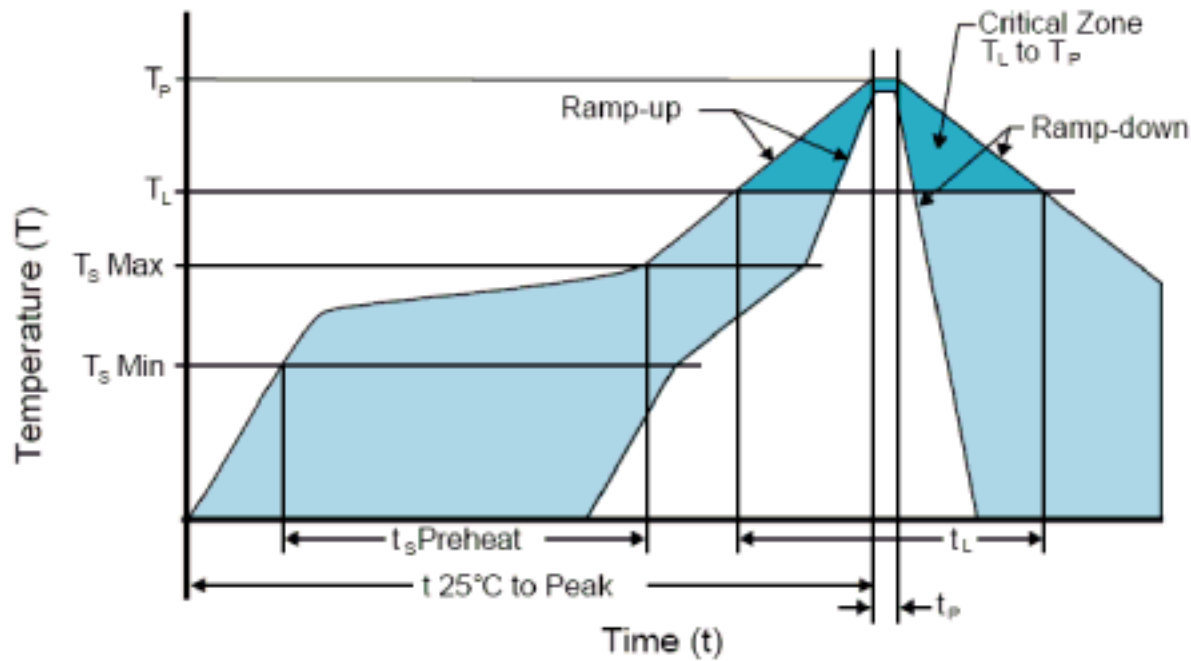
LINE	MARKING
1	E16.3 <i>E=Eclipse Designator</i>
2	XXXXX <i>XXXXX=Eclipse Manufacturing Identifier</i>

1-800-ECLIPTEK or 714.433.1200

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Recommended Solder Reflow Methods



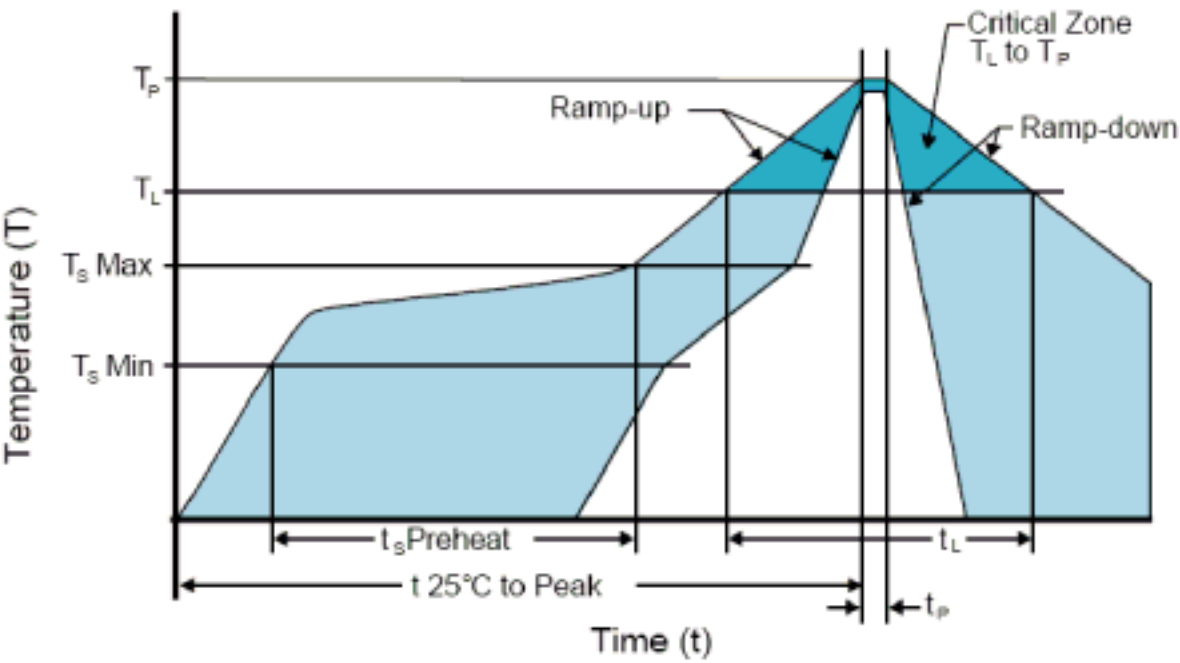
High Temperature Infrared/Convection

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

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.)