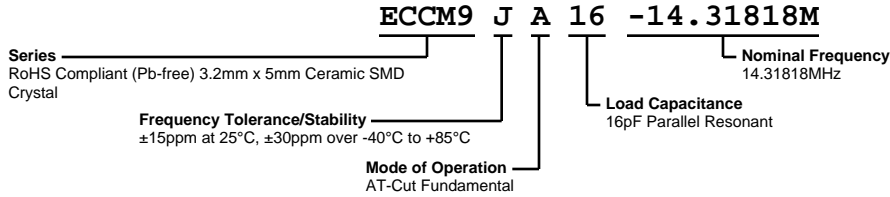


ECCM9JA16-14.31818M



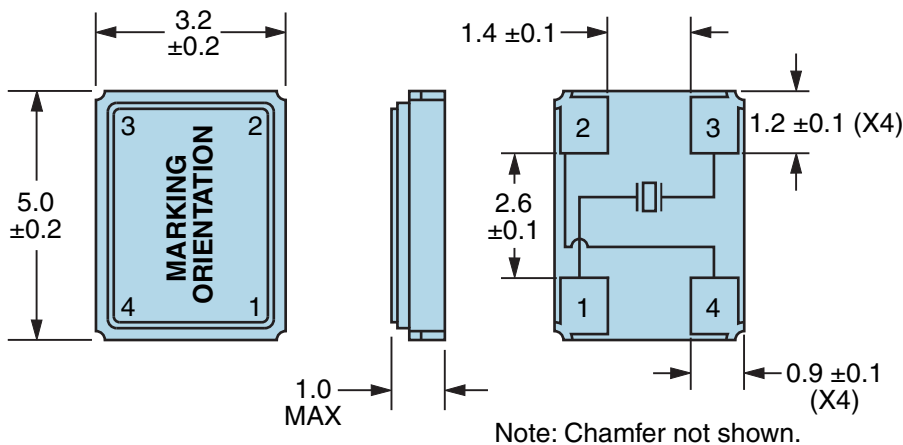
ELECTRICAL SPECIFICATIONS

Nominal Frequency	14.31818MHz
Frequency Tolerance/Stability	$\pm 15\text{ppm}$ at 25°C, $\pm 30\text{ppm}$ over -40°C to +85°C
Aging at 25°C	$\pm 3\text{ppm}/\text{Year}$ Maximum
Load Capacitance	16pF Parallel Resonant
Shunt Capacitance (C0)	7pF Maximum
Equivalent Series Resistance	70 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	100μWatts Maximum, 10μWatts Correlation
Crystal Cut	AT-Cut
Spurious Response	>3dB from Fo to Fo+5000ppm
Storage Temperature Range	-40°C to +125°C
Insulation Resistance	500 Megaohms Minimum 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

MECHANICAL DIMENSIONS (all dimensions in millimeters)



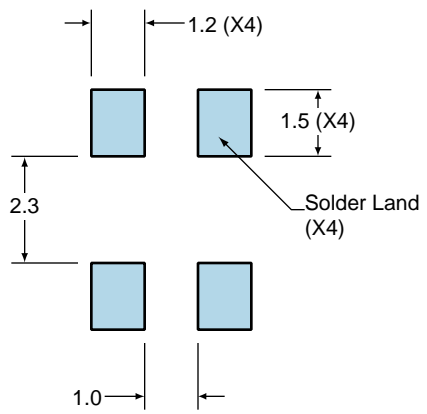
PIN	CONNECTION
1	Crystal
2	Cover/Ground
3	Crystal
4	Cover/Ground

LINE	MARKING
1	E14.31 E=Ecliptek
2	XXXXX XXXXX=Ecliptek Manufacturing Identifier

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Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ± 0.1

Recommended Solder Reflow Methods



High Temperature Infrared/Convection

$T_s \text{ MAX}$ 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 ($t_s \text{ MIN}$) 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

Recommended Solder Reflow Methods



Low Temperature Infrared/Convection 240°C

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 MIN)	60 - 120 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)	240°C Maximum
Target Peak Temperature (T_P Target)	240°C Maximum 1 Time / 230°C Maximum 2 Times
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

Low Temperature Manual Soldering

185°C Maximum for 10 seconds Maximum, 2 times Maximum.

High Temperature Manual Soldering

260°C Maximum for 5 seconds Maximum, 2 times Maximum.