

E1SKAS-14.31818M TR



ITEM DESCRIPTION

Quartz Crystal Resonator HC49/UP Short 2 Pad Surface Mount (SMD) 3.2mm Height Metal Resistance Weld Seal
14.31818MHz $\pm 15\text{ppm}$ at 25°C , $\pm 20\text{ppm}$ over 0°C to $+70^{\circ}\text{C}$ Series Resonant

ELECTRICAL SPECIFICATIONS

Nominal Frequency	14.31818MHz
Frequency Tolerance/Stability	$\pm 15\text{ppm}$ at 25°C , $\pm 20\text{ppm}$ over 0°C to $+70^{\circ}\text{C}$
Aging at 25°C	$\pm 5\text{ppm/year}$ Maximum
Load Capacitance	Series Resonant
Shunt Capacitance	7pF Maximum
Equivalent Series Resistance	70 Ohms Maximum
Mode of Operation	AT-Cut Fundamental
Drive Level	1mWatt Maximum
Storage Temperature Range	-40°C to $+125^{\circ}\text{C}$
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-202, Method 213, Condition C
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 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)



LINE	MARKING
1	E14.318M E=Ecliptek Designator

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

T_s MAX to T_l (Ramp-up Rate) 3°C/Second Maximum

Preheat

- Temperature Minimum (T_s MIN) 150°C
- Temperature Typical (T_s TYP) 175°C
- Temperature Maximum (T_s MAX) 200°C
- Time (t_s 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 Target) $250^\circ\text{C} \pm 0/-5^\circ\text{C}$

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

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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

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.