

# E1WSDA12-32.768K

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

## REGULATORY COMPLIANCE (Data Sheet downloaded on Sep 22, 2020)


[Click badges to download compliance docs](#)

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

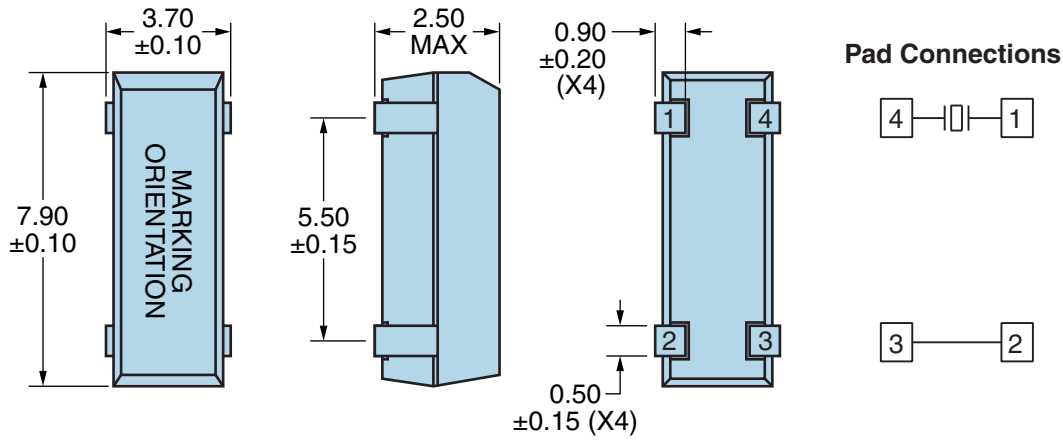
Watch Crystal Resonator 3.7mm x 7.9mm x 2.5mm 4 Pad Plastic Surface Mount (SMD) 32.768KHz  $\pm 20$ ppm at 25°C -40°C to +85°C 12.5pF Parallel Resonant

## ELECTRICAL SPECIFICATIONS

Nominal Frequency	32.768KHz
Frequency Tolerance	$\pm 20$ ppm at 25°C
Frequency Stability Temperature Coefficient	$-0.034 \pm 0.006$ (ppm/(Change in °C) <sup>2</sup> ) Maximum
Turn over Temperature	25°C $\pm 5$ °C
Aging at 25°C	$\pm 3$ ppm/year Maximum
Operating Temperature Range	-40°C to +85°C
Load Capacitance	12.5pF Parallel Resonant
Shunt Capacitance (C0)	1.35pF Typical
Motional Capacitance	3.0fF Typical
Equivalent Series Resistance	50,000 Ohms Maximum
Mode of Operation	Fundamental
Drive Level	1 $\mu$ Watt Maximum
Crystal Cut	Tuning Fork
Storage Temperature Range	-55°C to +125°C
Insulation Resistance	500 Megaohms Minimum (Measured at 100Vdc)

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### MECHANICAL DIMENSIONS (all dimensions in millimeters)

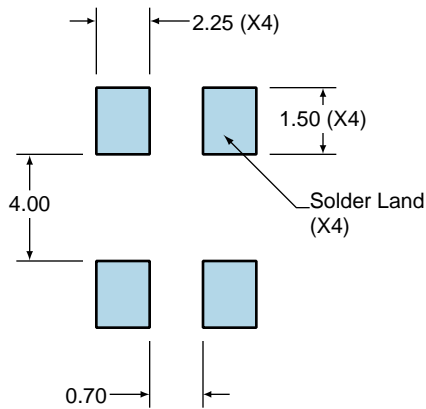


PIN	CONNECTION
1	Crystal
2	No Connect to Pin 3
3	No Connect to Pin 2
4	Crystal

LINE	MARKING
1	XXXXXX or XXXXXXX XXXXXX or XXXXXXX=Ecliptek Manufacturing Identifier
2	XXXX XXXX=Ecliptek Manufacturing Identifier (Optional)

### Suggested Solder Pad Layout

All Dimensions in Millimeters



All Tolerances are ±0.1

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## Recommended Solder Reflow Methods



### Low Temperature Infrared/Convection 230°C

Ts MAX to Tl (Ramp-up Rate)	5°C/Second Maximum
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#### 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
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#### Time Maintained Above:

- Temperature (Tl)	150°C
- Time (tL)	200 Seconds Maximum

Peak Temperature (Tp)	230°C Maximum
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Target Peak Temperature (Tp Target)	230°C Maximum 2 Times
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Time within 5°C of actual peak (tp)	10 Seconds Maximum 2 Times
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Ramp-down Rate	5°C/Second Maximum
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Time 25°C to Peak Temperature (t)	N/A
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Moisture Sensitivity Level	Level 1
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Additional Notes	Temperatures shown are applied to body of device.
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### Low Temperature Manual Soldering

185°C Maximum for 10 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to device leads only.)

### High Temperature Manual Soldering

260°C Maximum for 5 Seconds Maximum, 2 times Maximum. (Temperatures shown are applied to device leads only.)