

E8WSDC09-32.768K TR

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

REGULATORY COMPLIANCE (Data Sheet downloaded on Aug 17, 2020)


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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

Watch Crystal Resonator 1.5mm x 3.2mm x 0.9mm 2 Pad Ceramic Surface Mount (SMD) 32.768KHz ± 20 ppm at 25°C -40°C to +85°C 9pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

Nominal Frequency	32.768KHz
Frequency Tolerance	± 20 ppm at 25°C
Frequency Stability Temperature Coefficient	-0.04ppm/(Change in °C) ² Maximum
Turn over Temperature	25°C ± 5 °C
Aging at 25°C	± 3 ppm/year Maximum
Operating Temperature Range	-40°C to +85°C
Load Capacitance	9pF Parallel Resonant
Shunt Capacitance	1.0pF Typical, 1.5pF Maximum
Motional Capacitance	4.0fF Typical
Equivalent Series Resistance	70,000 Ohms Maximum
Mode of Operation	Fundamental
Drive Level	0.5 μ Watt Maximum
Crystal Cut	Tuning Fork
Storage Temperature Range	-40°C to +85°C
Insulation Resistance	500 Megaohms Minimum (Measured at 100Vdc)

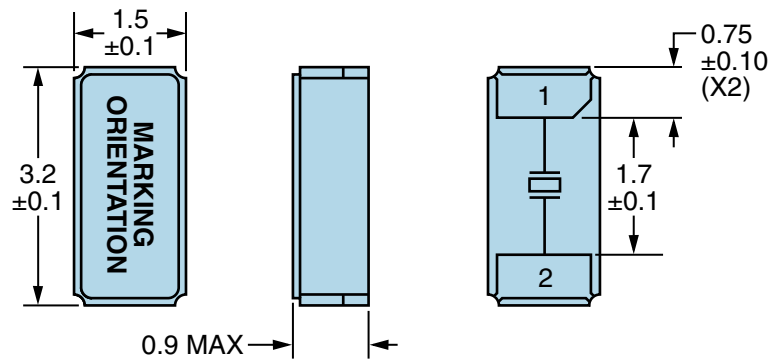
ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-202, Method 213, Condition C
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Solderability	MIL-STD-883, Method 2003
Vibration	MIL-STD-883, Method 2007, Condition A

E8WSDC09-32.768K TR

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MECHANICAL DIMENSIONS (all dimensions in millimeters)



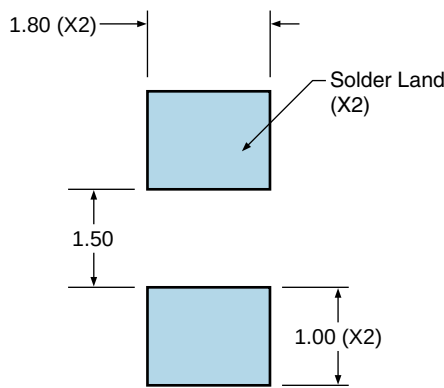
PIN	CONNECTION
1	Crystal
2	Crystal

LINE	MARKING
1	XXXXXXXXXX XXXXXXXXXX=Ecliptek Manufacturing Identifier (8 Characters Maximum)

Seam Sealed
Terminal Plating Thickness: Gold (0.3 to 1.0µm) over Nickel (3.0 to 4.0µm).

Suggested Solder Pad Layout

All Dimensions in Millimeters

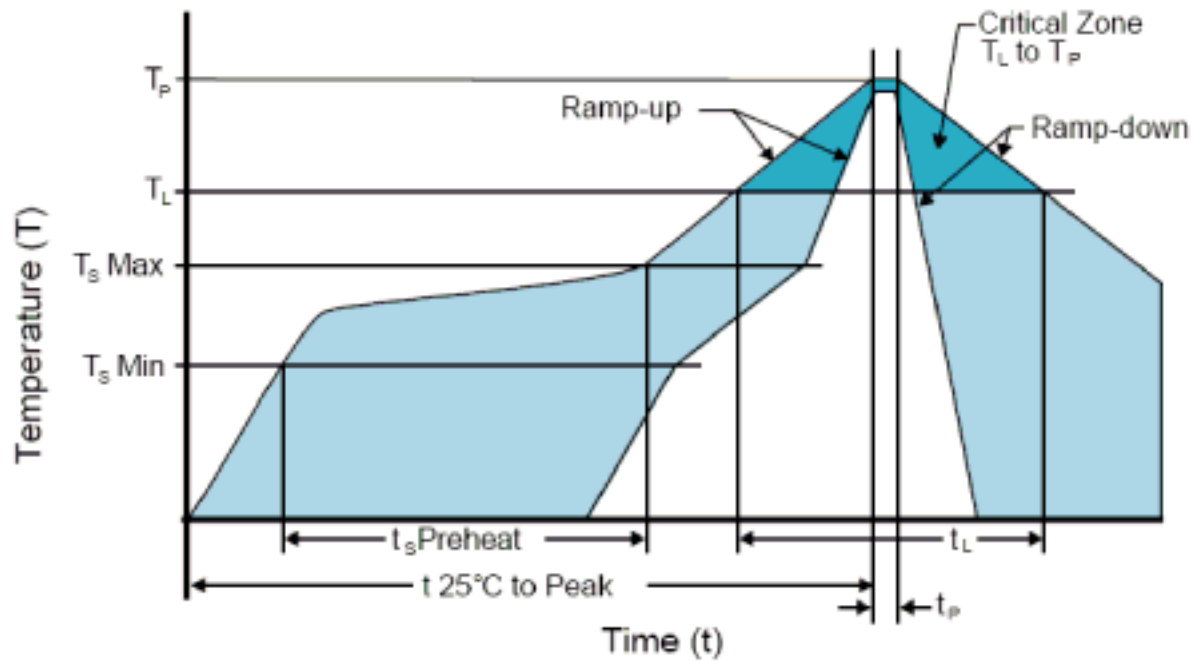


All Tolerances are ±0.1

E8WSDC09-32.768K TR

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

Recommended Solder Reflow Methods



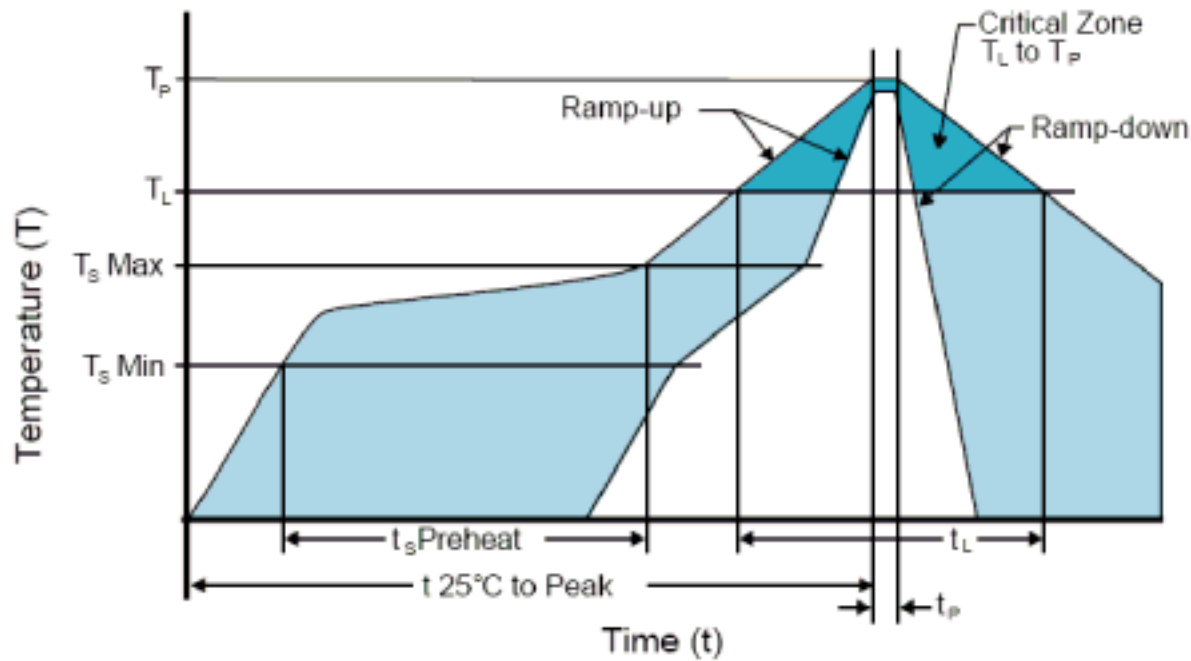
High Temperature Infrared/Convection

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.)

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ABRACON:

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