

E3WSDC12-32.768K

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

REGULATORY COMPLIANCE (Data Sheet downloaded on Feb 14, 2020)


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ITEM DESCRIPTION

Watch Crystal Resonator 1.2mm x 2.0mm x 0.6mm 2 Pad Ceramic Surface Mount (SMD) 32.768KHz ± 20 ppm at 25°C 12.5pF Parallel Resonant

ELECTRICAL SPECIFICATIONS

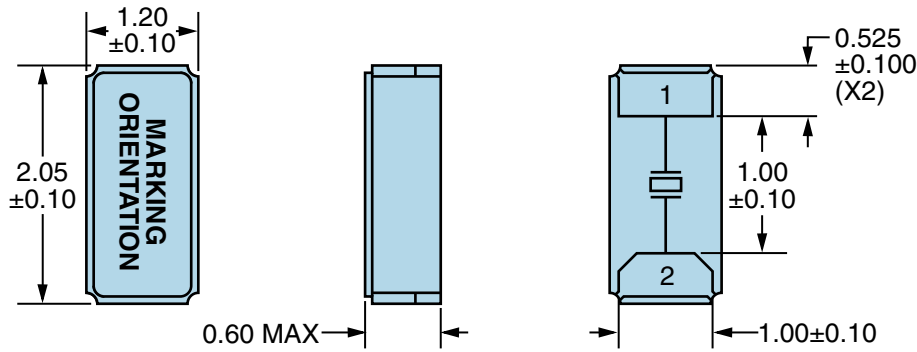
Nominal Frequency	32.768KHz
Frequency Tolerance	± 20 ppm at 25°C
Frequency Stability Temperature Coefficient	-0.04ppm/(Change in °C) ² Maximum
Turn over Temperature	25°C ± 5 °C
Aging at 25°C	± 3 ppm/year Maximum
Operating Temperature Range	-40°C to +85°C
Load Capacitance	12.5pF Parallel Resonant
Shunt Capacitance	1.3pF Typical, 1.5pF Maximum
Motional Capacitance	6.4fF Typical
Equivalent Series Resistance	80,000 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

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MECHANICAL DIMENSIONS (all dimensions in millimeters)



PIN	CONNECTION
1	Crystal
2	Crystal

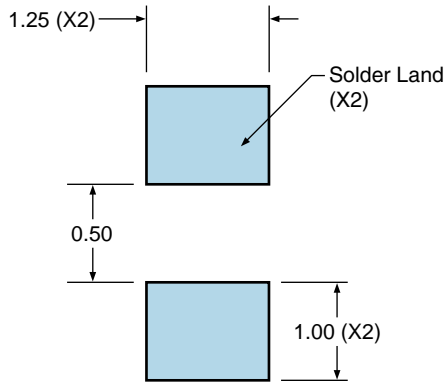
LINE	MARKING
1	XXXXXXXXXX XXXXXXXXXX=Ecliptek Manufacturing Code

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

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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 2 Times / 230°C Maximum 1 Time
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
Additional Notes	Temperatures shown are applied to body of device.

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Low Temperature Infrared/Convection 245°C

$T_S \text{ MAX}$ to T_L (Ramp-up Rate)	5°C/Second Maximum
Preheat	
- Temperature Minimum ($T_S \text{ MIN}$)	N/A
- Temperature Typical ($T_S \text{ TYP}$)	150°C
- Temperature Maximum ($T_S \text{ MAX}$)	N/A
- Time ($t_s \text{ MIN}$)	30 - 60 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)	245°C Maximum
Target Peak Temperature ($T_P \text{ Target}$)	245°C Maximum 2 Times / 230°C Maximum 1 Time
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
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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