

## 2 Pad Ceramic Base SMD Crystal, 1.6 mm x 1.0 mm

**IL3W Series**

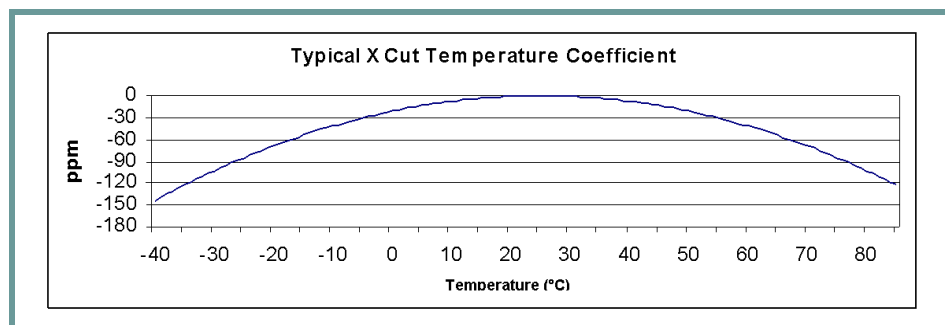
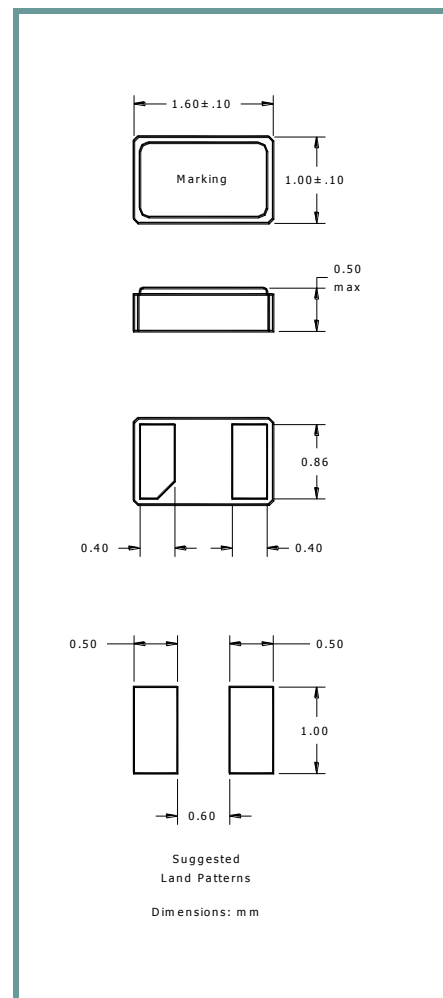
### Product Features:

2 Pad SMD Package  
RoHS Compliant  
Compatible with Leadfree Processing  
Ultra Low Profile

### Applications:

Real Time Clocks  
Metering  
Industrial Control  
Time Reference

Frequency	32.768kHz
ESR (Equivalent Series Resistance)	90,000 Ohms Maximum
Shunt Capacitance (C0)	2.0pF Maximum
Motional Capacitance (C1)	6.5fF Typical
Frequency Tolerance @ 25° C ±5°C	±20ppm Maximum
Frequency Stability over Temperature	Parabolic -0.045ppm/°C <sup>2</sup> Typical Turnover point +25°C ±5°C (See Graph Below)
Crystal Cut	X-Cut
Load Capacitance	12.5pF (See Table Below)
Drive Level	0.1µWatt Typical, 0.5µWatt Maximum
Aging	±3ppm/year Maximum
Operating Temperature Range	-40°C to +85°C
Storage Temperature Range	-55°C to +125°C



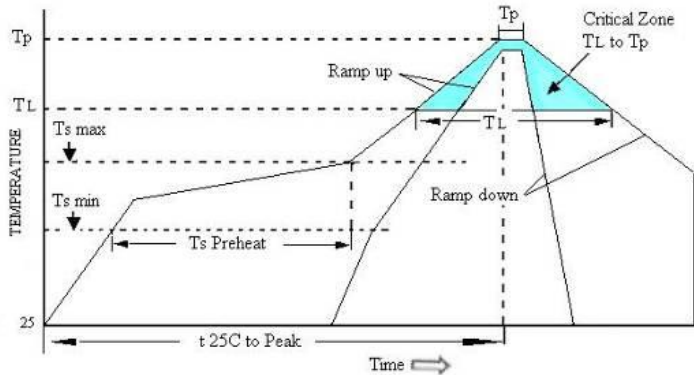
Part Number Guide		Sample Part Number: IL3W-HX5F12.5- 32.768 KHz				
Package	Stability (ppm) at Room Temperature	Stability (ppm) over Operating Temperature	Operating Temperature Range	Mode (overtone)	Load Capacitance (pF)	Frequency
IL3W	H = ±20 ppm	X = X Cut	5 = -40°C to +85°C	F = Fundamental	12.5 = 12.5pF 9.0 = 9.0pF 7.0 = 7.0pF	32.768 KHz

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### Pb Free Solder Reflow Profile:

### Typical Circuit:



Ts max to T <sub>L</sub> (Ramp-up Rate)	3°C / second max
Preheat	
Temperature min (Ts min)	150°C
Temperature typ (Ts typ)	175°C
Temperature max (Ts max)	200°C
Time (Ts)	60 to 180 seconds
Ramp-up Rate (T <sub>L</sub> to T <sub>p</sub> )	3°C / second max
Time Maintained Above Temperature (T <sub>L</sub> )	217°C
Time (T <sub>L</sub> )	60 to 150 seconds
Peak Temperature (T <sub>p</sub> )	260°C max for 10 seconds
Time within 5°C to Peak Temperature (T <sub>p</sub> )	20 to 40 seconds
Ramp-down Rate	6°C / second max
Time 25°C to Peak Temperature	8 minutes max

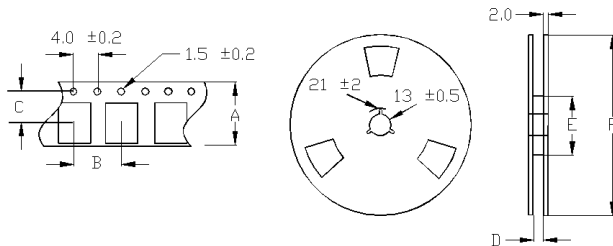
Units are backward compatible with +240°C reflow processes

### Package Information:

MSL = 1

Termination = e4 (Au over Ni over W base metal)

### Tape and Reel Information:



Quantity per Reel	5000
A	8.0 ±0.3
B	4.0 ±0.2
C	3.5 ±0.02
D	9.0 ±1.0
E	60 / 80
F	180

### Environmental Specifications

Thermal Shock	MIL-STD-883, Method 1011, Condition A
Moisture Resistance	MIL-STD-883, Method 1004
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Mechanical Vibration	MIL-STD-883, Method 2007, Condition A
Resistance to Soldering Heat	J-STD-020C, Table 5-2 Pb-free devices (except 2 cycles max)
Hazardous Substance	Pb-Free / RoHS
Solderability	JESD22-B102 Method 2 (Preconditioning E)
Terminal Strength	MIL-STD-883, Method 2004, Test Condition D
Gross Leak	MIL-STD-883, Method 1014, Condition C
Fine Leak	MIL-STD-883, Method 1014, Condition A1
Solvent Resistance	MIL-STD-202, Method 215

### Marking

Line 1: I, Date Code (YWW)