

## 2.0 mm x 1.6 mm Ceramic Package SMD Oscillator, CMOS

## ISM36 Series

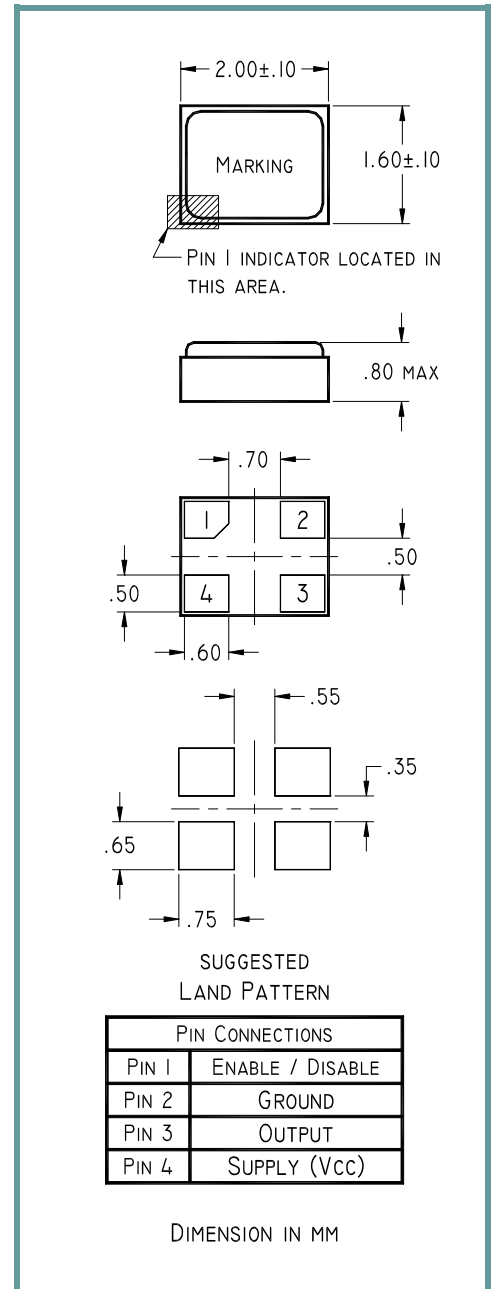
### Product Features:

Very Low Current Consumption  
 CMOS Logic Levels  
 Compatible with Leadfree Processing  
 Small Footprint Package  
 AT Cut Temperature Stability Characteristics

### Applications:

Real Time Clocks  
 Metering  
 Industrial Control  
 Time Reference  
 System Clock

<b>Frequency</b>	32.768 kHz
<b>Output Level</b> CMOS	'0' = 0.1 V <sub>CC</sub> Max., '1' = 0.9 V <sub>CC</sub> Min.
<b>Duty Cycle</b>	50% ±5%
<b>Rise / Fall Time</b>	50 nSec Max. 1.8V (20% to 80% V <sub>CC</sub> Levels) 40 nSec Max. 2.5V (20% to 80% V <sub>CC</sub> Levels) 30 nSec Max. 3.3V (20% to 80% V <sub>CC</sub> Levels)
<b>Output Load</b>	15pF Max
<b>Frequency Tolerance</b> (at +25°C)	See Part Number Guide Below
<b>Frequency Stability</b>	See Part Number Guide Below
<b>Enable / Disable Time</b>	200 nSec Max
<b>Start Up Time</b>	7.0 mSec Max. (V <sub>CC</sub> = 3.3V) 10.0 mSec Max. (V <sub>CC</sub> = 1.8V)
<b>Supply Voltage</b>	See Input Voltage Table, tolerance ±10%
<b>Current Operating</b>	40 µA Max. (F=32.768kHz, V <sub>CC</sub> = 3.3V, 15 pF load)
<b>Current Standby</b>	3 µA Max
<b>Stand-by Function</b>	Output Enable (High) = 0.7 V <sub>CC</sub> Min, Output Disable (Low/High Impedance) = 0.3 V <sub>CC</sub> Max.
<b>Operating</b>	See Operating Temperature Table in Part Number Guide
<b>Storage</b>	-40° C to +105° C Standard



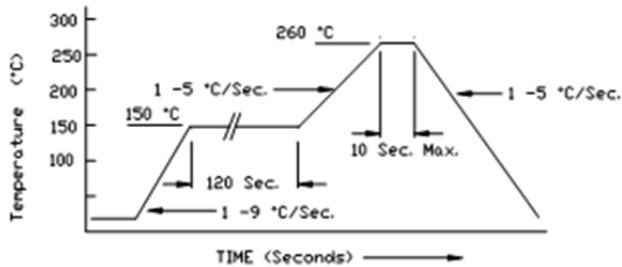
Part Number Guide		Sample Part Number:		ISM36 -32ZBH – 32.768 kHz		
Package	Input Voltage	Operating Temperature	Frequency Tolerance 25°C (in ppm)	Stability (in ppm)	Enable / Disable	Frequency
ISM36 -	3 = 3.3 V	1 = 0° C to +70° C	E = ±10	E = ±10*	H = Stand-by	- 32.768 kHz
	6 = 2.5 V	3 = -20° C to +70° C	D = ±15	D = ±15		
	1 = 1.8 V	5 = -30° C to +85° C	F = ±20	F = ±20		
		2 = -40° C to +85° C	Z = ±30	Z = ±30		
			B = ±50	B = ±50		

NOTE: A 0.01 µF bypass capacitor is recommended between Vdd (pin 4) and GND (pin 2) to minimize power supply noise. \* Not available at all operating temperature options.

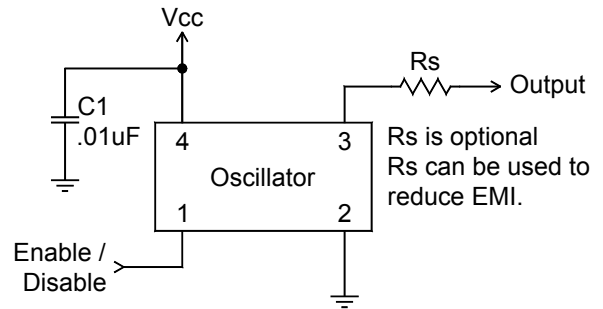
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### Pb Free Solder Reflow Profile



### Typical Application:

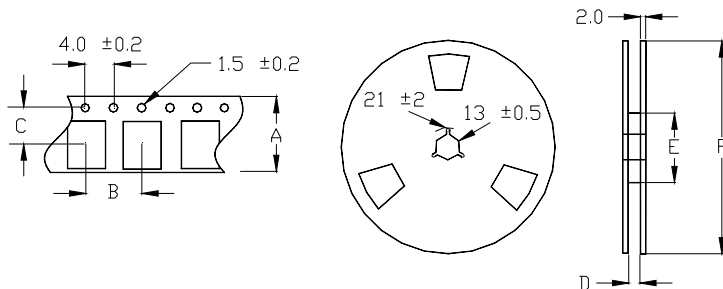


Units are backward compatible with 240C reflow processes

### Package Information:

MSL = N.A. (package does not contain plastic, storage life is unlimited under normal room conditions).  
Termination = e4 (Au over Ni over W base metallization).

### Tape and Reel Information:



Quantity per Reel	3000
A	8.0+/- .3
B	4.0 +/- .2
C	3.5 +/- .2
D	16.5 +/- .2
E	50 / 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 / Green Compliant
Solderability	JESD22-B102-D Method 2 (Preconditioning E)
Gross Leak	MIL-STD-883, Method 1014, Condition C
Fine Leak	MIL-STD-883, Method 1014, Condition A2, R1=2x10 <sup>-8</sup> atm cc/s
Solvent Resistance	MIL-STD-202, Method 215

### Marking

Line 1: I-Date Code (YWW)

Line 2: Frequency