

Ultra-Low Noise 3.2 x 5.0 SMD Oscillator

ISM42 Series

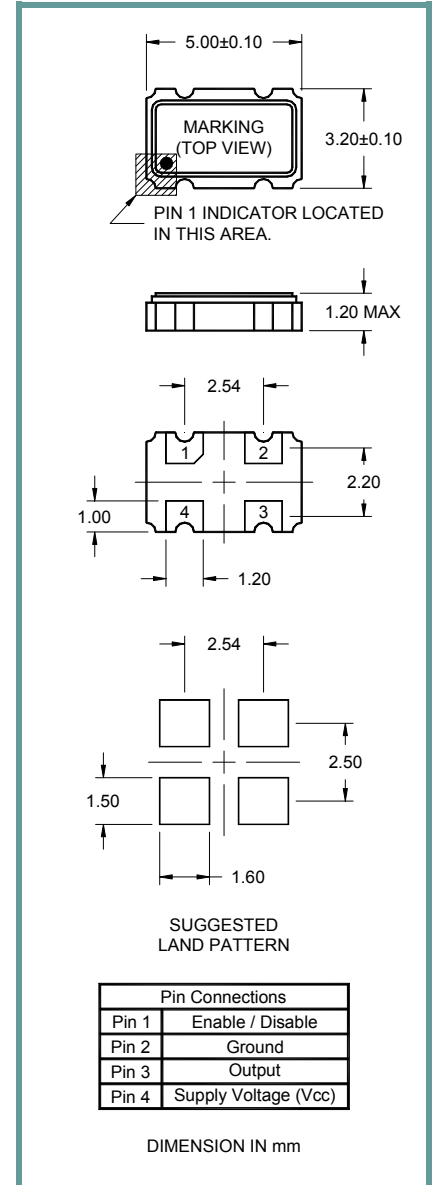
Product Features:

Freq. Range: 5.000 MHz to 50.000 MHz
Supply Voltage: +1.80 VDC to +3.30 VDC
Tri-State Function on Pin 1
Ultra-Low Phase Jitter and Phase Noise
LVCMOS Compatible

Applications:

SD/HD Video
Wireless Base Stations
Sonet/SDH
T1/E1, T3/E3

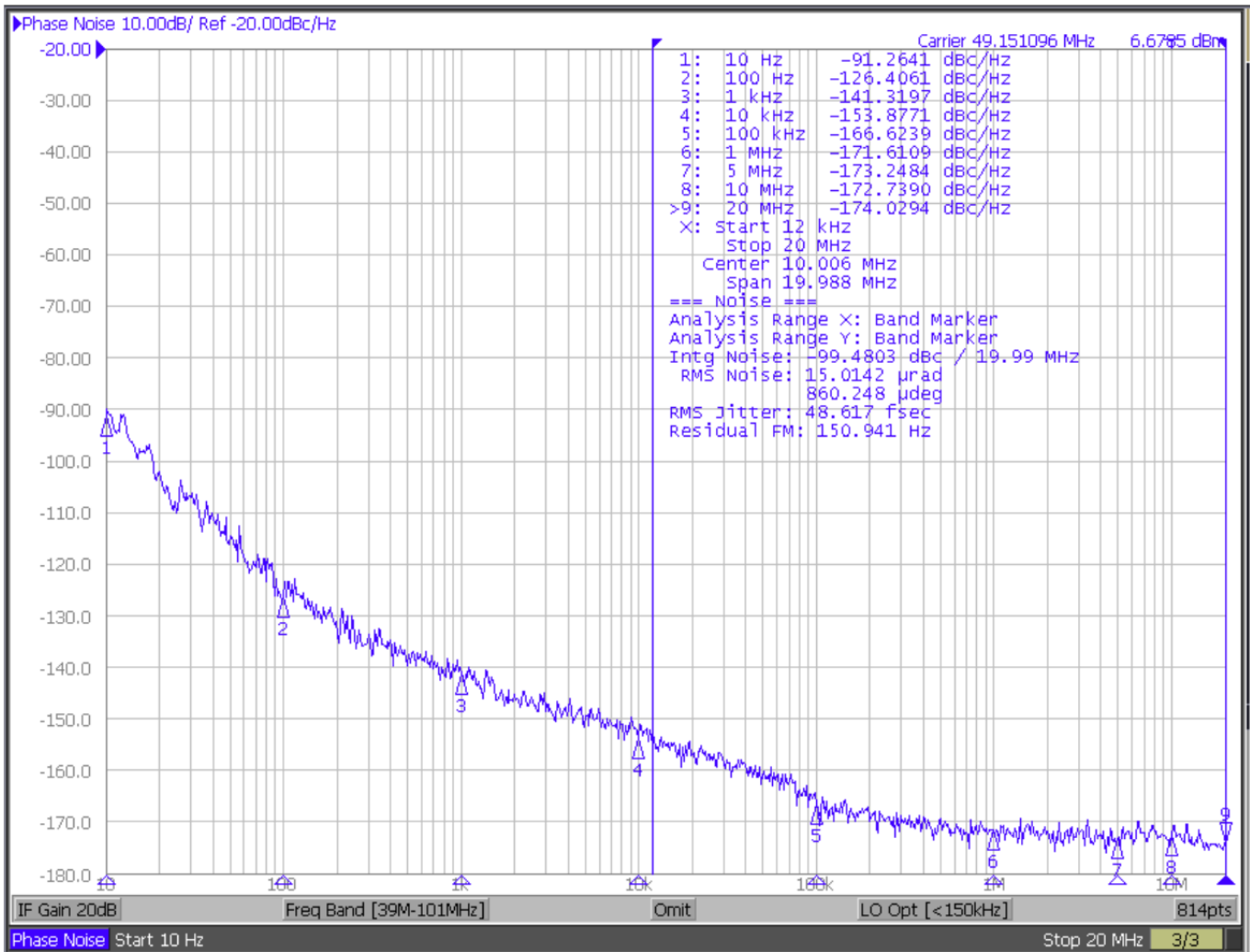
Frequency Range	5.000 MHz to 50.000MHz												
Frequency Tolerance at +25°C ±2°C	See Part Number Guide Below												
vs Temperature	See Part Number Guide Below												
vs Supply Voltage (Vcc)	±1.0 ppm max												
Output Waveform	LVCMOS												
Logic "0"	10% of Vcc max												
Logic "1"	90% of Vcc min												
Rise / Fall Time	10 nSec max for 10% to 90% of waveform												
Duty Cycle	50% ± 5% at 50% of waveform												
Start-up Time	0.8 mSec typ. , 5.0 mSec max												
Load	15 pF												
Aging	±3 ppm max first year ±2 ppm max per year thereafter												
Tri-State Function (Pin 1)													
Tri-State Operation	Voh = 70% of Vcc min or no connection to Enable Output Vol = 30% of Vcc or grounded to Disable Out (High Impedance)												
Enable / Disable Time	Enable: 1.0 mSec max Disable: 200 nSec max												
Disable Current	20 µA max												
Temperature Ranges													
Operating	See Part Number Guide Below												
Storage	-50°C to +100°C												
Supply Voltage / Supply Current													
	<table border="1"> <thead> <tr> <th>Option</th> <th>Supply Voltage (Vcc)</th> <th>Current</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>+1.80 VDC</td> <td>3.0 mA typ., 5.0 mA max.</td> </tr> <tr> <td>6</td> <td>+2.50 VDC</td> <td>4.7 mA typ., 7.0 mA max.</td> </tr> <tr> <td>3</td> <td>+3.30 VDC</td> <td>7.0 mA typ., 10.0 mA max.</td> </tr> </tbody> </table>	Option	Supply Voltage (Vcc)	Current	1	+1.80 VDC	3.0 mA typ., 5.0 mA max.	6	+2.50 VDC	4.7 mA typ., 7.0 mA max.	3	+3.30 VDC	7.0 mA typ., 10.0 mA max.
Option	Supply Voltage (Vcc)	Current											
1	+1.80 VDC	3.0 mA typ., 5.0 mA max.											
6	+2.50 VDC	4.7 mA typ., 7.0 mA max.											
3	+3.30 VDC	7.0 mA typ., 10.0 mA max.											
RMS Phase Jitter at 49.152 MHz (12 kHz to 20.0 MHz)	48 fSec typ. At +3.30 VDC 118 fSec typ. At +1.80 VDC												
Notes:													
1.	It is recommended that a 0.01 µF bypass capacitor be connected between Vdd (Pin 4) and Ground (Pin 2) to minimize power supply noise												



Part Number Guide

Package	Operating Temperature	Temperature Stability	Supply Voltage	Frequency
ISM42-	1 = 0°C to +70°C	A = ±25 ppm	1 = +1.80 VDC	-Frequency
	6 = -10°C to +70°C	B = ±50 ppm	6 = +2.50 VDC	
	3 = -20°C to +70°C	C = ±100 ppm	3 = +3.30 VDC	
	2 = -40°C to +85°C			
Sample Part Number: ISM42-2B3-32.000000MHZ				
This a 3.2 X 5.0 SMD Oscillator with an operating frequency of 32.000000 MHz with a temperature stability of ±50 ppm thru a temperature range of -40°C to +85°C . The supply voltage is +3.30VDC.				
Notes:				
1. Not all options are available at all frequencies and temperature ranges.				
2. Please consult with sales department for any other parameters or options.				
3. Oscillator specification subject to change without notice.				

Phase Noise



49.152 MHz at +3.30 VDC

49.152 MHz at +1.80 VDC

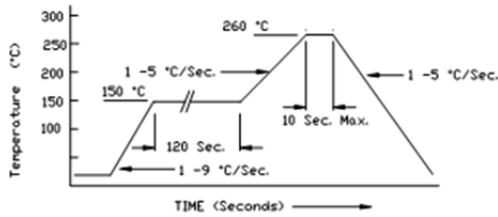
Offset	Phase Noise
10 Hz	-91 dBc/Hz typ.
100 Hz	-126 dBc/Hz typ.
1.0 kHz	-141 dBc/Hz typ.
10 kHz	-153 dBc/Hz typ.
100 kHz	-166 dBc/Hz typ.
1.0 Mhz	-171 dBc/Hz typ.
10 Mhz	-172 dBc/Hz typ.
20 Mhz	-174 dBc/Hz typ.

Offset	Phase Noise
10 Hz	-97 dBc/Hz typ.
100 Hz	-126 dBc/Hz typ.
1.0 kHz	-132 dBc/Hz typ.
10 kHz	-146 dBc/Hz typ.
100 kHz	-159 dBc/Hz typ.
1.0 Mhz	-164 dBc/Hz typ.
10 Mhz	-164 dBc/Hz typ.
20 Mhz	-165 dBc/Hz typ.

Ultra-Low Noise 3.2 x 5.0 SMD Oscillator

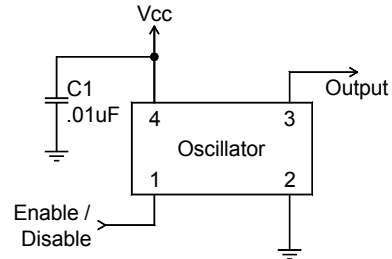
ISM42 Series

Pb Free Solder Reflow Profile:



Units are backward compatible with 240C reflow processes

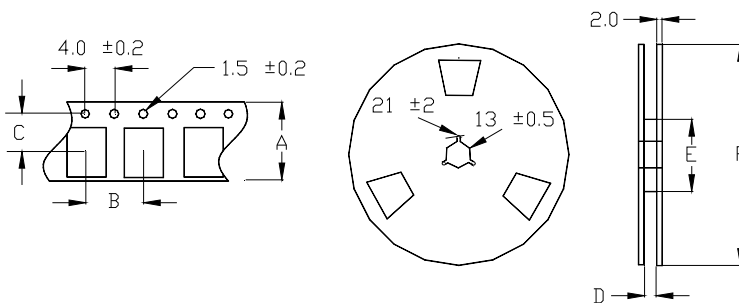
Typical Application:



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	1000
A	8.0 ±0.3
B	4.0 ±0.2
C	3.5 ±0.2
D	9.0 ±0.1
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 / 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 ⁻⁸ atm cc/s
Solvent Resistance	MIL-STD-202, Method 215

Marking:

Line 1: I-Date Code (yww)
Line 2: Frequency