

Ultra Low Noise 5.0 x 7.0 SMD Oscillator

ISM41 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:

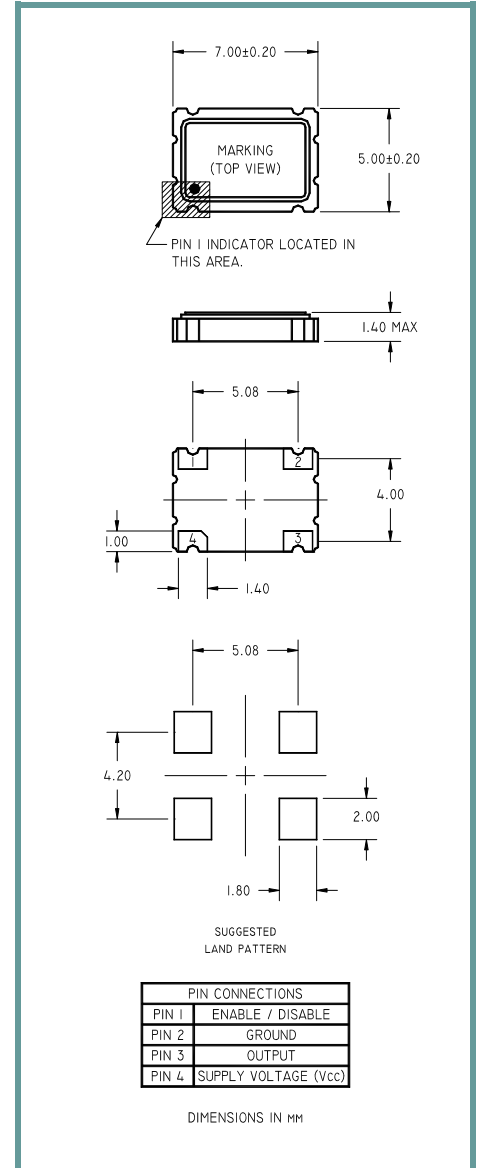
SD/HD Video
Wireless Base Stations
Sonet/SDH
T1/E1, T3/E3

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.
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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:

- 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
ISM41-	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			

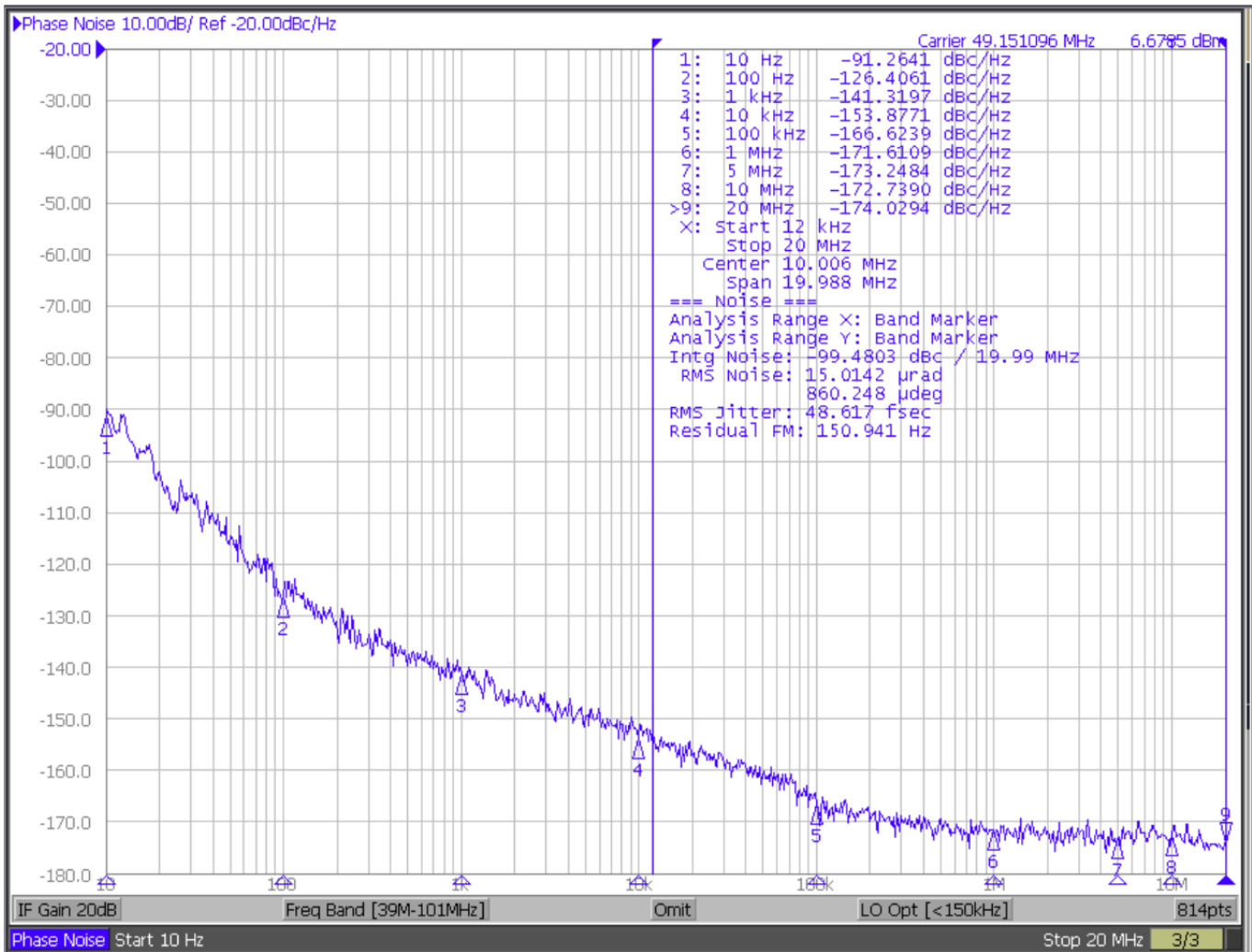
Sample Part Number: **ISM41-6A3-49.152000MHZ**

This is a 5.0 X 7.0 SMD Oscillator with an operating frequency of 49.152000 MHz with a temperature stability of ±25 ppm thru a temperature range of -10°C to +70°C. The supply voltage is +3.30VDC.

Notes:

- Not all options are available at all frequencies and temperature ranges.
- Please consult with sales department for any other parameters or options.
- Oscillator specification subject to change without notice.

Phase Noise



49.152 MHz at +3.30 VDC

49.152 MHz at +1.80 VDC

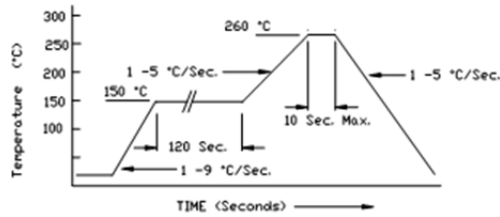
Offset	Phase Noise
10 Hz	-91 dBc/Hz typ.
100 Hz	-126 dBc/Hz typ.
1.0 kHz	-141 dBc/Hz typ.
10 kHz	-153 dBc/Hz typ.
100 kHz	-166 dBc/Hz typ.
1.0 Mhz	-171 dBc/Hz typ.
10 Mhz	-172 dBc/Hz typ.
20 Mhz	-174 dBc/Hz typ.

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 5.0 x 7.0 SMD Oscillator

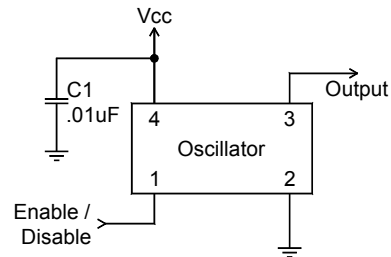
ISM41 Series

Pb Free Solder Reflow Profile:



Units are backward compatible with 240°C reflow processes

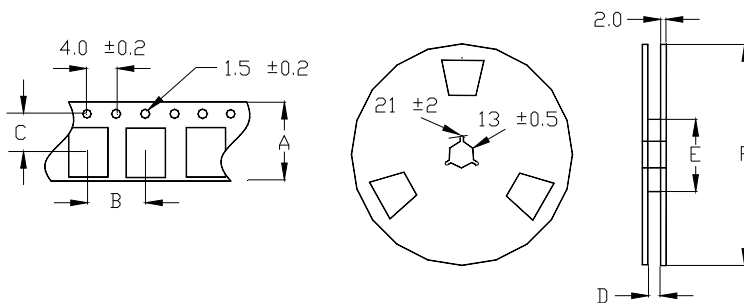
Typical Application:



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	16.0 ±0.3
B	8.0 ±0.2
C	7.5 ±0.2
D	17.5 ±0.1
E	50 / 60 / 80
F	180 / 250

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