Ultra-Low Noise 2.5mm x 3.2mm SMD Oscillator

ISM43 Series

Product Features:

- Frequency Range, 20.000MHz to 50.000MHz
- Supply Voltages, 1.8Vdc, 2.5Vdc, or 3.3Vdc
- Tri-State Function on Pin 1
- Ultra-Low Phase Jitter and Phase Noise
- Industry-standard 2.5mm x 3.2mm package
- LVCMOS Output
- RoHS and REACH compliant

Applications:

- SD/HD Video
- Wireless Base Stations
- Sonet/SDH
- Digital Audio

Electrical Specifications:		
Frequency Range	20.000MHz to 50.000MHz	
Frequency Stability	See Part Number Guide	Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change and Output Load Change
Operating Temperature Range	See Part Number Guide	
Aging at 25°C	±3ppm Maximum First Year	
Supply Voltage	See Part Number Guide	Tolerance ±10%
Input Current	No Load 3mA Typical, 5mA Maximum 4.7mA Typical, 7mA Maximum 7mA Typical, 10mA Maximum	 Vdd = 1.8Vdc Vdd = 2.5Vdc Vdd = 3.3Vdc
Output Voltage Logic High (Voh)	90% of Vdd Minimum	IOH = -4mA
Output Voltage Logic Low (Vol)	10% of Vdd Maximum	IOL = +4mA
Rise Time/Fall Time	Measured at 10% to 90% of waveform 5nSec Typical, 10nSec Maximum 2nSec Typical, 7nSec Maximum 1.5nSec Typical, 5nSec Maximum	 Vdd = 1.8Vdc Vdd = 2.5Vdc Vdd = 3.3Vdc
Duty Cycle	50 ±5(%)	Measured at 50% of waveform
Load Drive Capability	15pF Maximum	
Output Logic Type	LVCMOS	
Pin 1 Connection	Tri-State (High Impedance)	
Tri-State Input Voltage (Vih and Vil)	70% of Vdd Minimum or No Connect to Enable Output 30% of Vdd Maximum to Disable Output (High Impedance)	
Standby Current	20µA Maximum	Disabled Output: High Impedance
Tri-State Output Disable Time	200nSec Maximum	
RMS Phase Jitter (Random)	Fj = 49.152MHz, Fj = 12kHz to 20MHz 118fSec Typical 100fSec Typical 48fSec Typical	 Vdd = 1.8Vdc Vdd = 2.5Vdc Vdd = 3.3Vdc
Start Up Time	5mSec Maximum	
Phase Noise	See Table 1 and Table 2 (on page 3)	
Storage Temperature Range	-50°C to +100°C	
Notes:		

Absolute Maximum Limits	
Storage Temperature	-50ºC to +100ºC
Supply Voltage (Vdd)	-0.5 VDC to 4.0 VDC
Electrostatic Discharge	2000 V max
Solder Temperature (follow standard Pb free soldering guidelines)	260ºC max
Junction Temperature	150ºC max

CEOB2B晶振平台-全球最专业的晶振在线采购查询平台http://www.crystal95.com

Ultra-Low Noise 2.5mm x 3.2mm SMD Oscillator

ISM43 Series

Ordering Information:

Part Number Guide				
Package	**Operating Temperature Range**	**Frequency Stability**	**Supply Voltage**	**Frequency**
ISM43-	1 = 0ºC to +70ºC 6 = -10ºC to +70ºC 3 = -20ºC to +70ºC 2 = -40ºC to +85ºC	A = ±25ppm B = ±50ppm C = ±100ppm	1 = 1.8Vdc 6 = 2.5Vdc 3 = 3.3Vdc	- Frequency

Sample Part Number: **ISM43-1B1-16.000000 MHz**

This is 2.5mm x 3.2mm SMD Oscillator with an Operating Temperature Range of 0ºC to +70ºC with a Frequency Stability of ±50ppm. Supply Voltage of +3.3Vdc and with an Operating Frequency of 16.000000 MHz.

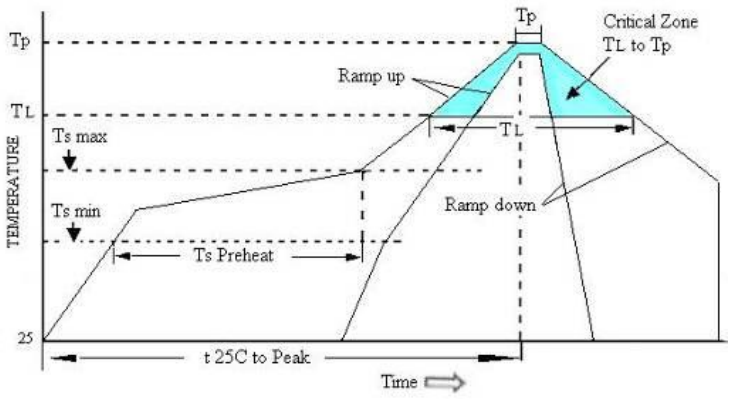
Notes:

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

Environmental Specifications:

Environmental Compliance	
Parameter	**Condition/Test Method**
ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500V
Flammability	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	UL94-V0
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A

Pb Free Solder Reflow Profile



Ts max to T_L (Ramp-up Rate)	3ºC / second max
Preheat Temperature min (Ts min) Temperature typ (Ts typ) Temperature max (Ts max) Time (Ts)	 150ºC 175ºC 200ºC 60 to180 seconds
Ramp-up Tate (T_L to Tp	3ºC / second max
Time Maintained Above Temperature (T_L) Time (T_L)	 217ºC 60 to 150 seconds
Peak Temperature (Tp)	260ºC max for seconds
Time within 5ºC to Peak Temperature (Tp)	 20 to 40 seconds
Ramp-down Rate	6ºC / second max
Tune 25ºC to Peak Temperature	8 minute max
Moisture Sensitivity Level (MSL)	Level 1

Units are backward compatible with +240ºC reflow processes

CEO B2B晶振平台-全球最专业的晶振在线采购查询平台http://www.crystal95.com

Typical Phase Noise, Vdd = 3.3Vdc, 25°C

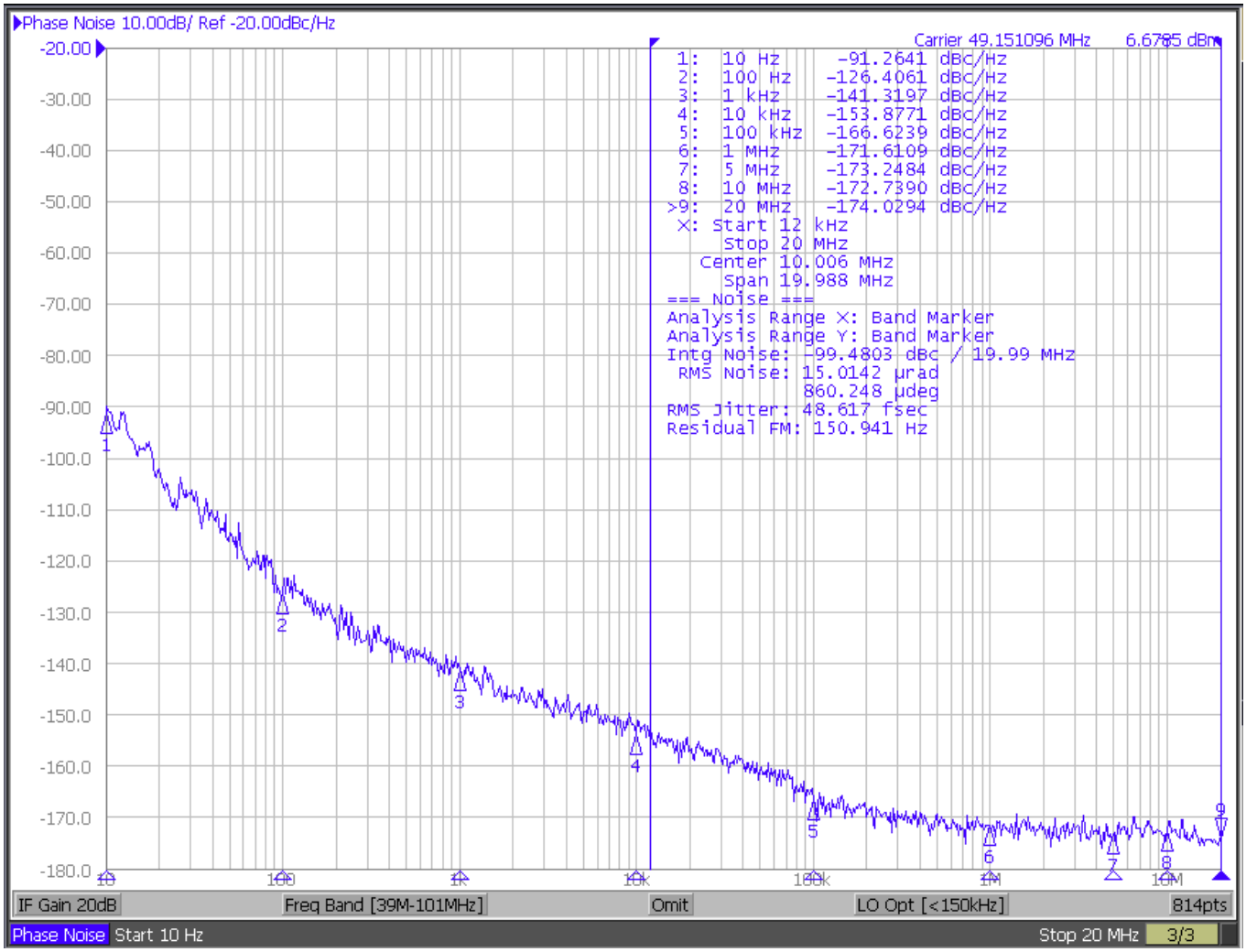


TABLE 1

49.152MHz at 3.3Vdc	
Offset	**Phase Noise (Typical)**
10 Hz	-91 dBc/Hz
100 Hz	-126 dBc/Hz
1.0 kHz	-141 dBc/Hz
10 kHz	-153 dBc/Hz
100 kHz	-166 dBc/Hz
1.0 MHz	-171 dBc/Hz
10 MHz	-172 dBc/Hz
20 MHz	-174 dBc/Hz

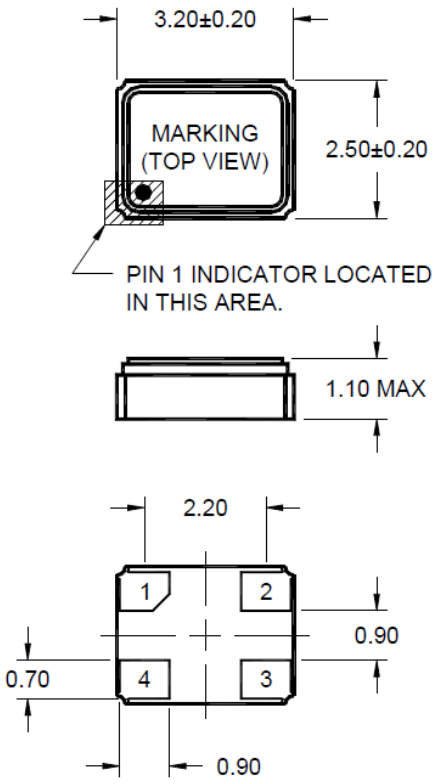
TABLE 2

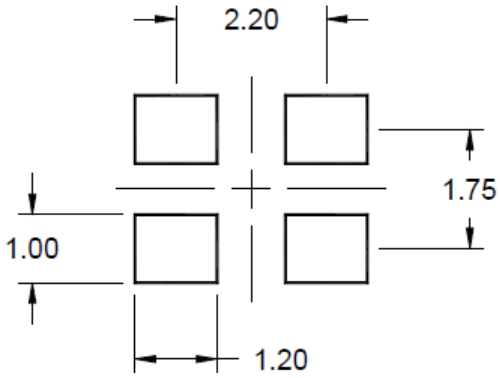
49.152MHz at 1.8Vdc	
Offset	**Phase Noise (Typical)**
10 Hz	-97 dBc/Hz
100 Hz	-126 dBc/Hz
1.0 kHz	-132 dBc/Hz
10 kHz	-146 dBc/Hz
100 kHz	-159 dBc/Hz
1.0 MHz	-164 dBc/Hz
10 MHz	-164 dBc/Hz
20 MHz	-165 dBc/Hz

CEOB2B晶振平台-全球最专业的晶振在线采购查询平台http://www.crystal95.com

Mechanical Detail

Package Dimensions and Suggest Land Pattern





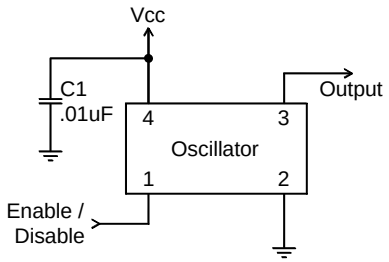
All dimension in millimeters (mm).

Pin Connections
Pin 1: Enable / Disable
Pin 2: Ground
Pin 3: Output
Pin 4: Supply Voltage (Vcc)

Marking
Line 1 = I-Date Code (YWW)
Line 2 = Frequency

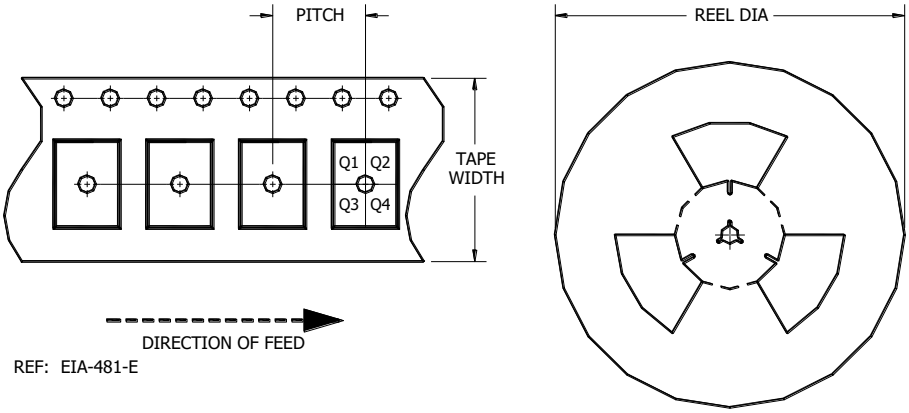
Package Information
Termination = e4
Au over Ni over W base metallization

Typical Application



CEOB2B晶振平台-全球最专业的晶振在线采购查询平台http://www.crystal95.com

Tape and Reel Dimensions



Part Number	Size	Pitch	Tape Width	Pin Orient.	Reel Dia.	Count
ISM43	2.5 x 3.2	4.0 ± 0.1	8.3 MAX	Q1	180	1000
					330	3000

Notes:
- All dimensions are in millimeters (mm).

PROPRIETARY AND CONFIDENTIAL
THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION, AND SUCH INFORMATION MAY NOT BE DISCLOSED TO OTHERS FOR ANY PURPOSE NOR USED FOR MANUFACTURING PURPOSES WITHOUT WRITTEN PERMISSION FROM ILSI America.

CEOB2B晶振平台-全球最专业的晶振在线采购查询平台http://www.crystal95.com