

# ISM16 Series



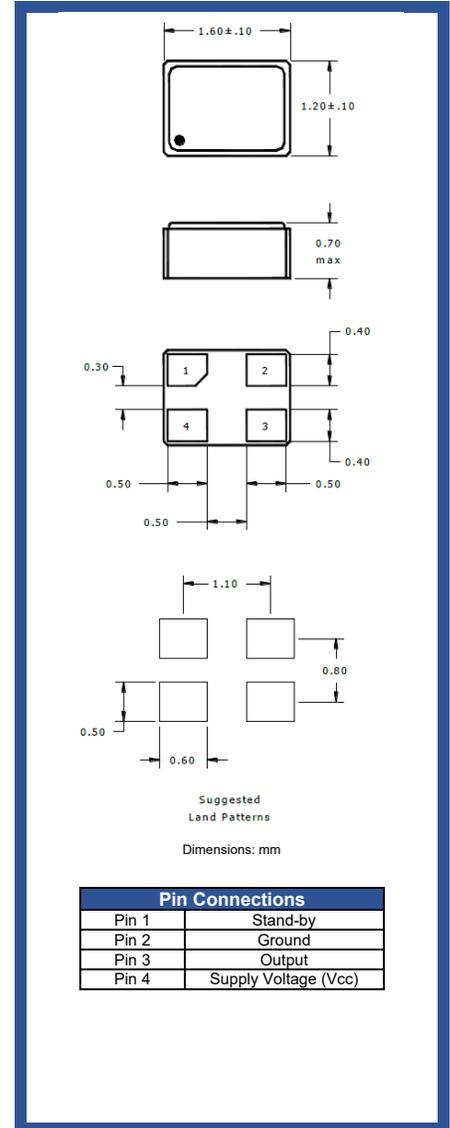
## Product Feature:

CMOS Output  
 Low Jitter, Non-PPL Based Output Wide  
 Range of Supply Voltage (1.8 to 3.3V)  
 Stand-by Function on Pin 1  
 RoHS Compliant  
 Compatible Leadfree Processing

## Applications:

Fibre Channel  
 Server & Storage  
 802.11 / Wifi  
 Sonet/SDH  
 T1/E1, T3/E3

<b>Frequency</b>	3.000000 MHz to 80.000000 MHz
<b>Output Level CMOS</b>	Logic "0" = 0.4 V max Logic "1" = Vcc - 0.4 V min
<b>Duty Cycle</b>	See Duty Cycle Table in Part Number Guide
<b>Rise / Fall Time</b>	4.5 nSec max (10% to 90% of waveform)
<b>Output Load</b>	15pF max
<b>Frequency Stability</b>	See Frequency Stability Table in Part Number Guide (Note 1)
<b>Start-up time</b>	2.0 mSec max with Vcc = +3.30 VDC 5.0 mSec max with Vcc = +1.80 VDC
<b>Stand By Terminal Function (Pin 1)</b>	0.7 Vcc min = Output enable 0.3 Vcc max = Oscillation stop and High impedance output
<b>Supply Voltage (Vcc)</b>	See Input Voltage Table in Part Number Guide (Tolerance = ±10%)
<b>Current During Standby During Operation</b>	10 µA max 2.5 typ., 3.5 mA max (1.8 V, 15 pF load @ 50.000MHz) 3.5 typ., 5.0 mA max (1.8 V, 15 pF load @ 80.000MHz) 4.2 typ., 6.0 mA max (3.3 V, 15 pF load @ 50.000MHz) 6.0 typ., 8.5 mA max (3.3 V, 15 pF load @ 80.000MHz)
<b>Aging</b>	± 3.0 ppm max @ +25°C First Year
<b>Operating Temperature Range</b>	See Operating Temperature Table in Part Number Guide
<b>Storage Temperature Range</b>	-40°C to +85°C
<b>Random Jitter (RJ)</b>	2.9 pSec typical
<b>Total Jitter (TJ)</b>	40.0 pSec typical TJ = n x RJ where n ≈ 14.1, BER = 10 <sup>-12</sup>
<b>Phase Jitter</b>	1.0 pSec max Offset frequency = 12 kHz to 5.000MHz



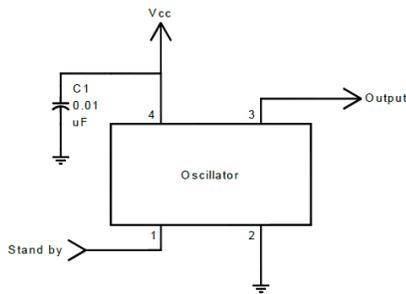
### Notes:

- Includes room temperature tolerance and stability over operating temperature.
- A 0.01 F bypass capacitor is recommended between Vcc (Pin 4) and GND (Pin 2) to minimize power supply noise

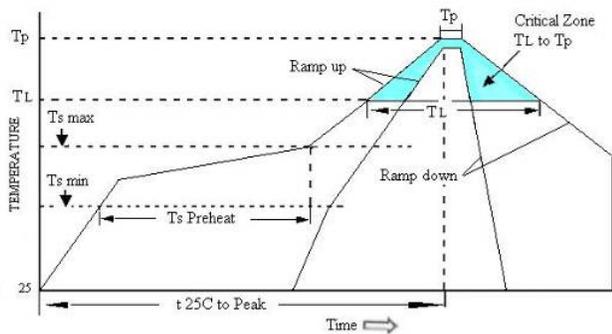
Part Number Guide		Sample Part Number:		ISM16-3153A-20.000 MHz		
Package	Input Voltage	Operating Temperature	Symmetry (Duty Cycle)	Output	Stability (in ppm)	Frequency
ISM16 -	1 = 1.8 V	1 = 0° C to +70° C	5 = 45 / 55 Max.	3 = 15 pF	*A = ±25	-20.0000 MHz
	3 = 3.3 V	2 = -40° C to +85° C	6 = 40 / 60 Max.		B = ±50	
	6 = 2.5 V	3 = -20° C to +70° C			C = ±100	
		5 = -30° C to +85° C			*F = ±20	
					G = ±30	

\*Note available for all temperature ranges

## Typical Application:



## Pb Free Solder Reflow Profile:



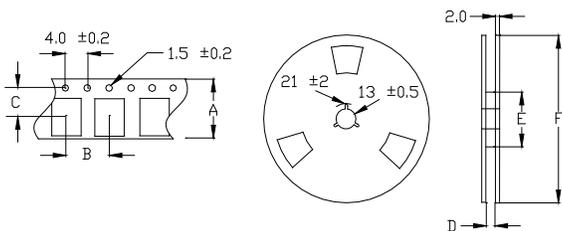
Units are backward compatible with 240°C reflow processes

Ts max to TL (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 (TL to Tp)	3°C / second max
Time Maintained Above Temperature (TL)	217°C
Time (TL)	60 to 150 seconds
Peak Temperature (Tp)	260°C max for 10 seconds
Time within 5°C to Peak Temperature (Tp)	20 to 40 seconds
Ramp-down Rate	6°C / second max
Time 25°C to Peak Temperature	8 minutes max

## 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 ±0.2
B	4.0 ±0.1
C	3.5 ±0.05
D	9.0 ±0.3
E	60 / 80
F	180 / 250

Dimensions: mm