ISM97 Series



Product Features:

Low Jitter, Non-PLL Based Output Compatible with Lead free Processing Pb-free, Halogen-free, and Antimony-free RoHS and REACH compliant

Applications:

Fibre Channel Server & Storage Sonet / SDH 802.11 / WiFi T1/E1, T3/E3 System Clock

Electrical Specifications:

Frequency Range	1.000MHz to 156.250MHz		
. , ,	1.000WHZ to 130.230WHZ		
Frequency Stability	±10ppm Maximum ±15ppm Maximum ±20ppm Maximum ±25ppm Maximum ±50ppm Maximum ±100ppm Maximum	Inclusive of Calibration Tolerance at 25°C, Frequency Stability over Operating Temperature Range, Supply Voltage Change, Output Load Change, and First Yea Aging at 25°C.	
Operating Temperature Range	0°C to +70°C, -10°C to +60°C, -10°C to +70°C, -20°C to +70°C, -30°C to +75°C, or -40°C to +85°C		
Supply Voltage (Vdd)	1.8V, 2.5V, 2.7V, 3.0V, 3.3V, 1.62V - 3.63V	±5%	
Input Current	20mA Maximum		
Output Logic Type	CMOS		
Output Drive Capability	15pF Maximum 30pF Maximum		
Aging	±3ppm/year Maximum	at +25°C	
Duty Cycle	50 ±5(%) or 50 ±10(%)	Measured at 50% of waveform	
Rise / Fall Time	6nSec Maximum	Measured from 20% to 80% of waveform	
Output Voltage Logic High	90% of Vdd Minimum		
Output Voltage Logic Low	10% of Vdd Maximum		
Pin 1 Connection	Tri-State (High Impedance)		
Input Voltage Logic High	70% of Vdd Minimum or No Connect to Enable Output		
Input Voltage Logic Low	30% of Vdd Maximum to Disable Output (High Impedance)		
Standby Current	10μA Maximum	Disabled Output, High Impedance	
Startup Time	10mSec Maximum		
RMS Phase Jitter	1pSec Maximum	12kHz to 20MHz offset frequency	
Period Jitter (RMS)	5pSec Maximum	20k adjacent periods	
Period Jitter (pk-pk)	50pSec Maximum	100k adjacent periods	
 NOTES: All minimum and maximum limits are specified over temperature and rated operating voltage with 15pF output unless otherwise stated. A 0.1µF bypass capacitor is recommended between Vdd (pad 4) and GND (pad 2) to minimize power supply noise. 			

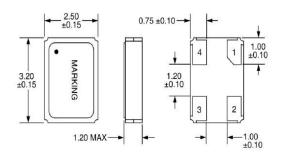


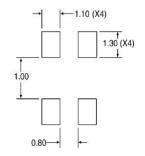
Absolute Maximum Limits:

Storage Temperature Range	-55°C to +125°C		
Supply Voltage Range	-0.3Vdc to Vdd +0.3Vdc		
Electrostatic Discharge	2000V Maximum		
Solder Temperature 260°C Maximum			
Junction Temperature	150°C Maximum		
NOTE: If the part is used beyond absolute maximum ratings, it may cause internal destruction. The part should be used under the			

NOTE: If the part is used beyond absolute maximum ratings, it may cause internal destruction. The part should be used under the recommended operating conditions or the reliability of this part may be damaged if those conditions are exceeded.

Mechanical & Solder Pad Lavout Dimensions:





Pin Connections			
Pin 1	Tri-State or No Connect		
Pin 2	Case/Ground		
Pin 3	Output		
Pin 4	Supply Voltage		

Dimension Units: mm

Part Num	Part Number Guide Sample Part Number: ISM97-3251BH-20.000 MHz						
Series	Supply Voltage	Operating Temperature Range	Duty Cycle	Output Drive Capability	Frequency Stability	Pin 1 Connectio	Frequency
ISM97-	3 = 3.3V	1 = 0°C to +70°C	5 = 50 ±5%	1 = 15pF	E = ±10ppm	n H = Tri-State	-25.000 MH
	7 = 3.0V	8 = -10°C to +60°C	6 = 50 ±10%	6 = 30pF	D = ±15ppm	O = N/C	
	2 = 2.7V	6 = -10°C to +70°C		·	F = ±20ppm		
	6 = 2.5V	3 = -20°C to +70°C			A = ±25ppm		
	1 = 1.8V	4 = -30°C to +75°C			B = ±50ppm		
	8 = 1.62V - 3.63V	2 = -40°C to +85°C			C = ±100ppm		

NOTES

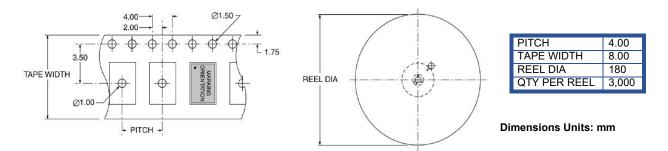
- Not all Frequency Stability options are available at all frequencies and Operating Temperature Ranges.
- Not all Output Drive Capability options are available at all frequencies.
- Not all Supply Voltage options are available at all frequencies.
- Please consult with Sales Department any other parameters or options.

Package Information

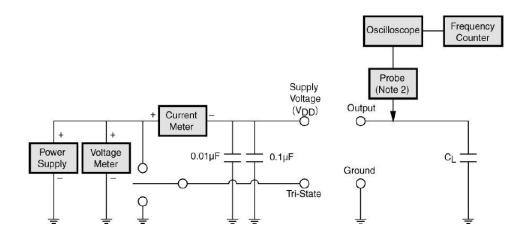
Termination = e4 (Au over Ni over W base metallization)
Terminal Plating Thickness:
Gold (0.3μm to 1.0μm), Nickel (1.27μm to 8.89μm)



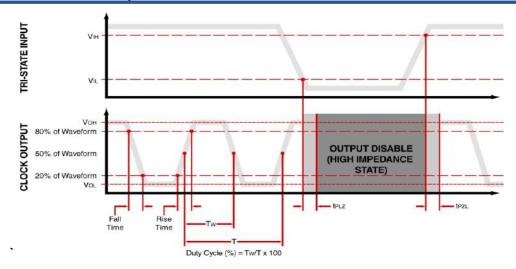
Tape & Reel Dimensions:



Test Circuit: Enable/Disable Option



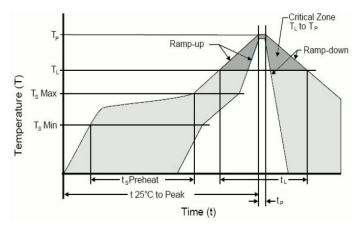
Waveform: Enable/Disable Option



ISM97 Series



Solder Reflow Profile:



Units are backward compatible with +240°C reflow process

Ts max to T∟ (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 to180 seconds		
Ramp-up Rate (T∟ to Tp)	3°C / second max		
Time Maintained Above			
Temperature (T _∟)	217°C		
Time (T∟)	60 to 150 seconds		
Peak Temperature (Tp)	260°C max for 10 seconds		
Time within 5°C to Peak	20 to 40 seconds		
Temperature (Tp)			
Ramp-down Rate	6°C / second max		
Tune 25°C to Peak Temperature	8 minutes max		
Moisture Sensitivity Level (MSL)	Level 1		