

ISM95 Series



Product Feature:

Low Jitter, Non-PLL Based Output
CMOS Compatible Logic Levels
Compatible with Leadfree Processing

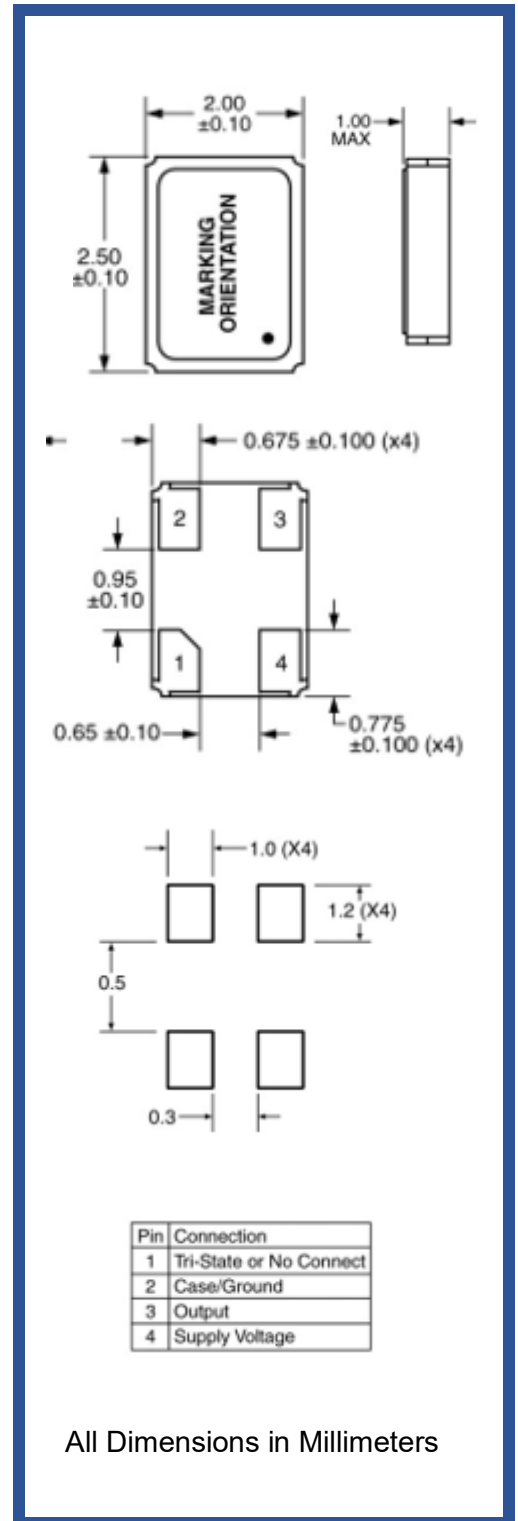
Applications:

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

Frequency Range	1.000 MHz to 156.250 MHz
Frequency Stability (Inclusive of Calibration Tolerance at 25°C, Frequency Stability over Operating Temperature Range, Supply Voltage Change, Output Load Change, and First Year Aging at 25°C)	±10ppm Maximum ±15ppm Maximum ±20ppm Maximum ±25ppm Maximum ±50ppm Maximum ±100ppm Maximum
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) (±5%)	1.8V, 2.5V, 2.7V, 3.0V, 3.3V, 1.62V - 3.63V
Input Current	20mA Maximum
Output Logic Type	CMOS
Output Drive Capability	15pF Maximum 30pF Maximum
Aging	±3ppm/year Maximum
Duty Cycle (Measured at 50% of waveform)	50 ±5(%) or 50 ±10(%)
Rise / Fall Time (Measured from 20% to 80% of waveform)	6nSec Maximum
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 (Disabled Output, High Impedance)	10µA Maximum
Startup Time	10mSec Maximum
RMS Phase Jitter (12kHz to 20MHz offset frequency)	1pSec Maximum
Period Jitter (RMS) (20k adjacent periods)	5pSec Maximum
Period Jitter (pk-pk) (100k adjacent periods)	50pSec Maximum

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.



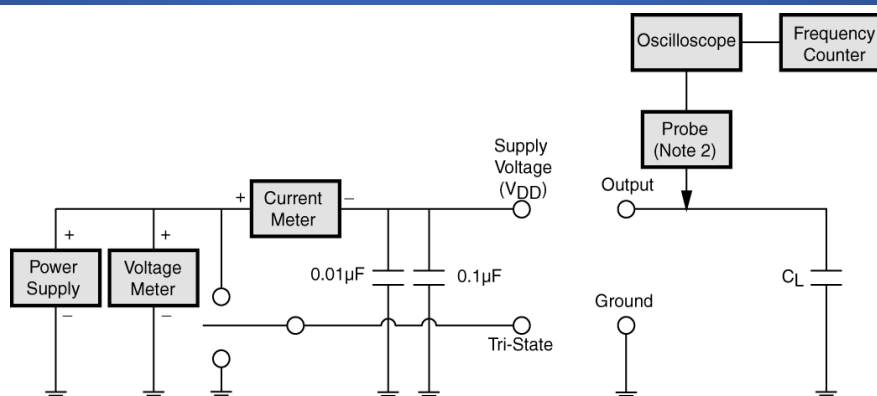
Absolute Maximum Limits:

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

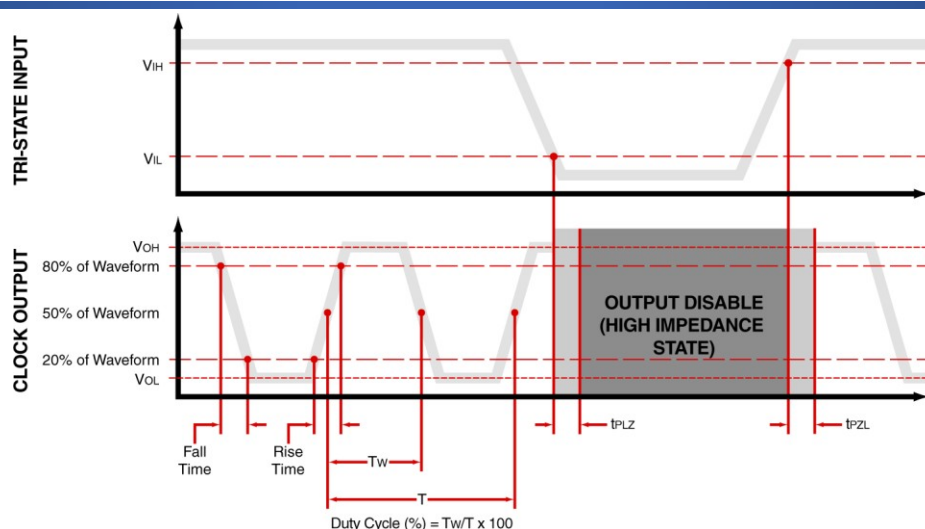
Environmental Specifications:

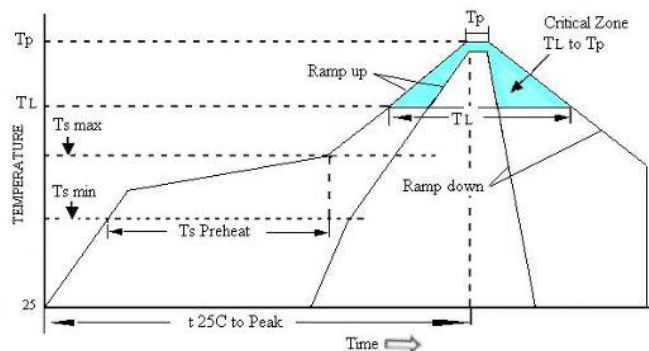
Mechanical Shock	MIL-STD-202, Method 213
Mechanical Vibration	MIL-STD-202, Method 204
Resistance to Soldering Heat	MIL-STD-202, Method 210
Solderability	J-STD-002
Gross Leak	MIL-STD-883, Method 1014
Fine Leak	MIL-STD-883, Method 1014
Moisture Sensitivity Level	MSL 1 (+260°C)

Test Circuit: Enable/Disable Option



Waveform: Enable/Disable Option



Pb Free Solder Reflow Profile:

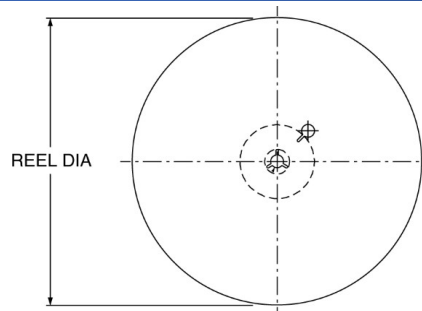
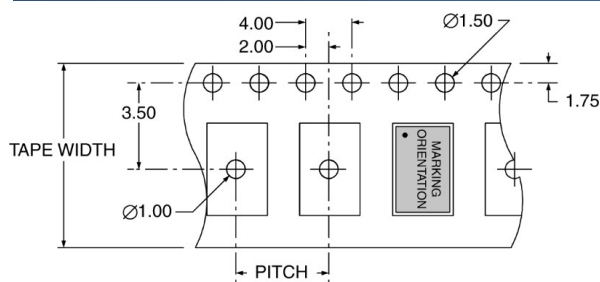
Units are backward compatible with 240C reflow processes

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

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 and Reel Information:

QTY PER REEL	3000
PITCH	4.00
TAPE WIDTH	8.00
REEL DIA	180

Part Number Guide		Sample Part Number: ISM95 - 3251BH - 20.000 MHZ					
Package	Input Voltage	Operating Temperature	Symmetry (Duty Cycle)	Output Drive Capability	Stability (in ppm)	Enable / Disable	Frequency
ISM95 -	3 = 3.3 V	1 = 0° C to +70° C	5 = 45 / 55 Max.	1 = 15 pF	A = ±25	H = Enable	-20.000 MHz
	7 = 3.0 V	8 = -10° C to +60° C	6 = 40 / 60 Max.	6 = 30 pF	B = ±50	O = N/C	
	2 = 2.7 V	6 = -10° C to +70° C			C = ±100		
	6 = 2.5 V	3 = -20° C to +70° C			D = ±15		
	1 = 1.8 V	4 = -30° C to +75° C			E = ±10		
	8 = 1.62V – 3.63V	2 = -40° C to +85° C			F = ±20		