SaRonix
A PERICOM COMPANY

Crystal Clock Oscillator

3.3V, CMOS/TTL, SMD

Technical Data

S1613 Series

ACTUAL SIZE

Description

The S1613 Series crystal-controlled, low-current oscillators provide precise rise and fall times and low output jitter to drive high performance applications. The sub-miniature, low profile leadless ceramic package has gold-plated contact pads, ideal for today's pick-and-place SMT environments.

Applications & Features

- Low Jitter, tighter stability, compact design
- Fibre Channel - 106.25MHz
- Tight stability, (±20ppm all inclusive) ideal for 802.11 applications
- Gigabit Ethernet - 125 MHz
  Perfect for PCs; Notebook, Palmtop Computers; Portable Applications; PCMCIA Cards, or anywhere small size, low power, surface mountability are a priority
- Tri-State Standard
- Low-power Stand-by feature
- 1.8mm high ceramic package
- 3.3V operation
- LVCMOS/LVTTL compatible
- Available on tape & reel; 16mm tape, 1000pcs per reel

Frequency Range:	1.544 MHz to 125 MHz
Frequency Stability:	±20, ±25, ±50 or ±100ppm over all conditions; calibration tolerance, operating temperature, rated input (supply) voltage changes, load change, *aging, shock and vibration.
*Aging:	1 year @ 25°C average ambient operating temperature
Temperature Range:	
Operating:	-10 to +70°C, -40 to +85°C
Storage:	-55 to +125°C
Supply Voltage:	3.3V ±10%
Supply Current:	
Output Enabled:	15mA max 1.544 to 32 MHz 25mA max 32+ to 50 MHz 40mA max 50+ to 80 MHz 55mA max 80+ to 125 MHz
Output Disabled:	10µA max 1.544 to 125 MHz
Output:	
Symmetry:	45/55 % max @ 50% V_{DD}, -40 to +85°C, 1.544 to 80 MHz 45/55 % max @ 50% V_{DD}, -10 to +70°C, 80 to 125 MHz 40/60 % max @ 50% V_{DD}, -40 to +85°C, 80 to 125 MHz
Rise & Fall Times:	7ns max 1.544 to 50 MHz @ 20% to 80% V_{DD} 5ns max 50+ to 80 MHz 3ns max 80+ to 125 MHz
Logic 0:	10% V_{DD} max
Logic 1:	90% V_{DD} min
Load:	15pF max, 10LSTTL
Jitter 1.544 to 80 MHz:	5ps RMS (1-sigma) max accumulated jitter in 20,000 adjacent periods 1.5ps RMS (1-sigma) max phase jitter in 10kHz - 20MHz freq. band 50ps peak-to-peak max total jitter in 100,000 periods
Jitter 80+ to 125 MHz:	3ps RMS (1-sigma) max accumulated jitter in 20,000 adjacent periods 1ps RMS (1-sigma) max phase jitter in 10kHz - 20MHz freq. band 30ps peak-to-peak max total jitter in 100,000 periods

Tri-State Control Characteristics:	Output Ocsillation (VIN):	≥ 2.2v or N/C
	Output High Impedance:	≤ 0.8V or GND
	Disable Output Delay:	≤100ns
	Enable Output Delay:	≤10ms
	Internal Pullup Resistance:	≥50kΩ

Mechanical:	
Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Vibration:	MIL-STD-883, Method 2007, Condition A
Solvent Resistance:	MIL-STD-202, Method 215
Terminal Strength:	MIL-STD-883, Method 2004, Condition D
Resitance to Soldering Heat:	MIL-STD-202, Method 210, Condition I or J
Environmental:	
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

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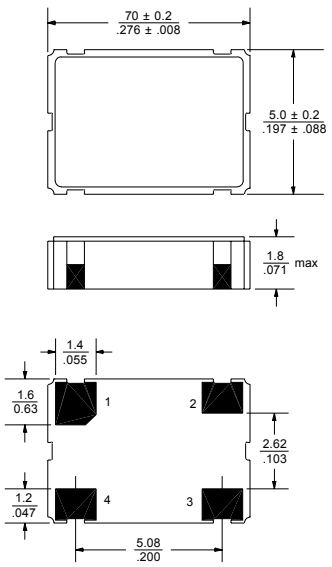
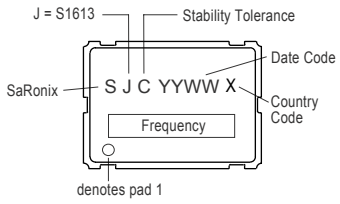
Package Details



Pin Functions:

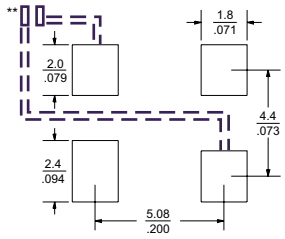
Pin 1: Tri State
Pin 2: GND
Pin 3: Output
Pin 4: V_{CC}

Marking Format*



* Exact location of items may vary

Recommended Land Pattern



**External power Supply decoupling required

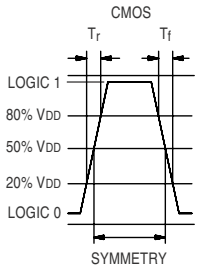
Scale: None (dimensions in $\frac{mm}{inches}$)

Part Numbering Guide

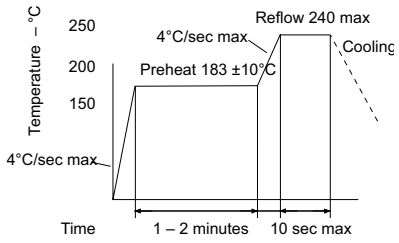
S 1613 B – 125.0000 (T)

- Saronix
- Series
- Stability Tolerance
  - AA = ±20ppm, -10 to +70°C (call for frequency availability)
  - A = ±25ppm, -10 to +70°C (call for frequency availability)
  - B = ±50ppm, -10 to +70°C
  - E = ±50ppm, -40 to +85°C
  - F = ±100ppm, -40 to +85°C
- Frequency (MHz)
- (T) = Tape & Reel
  full reel increments only
  Blank = Bulk Packaged

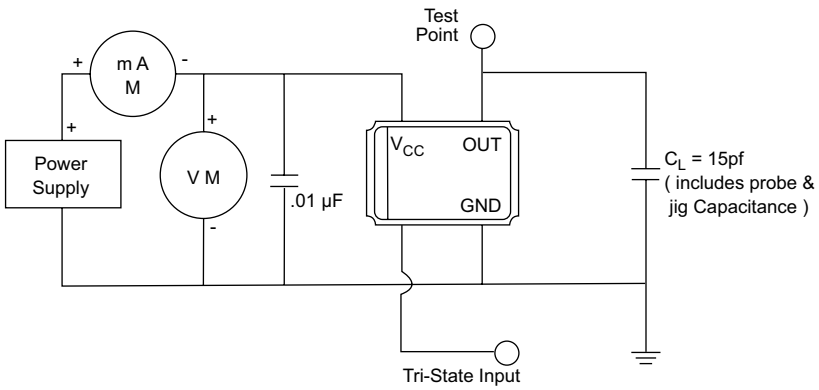
Output Waveform



Solder Reflow Guide



Test Circuits



*All specfications subject to changes without notice