SaRonix™
A PERICOM® COMPANY

Crystal Clock Oscillator

3.3V & 5V, ACMOS, TTL, SMD

Technical Data

S1903 / S1950 Series

ACTUAL SIZE

Description

The 5V S1950 and 3.3V S1903 are crystal-controlled, low-current oscillators providing precise rise and fall times to drive high performance applications. The sub-miniature, very low profile leadless ceramic package has gold-plated contact pads, ideal for today's pick-and-place SMT environments. The S1903 and the high output load S1950 are both available to 125 MHz.

Applications & Features

- Gigabit Ethernet - 125.0000 MHz
- Perfect for notebook and palmtop computers; portable applications; PCMCIA cards. Anywhere small size, low power, surface mountability are a priority. 1.8mm high SMD ceramic package
- 3.3V or 5V
- Tri-State standard
- CMOS, ACMOS & TTL compatible
- Available on tape & reel; 16mm tape,
- 1000 pcs per reel
- See S16XX series for low jitter performance

Frequency Range:	32 MHz to 125 MHz (S1903) as rated 80+ MHz to 125 MHz (S1950) as rated Up to 160MHz available, contact SaRonix for details
Frequency Stability:	±20, ±25, ±32, ±50 or ±100ppm over all conditions; calibration tolerance, operating temperature, rated input (supply) voltage change, *aging, load change, shock and vibration.
*Aging:	1 year @ 25°C average ambient operating temperature
Temperature Range:	
Operating:	0 to +70°C or -40 to +85°C
Storage:	-55 to +125°C
Supply Voltage:	5V ±5% or 3.3V ±10% (+7V absolute max)
Supply Current:	35mA typ, 50mA max @ 5V 35mA max @ 3.3V
Output:	
Symmetry:	45/55% max @ 50% V_{DD} or 1.5V, 0 to +70°C @ 5V 40/60% max @ 50% V_{DD} or 1.5V, -40 to +85°C @ 5V 45/55% max @ 50% V_{DD} @ 3.3V
Rise & Fall Times:	2ns max 20% to 80% V_{DD} 1.5ns max 0.5 to 2.5V (S1950 only)
Logic 0:	10% V_{DD} max for S1950 or 20% VDD max for S1903
Logic 1:	80% V_{DD} min
Load:	50Ω ACMOS @ 5V or 95Ω ACMOS @ 3.3V
Period Jitter RMS:	S1950: 20ps max 0 to +70°C 25ps max -40 to +85°C S1903: 14ps max, 32 to 72 MHz 20ps max, 72+ to 125MHz, 0 to +70°C 25ps max, 72+ to 125MHz, -40 to +85°C
Tri-State Control Characteristics:	
Output Oscillation(V_{IN}):	≥2.2V ro N/C
Output High Impedance (V_{IN}):	≤0.8V or GND
Disable Output Delay:	≤100ns
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, Conditions D
Resitance to Soldering Heat:	MIL-STD-202, Method 210, Condition I or J
Environmental:	
Gross Leak Test:	MIL-STD-883, Method 1014, Condition C
Fine Leak Test:	MIL-STD-883, Method 1014, Condition A2
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

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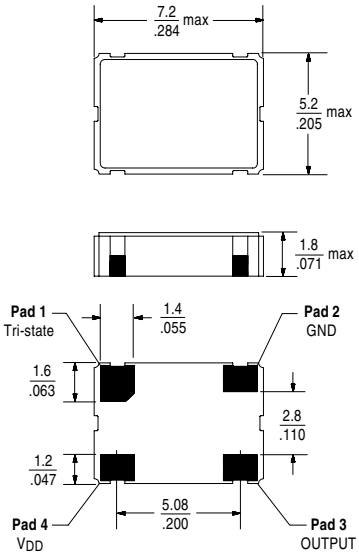
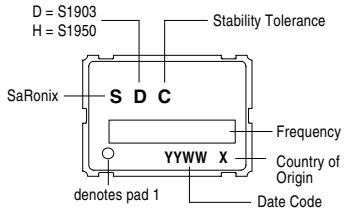
Package Details

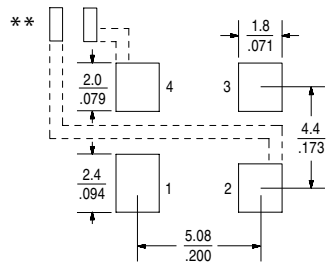


Marking Format*



*Exact location of items may vary

Recommended Land Pattern



**External high frequency power supply decoupling required.

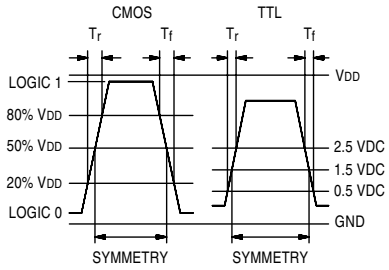
Scale: None (Dimensions in $\frac{mm}{inches}$)

Part Numbering Guide

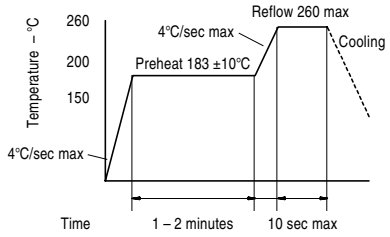
S 1903 B – 125.0000 (T)

- SaRonix
- Series
  - S1903 = 3.3V, 32 to 125 MHz
  - S1950 = 5V, 80+ to 125 MHz
- Stability Tolerance
  - AA = ±20ppm, 0 to +70°C
  - A = ±25ppm, 0 to +70°C
  - B = ±50ppm, 0 to +70°C
  - C = ±100ppm, 0 to +70°C (Not for new designs)
  - D = ±25ppm, -40 to +85°C
  - H = ±32ppm, -40 to +85°C
  - E = ±50ppm, -40 to +85°C
  - F = ±100ppm, -40 to +85°C
- Frequency
- (T) = Tape & Reel full reel increments only
- Blank = Bulk

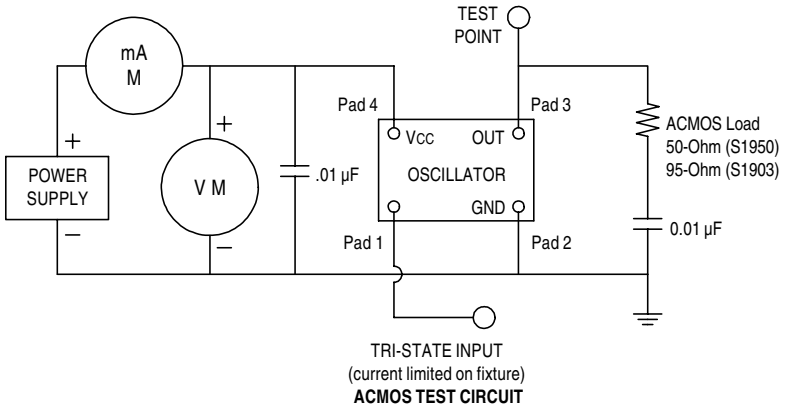
Output Waveform



Solder Reflow Guide



Test Circuit



ACMOS TEST CIRCUIT

All specifications are subject to change without notice.