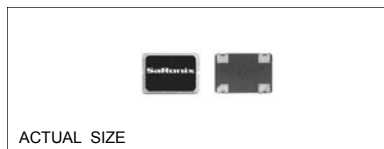


# Crystal Clock Oscillator

3.3V & 5V, AC MOS, TTL, SMD

## Technical Data

S1903 / S1950 Series



### 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

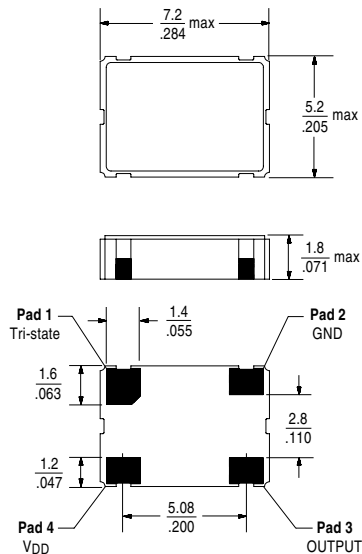
- Gigabit Ethernet - 125.0000 MHz
- Perfect for notebook and palmtop computers; portable applications; PCMCIA cards. Anywhere small size, low power, surface mountability are a priority.
- 1.8mm high SMD ceramic package
- 3.3V or 5V
- Tri-State standard
- CMOS, AC MOS & TTL compatible
- Available on tape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

<b>Frequency Range:</b>	32 MHz to 125 MHz (S1903) as rated 80+ MHz to 125 MHz (S1950) as rated Up to 160MHz available, contact SaRonix for details
<b>Frequency Stability:</b>	±20, ±25, ±32, ±50 or ±100ppm over all conditions; calibration tolerance, operating temperature, rated input (supply) voltage change, *aging, load change, shock and vibration.
<b>*Aging:</b>	1 year @ 25°C average ambient operating temperature
<b>Temperature Range:</b>	Operating: 0 to +70°C or -40 to +85°C Storage: -55 to +125°C
<b>Supply Voltage:</b>	5V ±5% or 3.3V ±10% (+7V absolute max)
<b>Supply Current:</b>	35mA typ, 50mA max @ 5V 35mA max @ 3.3V
<b>Output:</b>	<p>Symmetry: 45/55% max @ 50% V<sub>DD</sub> or 1.5V, 0 to +70°C @ 5V 40/60% max @ 50% V<sub>DD</sub> or 1.5V, -40 to +85°C @ 5V 45/55% max @ 50% V<sub>DD</sub> @ 3.3V</p> <p>Rise &amp; Fall Times: 2ns max 20% to 80% V<sub>DD</sub> 1.5ns max 0.5 to 2.5V (S1950 only) 10% V<sub>DD</sub> max for S1950 or 20% V<sub>DD</sub> max for S1903</p> <p>Logic 0: 80% V<sub>DD</sub> min</p> <p>Load: 50Ω AC MOS @ 5V or 95Ω AC MOS @ 3.3V</p> <p>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</p>
<b>Tri-State Control Characteristics:</b>	<p>Output Oscillation(V<sub>IN</sub>): ≥2.2V ro N/C</p> <p>Output High Impedance (V<sub>IN</sub>): ≤0.8V or GND</p> <p>Disable Output Delay: ≤100ns</p> <p>Internal Pullup Resistance: ≥50kΩ</p>
<b>Mechanical:</b>	<p>Shock: MIL-STD-883, Method 2002, Condition B</p> <p>Solderability: MIL-STD-883, Method 2003</p> <p>Vibration: MIL-STD-883, Method 2007, Condition A</p> <p>Solvent Resistance: MIL-STD-202, Method 215</p> <p>Terminal Strength: MIL-STD-883, Method 2004, Conditions D</p> <p>Resistance to Soldering Heat: MIL-STD-202, Method 210, Condition I or J</p>
<b>Environmental:</b>	<p>Gross Leak Test: MIL-STD-883, Method 1014, Condition C</p> <p>Fine Leak Test: MIL-STD-883, Method 1014, Condition A2</p> <p>Thermal Shock: MIL-STD-883, Method 1011, Condition A</p> <p>Moisture Resistance: MIL-STD-883, Method 1004</p>

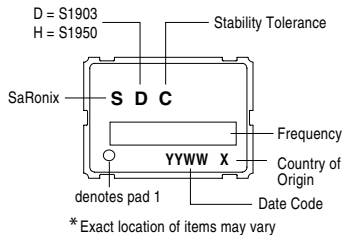
### Technical Data

### S1903 / S1950 Series

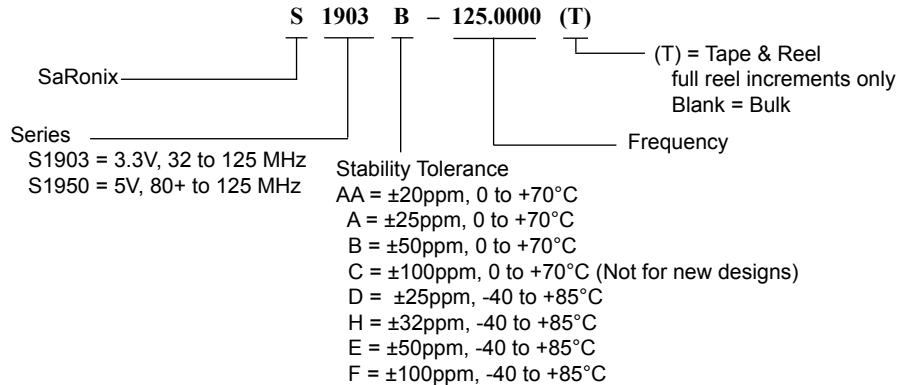
#### Package Details



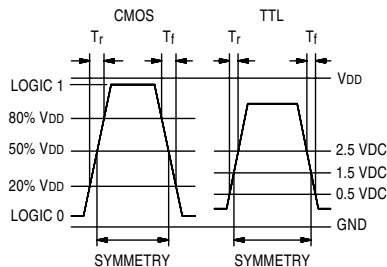
#### Marking Format\*



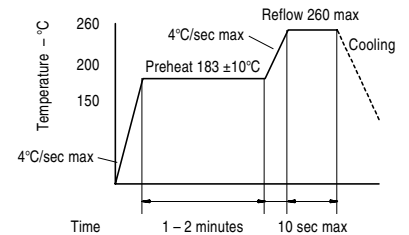
#### Part Numbering Guide



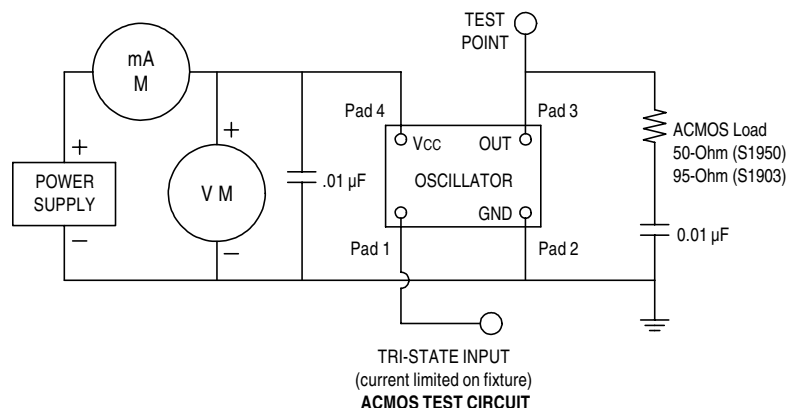
#### Output Waveform



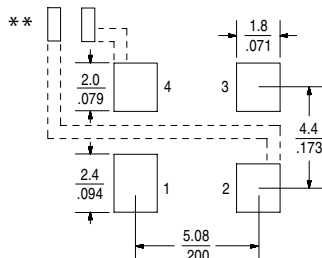
#### Solder Reflow Guide



#### Test Circuit



#### Recommended Land Pattern



\*\* External high frequency power supply decoupling required.

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

All specifications are subject to change without notice.