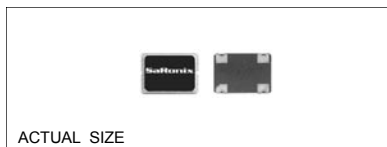


Crystal Clock Oscillator 3.3V & 5V, AC MOS, TTL, SMD

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

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% V _{DD} max for S1903
Logic 1:	80% V _{DD} min
Load:	50Ω AC MOS @ 5V or 95Ω AC MOS @ 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
Resistance to Soldering Heat:	MIL-STD-202, Method 210, Condition I or J

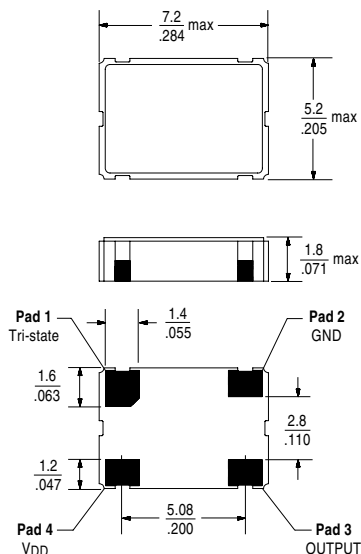
Environmental:

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

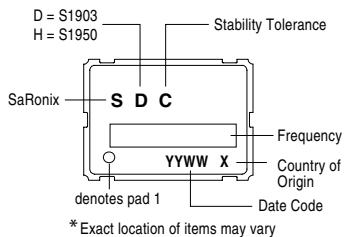
Technical Data

S1903 / S1950 Series

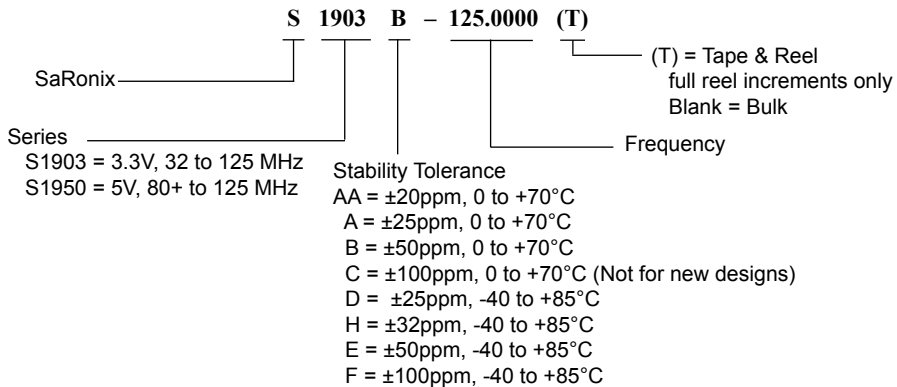
Package Details



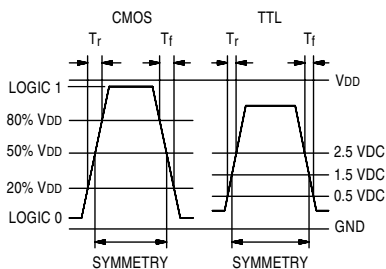
Marking Format*



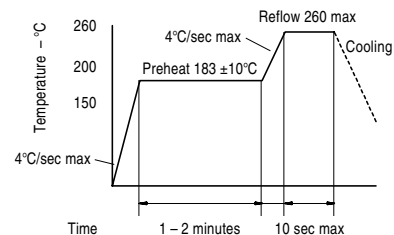
Part Numbering Guide



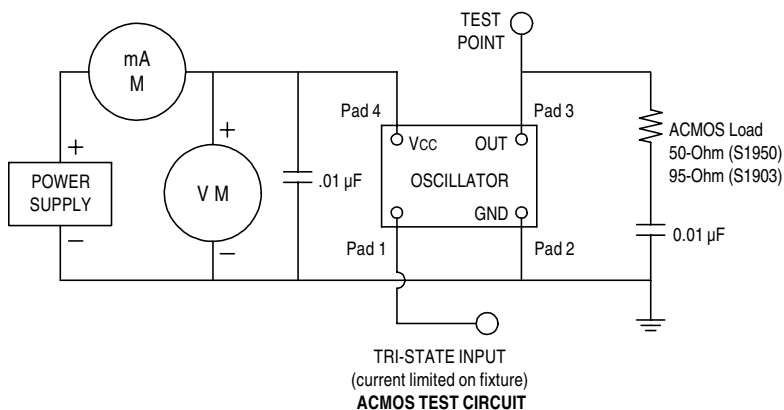
Output Waveform



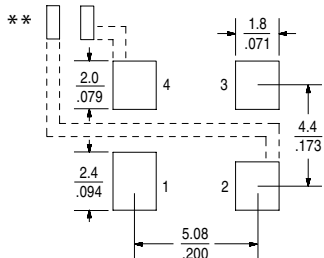
Solder Reflow Guide



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.

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