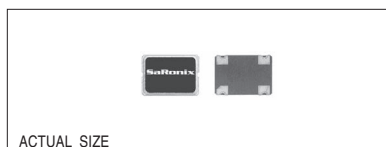


Technical Data

S1903 / S1950 Series



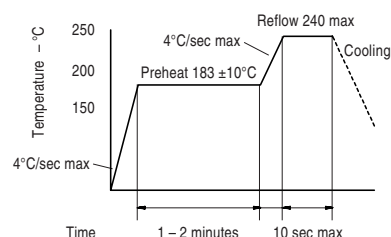
Description

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

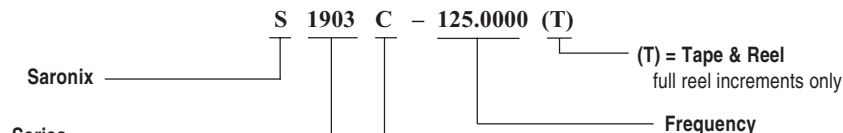
- Fibre Channel - 106.2500 MHz
- Gigabit Ethernet - 125.0000 MHz
- Perfect for notebook and palmtop computers; portable applications; PCMCIA cards. Anywhere small size, low power, surface mountability are a priority.
- 1.8mm high SMD ceramic package
- 3.3V or 5V
- Tri-State standard
- CMOS, AC MOS & TTL compatible
- Available on tape & reel; 16mm tape, 1000 pcs per reel

Solder Reflow Guide



Frequency Range:	32 MHz to 125 MHz (S1903) 80+ MHz to 125 MHz (S1950)
Frequency Stability:	±20, ±25, ±32, ±50 or ±100ppm over all conditions; calibration tolerance, operating temperature, input voltage change, load change, aging(1 year @ 25°C average ambient operating temperature), shock and vibration.
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%
Supply Current:	35mA typ, 50mA max @ 5V 35mA max @ 3.3V
Output:	Symmetry: 45/55% max @ 50% VDD or 1.5V, 0 to +70°C @ 5V 40/60% max @ 50% VDD or 1.5V, -40 to +85°C @ 5V 45/55% max @ 50% VDD @ 3.3V Rise & Fall Times: 2ns max 20% to 80% VDD 1.5ns max 0.5 to 2.5V (S1950 only) Logic 0: 10% VDD max for S1950 or 20% VDD max for S1903 Logic 1: 80% VDD 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
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

Part Numbering Guide



S1903 = 3.3V, 32 to 125 MHz
 S1950 = 5V, 80+ to 125 MHz

Stability Tolerance

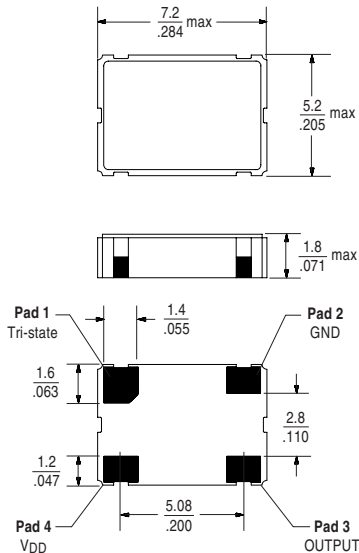
AA = ±20ppm, 0 to +70°C
 A = ±25ppm, 0 to +70°C
 B = ±50ppm, 0 to +70°C
 C = ±100ppm, 0 to +70°C
 D = ±25ppm, -40 to +85°C
 H = ±32ppm, -40 to +85°C
 E = ±50ppm, -40 to +85°C
 F = ±100ppm, -40 to +85°C

DS-187 REV D

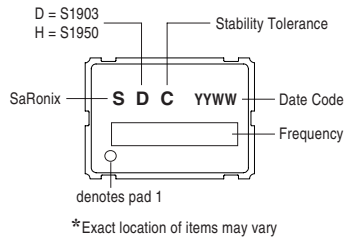
Technical Data

S1903 / S1950 Series

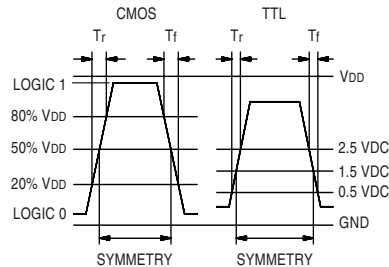
Package Details



Marking Format*



Output Waveform

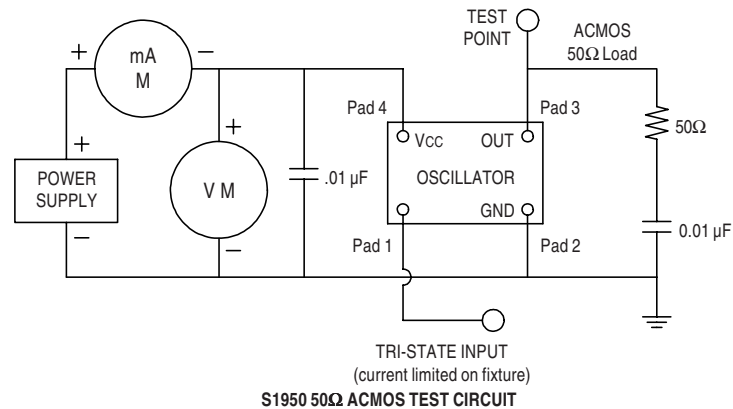


Tri-State Logic Table

Pad 1 Input	Pad 3 Output
Logic 1 or NC	Oscillation
Logic 0 or GND	High Impedance

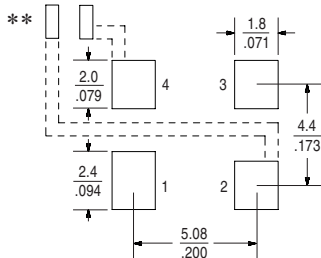
Required Input Levels on Pad 1:
Logic 1 = 2.2V min
Logic 0 = 0.8V max

Test Circuits



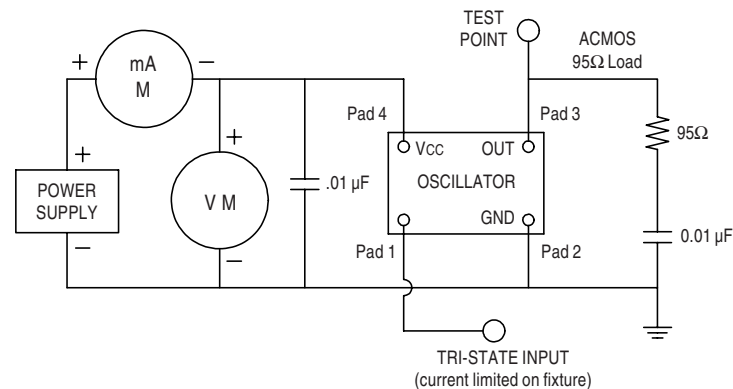
S1950 50Ω AC MOS TEST CIRCUIT

Recommended Land Pattern



** External high frequency power supply decoupling required.

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



S1903 95Ω AC MOS TEST CIRCUIT

All specifications are subject to change without notice.