

Crystal Clock Oscillator

3.3 & 5V, HCMOS/LVCMOS, TTL

Technical Data

S1800 / S1803 / S1850 Series





Description

The 5V S1800, S1850 and 3.3V S1803 are crystal-controlled, low-current oscillators providing precise rise and fall times to drive high speed CMOS and TTL loads. The sub-miniature, very low profile leadless ceramic packages have gold-plated contact pads, ideal for today's pick-and-place SMT environments. The S1850 is a high output load version available to 80 MHz.

Applications & Features

- Sub-miniature, 1.1 mm high ceramic package ideal for SMT applications
- 10µA max standby mode on S1800 and S1803
- Tight Stability, low power, and low profile ideal for 802.11 applications
- Available as 3.3V and 5V versions LVCMOS, HCMOS, TTL compatible
- Perfect for PC's; notebook, palmtop computers; portable applications; PCMCIA cards; disc drives. Anywhere small size, low power, surface mountability are a priority
- Available on tape & reel; 16mm tape, 1000pcs per reel

Frequency Range:		1.5440 MHz to 80 MHz
Frequency Stability:	*Aging	±20, ±25, ±50, ±100 ppm over all conditions; calibration, tolerance, operating temperature, input voltage change, load change, shock and vibration and aging* (1 Year @ 25°C average ambient temperature)

Temperature Range:				
Operating: Storage:	-10 to +70°C or -40 to +85°C -55 to +125°C +5.0V ±10%, 3.3V ±10%			
Supply Voltage:				
Supply Current:	S1800 25mA max	S1803	S1850 27mA max	

oupper outside	51000	51005	51050	
1.544 to 32 MHz:	25mA max	15mA max	27mA max	
32+ to 50 MHz:	35mA max	25mA max	35mA max	
50+ to 80 MHz:	n/a	40mA max	75mA max	
Output disabled (Standby):	10μA max	10μA max	n/a	
Output:				
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Symmetry: Rise & Fall Times:	45/55% max @ 50% V _{DD} , 40/60% max @ 1.5V on S1800 & 1850 S1800: 10ns max, 20% to 80% V _{DD}
Rise & Fall Times.	S1803: 7ns max, (to 50MHz), 5ns (>50 MHz), 20% to 80% V _{DD}
	S1850: 7ns max, 20% to 80% V _{DD}
Logic 0:	10% V _{DD} max

Logic 1: 90% V_{DD} min

Load: \$1800/\$\$1803: 15pF max, 10 LSTTL

\$1850: 50 pF max 1.544 to 50 MHz, 10 TTL

30 pF max 50+ to 70 MHz, 10 TTL

20 pF max 70+ to 80 MHz (HCMOS), 10 TTL

Accumulated Jitter: 5ps RMS (1-sigma) max in 20,000 adjacent periods Phase Jitter: 1.5ps RMS (1-sigma) max in $10kHz \sim 20MHz$ freq. band 50ps max peak-to-peak in 100,000 random periods

Mechanical:

Shock: MIL-STD-883, Method 2002, Condition B
Solderability: MIL-STD-883, Method 2003
Wibration: MIL-STD-883, Method 2007, Condition A
MIL-STD-202, Method 215
Terminal Strength: MIL-STD-202, Method 2004, Condition D
Resistance 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







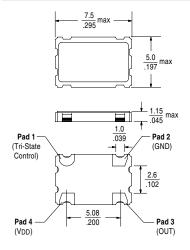
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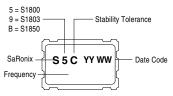
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Package Details

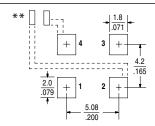


Marking Format*



*Exact location of items may vary

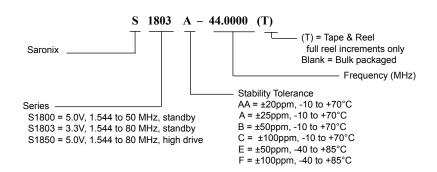
Recommended Land Pattern



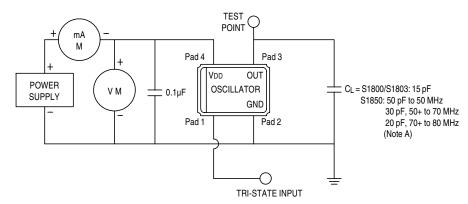
** External high frequency power supply decoupling required.

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

Part Numbering Guide



Test Circut

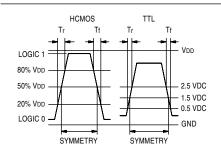


Note A: CL includes probe and fixture capacitance

Tri-State Control Characteristics (low power stand-by for S1800/S1803)

	S1850	S1800/S1803
Output Oscillation (Vin):	\geq 2.2V or N/C	\geq 2.2V or N/C
Output High Impdeance (V _{IN}):	\leq 0.8V or GND	\leq 0.8V or GND
Disable Output Delay:	≤100ns	≤100ns (to Stand-by mode)
Enable Output Delay:	≤100ns	≤10ms (from Stand-by mode)
Internal Pullup Resistance:	$\geq 50 \mathrm{k}\Omega$	$\geq 50 \mathrm{k}\Omega$

Output Waveform



Solder Reflow Guide

