SaRonix

Crystal Clock Oscillator 3.3 & 5V, HCMOS, TTL, SMD

Technical Data S1800 / S1803 / S1850 Series

ACTUAL SIZE

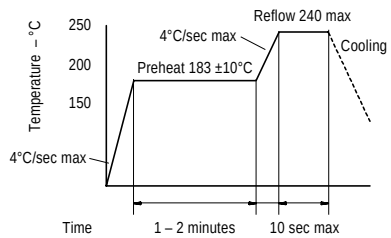
Description

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
- Available as 3.3V and 5V versions
- CMOS, 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

Solder Reflow Guide



Frequency Range:	1.5440 MHz to 80 MHz
Frequency Stability:	±25, ±50, ±100 ppm over all conditions; calibration, tolerance, operating temperature, input voltage change, load change, aging (1 Year @ 25°C average ambient temperature), shock and vibration.
Temperature Range:	
Operating:	-10 to +70°C or -40 to +85°C
Storage:	-55 to +125°C
Supply Voltage:	+5.0V ±10%, 3.3V ±10%

Supply Current:	S1800	S1803	S1850
1.544 to 32 MHz:	25mA max	15mA max	27mA max
32+ to 50 MHz:	35mA max	18mA max	35mA max
50+ to 80 MHz:		25mA max	75mA max
1.544 to 50 MHz (standby):	10µA max		
1.544 to 80 MHz (standby):		10µA max	

Standby Current:	10µA max on S1800 and S1803 only
Output:	
Symmetry:	45/55% max @ 50% V_{DD}, 40/60% max @ 1.5V on S1800 & 1850
Rise & Fall Times:	7ns max (10ns max: S1800) 20% to 80% V_{DD}, 1.544 to 50 MHz 5ns max, 50+ to 80 MHz (S1803 & S1850 only)
Logic 0:	10% V_{DD} max
Logic 1:	90% V_{DD} min
Load:	S1800/S1803: 15 pF max, 10 LSTTL S1850: 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
Jitter:	8ps max RMS period jitter
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, Condition 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

S 1803 C – 60.0000 (T)

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Series
S1800 = 5.0V, 1.544 to 50 MHz, 15 pF, standby
S1803 = 3.3V, 1.544 to 80 MHz, 15 pF, standby
S1850 = 5.0V, 1.544 to 80 MHz, 50 pF high drive

Stability Tolerance
A = ±25 ppm, -10 to +70°C
B = ±50 ppm, -10 to +70°C
C = ±100 ppm, -10 to +70°C
E = ±50 ppm, -40 to +85°C
F = ±100 ppm, -40 to +85°C

Frequency (MHz)

(T) = Tape & Reel
full reel increments only

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Technical Data

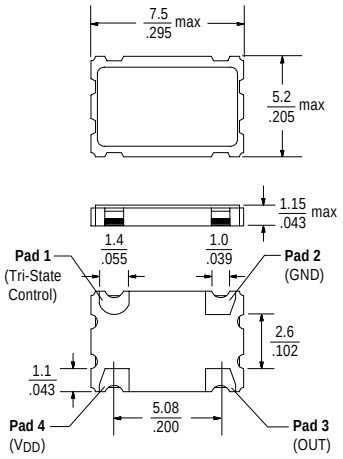
S1800 / S1803 / S1850 Series

Tri-State Logic Table

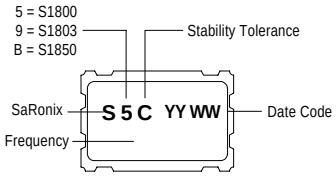
Pad 1 Input	Pad 3 Output
Logic 1 or NC	Oscillation
Logic 0 or GND	High Impedance

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

Package Details

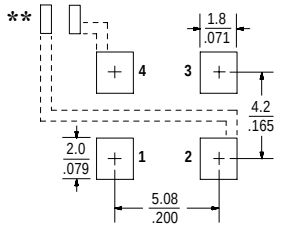


Marking Format*



*Exact location of items may vary

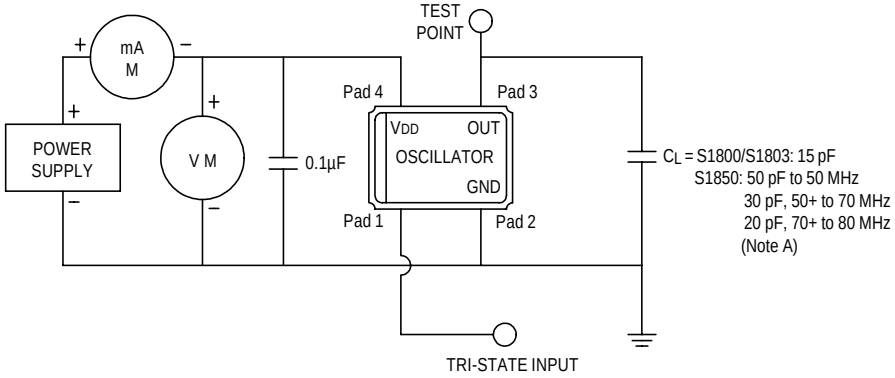
Recommended Land Pattern



**External high frequency power supply decoupling required.

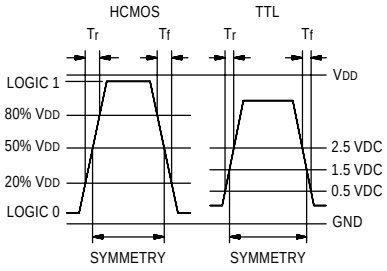
Scale: None (Dimensions in $\frac{mm}{inches}$)

Test Circuit



Note A: CL includes probe and fixture capacitance

Output Waveform



All specifications are subject to change without notice.

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