SaRonix

PrO™ Programmable Clock Oscillator 5V, HCMOS, TTL, SMD

Technical Data

PrO™ S8002 Ceramic Series

ACTUAL SIZE

Description

A crystal controlled, HCMOS/TTL compatible oscillator with an internal programming feature that allows SaRonix to supply any frequency in the 1 to 125MHz range. This technology significantly reduces lead-times from weeks to days. The parts exhibit the same low power, precise rise and fall times, tight symmetry and HCMOS/TTL compatible drive capability as conventional SaRonix SMD oscillators. The parts feature tri-state enable or standby control on pad 1. The packages are miniature ceramic SMD, measuring 5 x 7 x 1.8 mm.

Applications & Features

- Quick delivery of any frequency between 1 and 125MHz.
- Suited for use with new HCMOS MPUs and DSPs.
- Tri-State Output or Standby Mode
- High Drive HCMOS capability
- Stabilities of ±25, ±50, ±100ppm
- 3.0 & 3.3V versions are available, see separate data sheet
- Available on tape & reel; 16mm tape, 500pcs per reel

Frequency Range:	1MHz to 125MHz			
Frequency Stability:	±25*, ±50 or ±100 ppm over all conditions: calibration tolerance, operating temperature, input voltage change, load change, 30 day aging, shock and vibration.			
Temperature Range:				
Operating:	-20 to +70°C or -40 to +85°C			
Storage:	-55 to +125°C			
Supply Voltage:				
Recommended Operating:	5V ±10%			
Supply Current:				
5TTL +15pF Load:	40mA from 1 to 40MHz, 50mA from 40+ to 125MHz			
30pF/15pF Load:	40mA from 1 to 50MHz, 50mA from 50+ to 125MHz			
Standby Current:	50µA max (see part number builder, use option S)			
Output Drive:				
Symmetry:	@ 50% V_{DD} HCMOS 1 to 50MHz	@ 50% V_{DD} HCMOS 50+ to 125MHz	@ 1.5V TTL 1 to 27MHz	@ 1.5V TTL 27+ to 125MHz
-20 to +70°C:	45/55%	40/60%	45/55%	40/60%
-40 to +85°C:	40/60%	40/60%	40/60%	40/60%
Rise & Fall Times:	5ns max 20% to 80% V_{DD}, 0.8 to 2V (TTL)			
Logic 0:	10% V_{DD} max, 0.5V max (TTL)			
Logic 1:	90% V_{DD} min, 2.5V min (TTL)			
Load:	30pF max 1 to 50MHz, 15pF max 50+ to 125MHz or 5TTL +15pF 1 to 125MHz			
Period Jitter RMS:	17ps typ, 42ps max 33+ to 125MHz 33ps typ, 100ps max 1 to 33MHz			
Mechanical:				
Shock:	MIL-STD-883, Method 2002, Condition B			
Solderability:	MIL-STD-883, Method 2003			
Terminal Strength:	MIL-STD-883, Method 2004, Conditions D			
Vibration:	MIL-STD-883, Method 2007, Condition A			
Solvent Resistance:	MIL-STD-202, Method 215			
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			

Part Numbering Guide

S8002 C S H B – 106.2500 (T)

Series
SaRonix Programmable Oscillator

Package
C = Ceramic SMD

P = Output Enable
S = Standby

Type
H = 5V, CMOS
T = 5V, TTL

Stability Tolerance
*A = ±25ppm, -20 to +70°C
B = ±50ppm, -20 to +70°C
C= ±100ppm, -20 to +70°C
E = ±50ppm, -40 to +85°C
F = ±100ppm, -40 to +85°C

Frequency

Tape & Reel
full reel increments only (500pcs)

*Please contact SaRonix for available frequencies @ ±25ppm.

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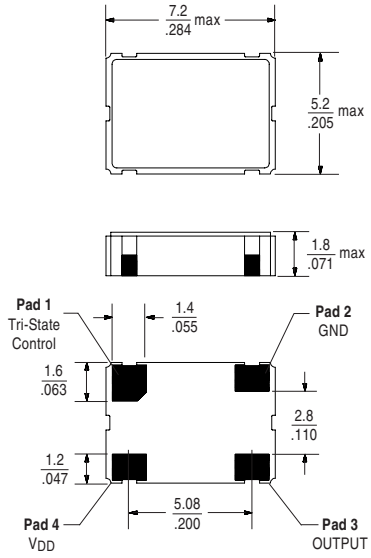
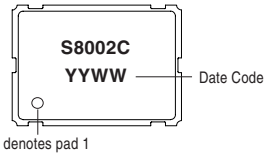
PrO™ S8002 Ceramic Series

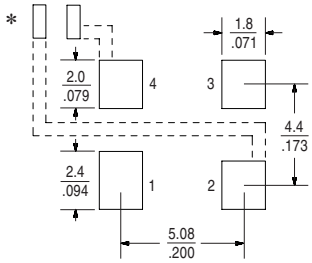
Package Details



Marking Format (Exact location of items may vary)



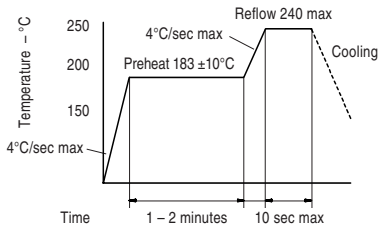
Recommended Land Pattern



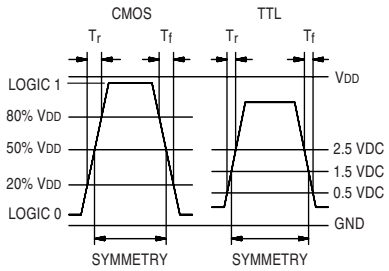
*External high frequency power supply decoupling required.

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

Solder Reflow Guide



Output Waveform



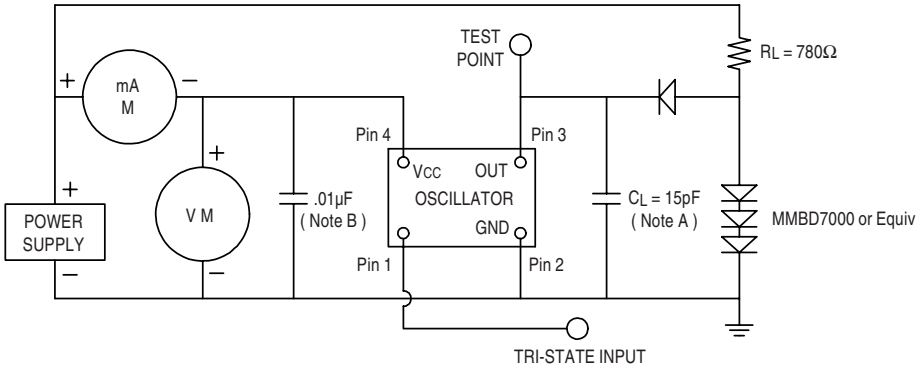
Tri-State or Standby Logic Table

Pin 1 Input	Pin 3 Output
Logic 1 or NC	Oscillation
Logic 0 or GND	High Impedance/Standby

Required Input Levels on Pin 1:
Logic 1 = 2.0V min
Logic 0 = 0.8V max

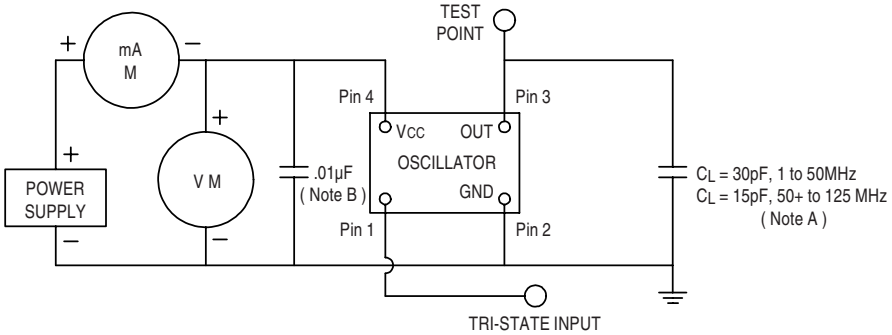
Control Input: Disable Output Delay: 100ns max

Test Circuits



NOTE: A. C_L includes probe and fixture capacitance.
NOTE: B. An external .01µF bypass capacitor close to package ground and V_{CC} pin is required

TTL (Used at SaRonix)



NOTE: A. C_L includes probe and fixture capacitance.
NOTE: B. An external .01µF bypass capacitor close to package ground and V_{CC} pin is required

HCMOS (Used at SaRonix)

All specifications are subject to change without notice.

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