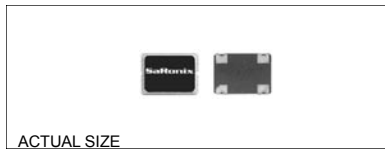


Technical Data

PrO™ S8002 Ceramic Series



Description

A crystal controlled, HCMOS/TTL compatible oscillator with an internal programming feature that allows SaRonix to supply most frequencies 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

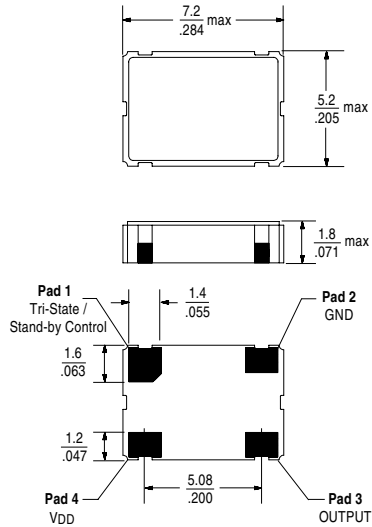
- Quick delivery of any frequency between 1 and 125MHz.
- Suited for use with new HCMOS MPUs and DSPs.
- Tri-State Output or Standby Mode
- High Drive HCMOS capability
- Stabilities of ± 25 , ± 50 , ± 100 ppm
- 3.0 & 3.3V versions are available, see separate data sheet
- Available on tape & reel; 16mm tape, 500pcs per reel
- See S16xx series for low jitter performance

Frequency Range:	1MHz to 125MHz
Frequency Stability:	$\pm 25^{**}$, ± 50 or ± 100 ppm over all conditions: calibration tolerance, operating temperature, rated input (supply) voltage change, load change, *aging, shock and vibration.
*Aging:	30 days
** ± 25 ppm not available for all frequencies	
Temperature Range:	
Operating:	-20 to +70°C or -40 to +85°C
Storage:	-55 to +125°C
Supply Voltage:	
Recommended Operating:	5V $\pm 10\%$ (+7V absolute max)
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
Stand-by:	50 μ A max (as selected)
Output Drive:	
Symmetry:	45/55% measured @ 50% V _{DD} (1 to 50 MHz, -20 to +70°C, HCMOS) 45/55% measured @ 1.5V (1 to 27 MHz, -20 to +70°C, TTL) 40/60% measured @ 50% V _{DD} (HCMOS) or 1.5V (TTL) all other conditions.
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
Output Enable (Tri-state Control) Function:	
Output Oscillation:	$2.0V \leq V_{IN} \leq (V_{DD} + 0.5V)$, or N/C
Output High Impedance:	$-0.5V \leq V_{IN} \leq 0.8V$, or GND
Disable Output Delay:	≤ 100 ns
Internal Pullup Delay:	$\geq 15k\Omega$
Low-Power Stand-by Function:	
Output Oscillation:	$2.0V \leq V_{IN} \leq (V_{DD} + 0.5V)$, or N/C
Stand-by Mode:	$-0.5V \leq V_{IN} \leq 0.8V$, or GND
Control Input Current:	$\leq 10\mu A$
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 1 or J
Environmental:	
Thermal Shock:	MIL-STD-883C, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883C, Method 1004

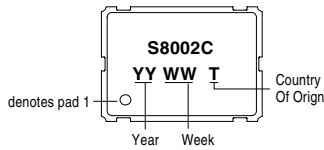
Technical Data

PrO™ S8002 Ceramic Series

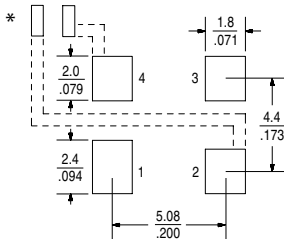
Package Details



Marking Format (Exact location of items may vary)



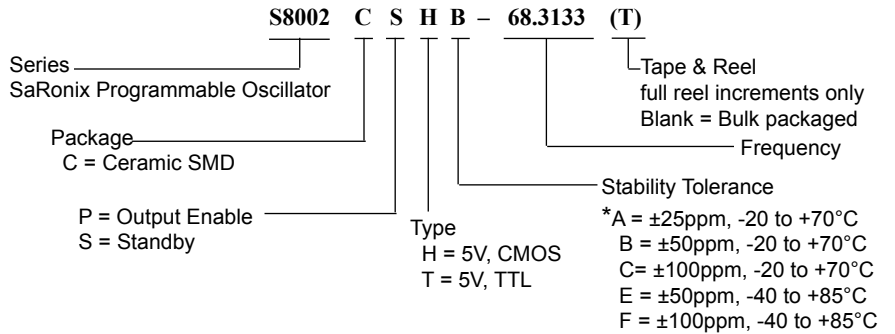
Recommended Land Pattern



* External high frequency power supply decoupling required.

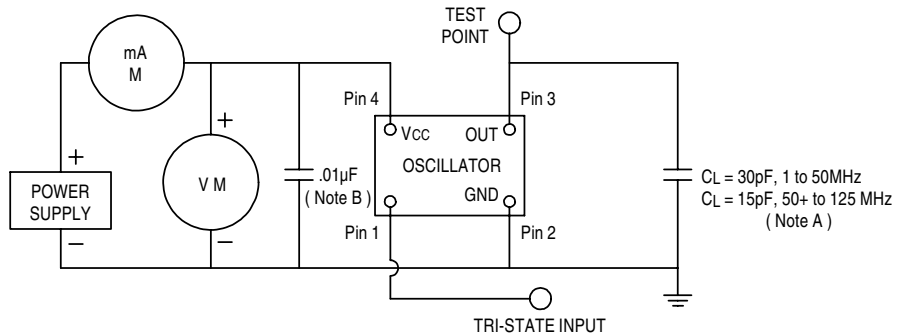
Scale: None (Dimensions in $\frac{\text{mm}}{\text{inches}}$)

Part Numbering Guide



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

Test Circuits

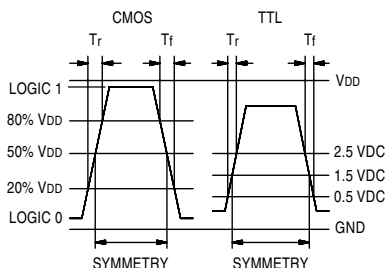


NOTE: A. CL includes probe and fixture capacitance.

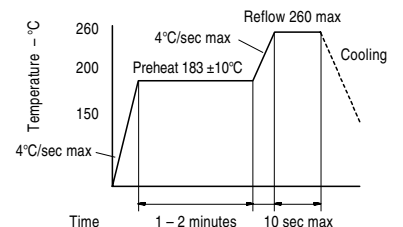
NOTE: B. An external .01µF bypass capacitor close to package ground and Vcc pin is required

HCMOS (Used at SaRonix)

Output Waveform



Solder Reflow Guide



All specifications are subject to change without notice.