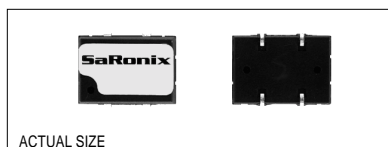


# SaRonix

## Pro™ Programmable Clock Oscillator 3.3 & 3.0V, HCMOS, SMD

### Technical Data

### Pro™ S8002 Plastic Series



#### Description

A crystal controlled, HCMOS/TTL compatible oscillator with an internal programming feature that allows SaRonix to supply any frequency in the 1 to 90MHz range. This technology significantly reduces lead-times from weeks to days. The parts are built and stocked un-programmed then programmed by SaRonix to the frequency required by the customer before final test and marking. The parts exhibit the same low power, precise rise and fall times, tight symmetry and HCMOS drive capability as conventional SaRonix SMD oscillators. The parts feature tri-state enable or standby control on pin 1. The packages are fully compatible with standard SO-J-20 footprints.

#### Applications & Features

- Quick delivery - days instead of weeks for any frequency - standard or not - between 1 and 90MHz.
- Suited for use with new HCMOS MPU's.
- Tri-State output or standby mode
- High Drive HCMOS capability
- Stabilities of  $\pm 25$ ,  $\pm 50$ ,  $\pm 100$ ppm
- EIA standard SO-J-20 footprint
- Fully compatible with the Epson SG-8002JA Series configurations.
- Other SaRonix products with compatible electrical and mechanical specifications are available, please see data sheets for the ST410H or NTH/NTT H.
- Available on tape & reel; 24mm tape, 1000pcs per reel

<b>Frequency Range:</b>	1MHz to 90MHz		
<b>Frequency Stability:</b>	$\pm 25^*$ , $\pm 50$ or $\pm 100$ ppm over all conditions: calibration tolerance, operating temperature, input voltage change, load change, aging, shock and vibration.		
<b>Temperature Range:</b>	Operating: -20 to +70°C or -40 to +85°C Storage: -55 to +125°C		
<b>Supply Voltage:</b>	Recommended Operating: 3.3V $\pm 10\%$ or 3.0V $\pm 10\%$ (1 to 50MHz only)		
<b>Supply Current:</b>	25mA from 1 to 50MHz, 30mA from 50+ to 90MHz		
<b>Standby Current:</b>	50 $\mu$ A max (use option S, see part number builder)		
<b>Output Drive:</b>	@ 50% VDD	@ 50% VDD	@ 50% VDD
Symmetry:	HCMOS (3.3V) 1 to 50MHz	HCMOS (3.3V) 50+ to 90MHz	HCMOS (3.0V) 1 to 50MHz
-20 to +70°C:	45/55%	40/60%	40/60%
-40 to +85°C:	40/60%	40/60%	40/60%
Rise & Fall Times:	5ns max 20% to 80% VDD		
Logic 0:	0.4V max		
Logic 1:	VDD -0.4V min		
Load:	30pF max 1 to 50MHz, 15pF max 50+ to 90MHz @ 3.3V 15pF max @ 3.0V		
Period Jitter RMS:	42ps max 33+ to 90 MHz 92ps max 5+ to 33 MHz 167ps max 1 to 5 MHz		

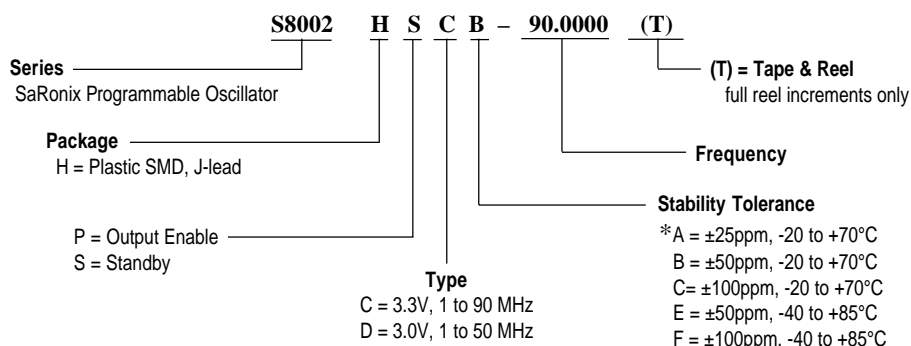
#### Mechanical:

Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Terminal Strength:	MIL-STD-883, Method 2004, Condition B2
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



\* $\pm 25$ ppm is only available at certain frequencies, please contact SaRonix

Example PN: S8002HSCB - 90.0000

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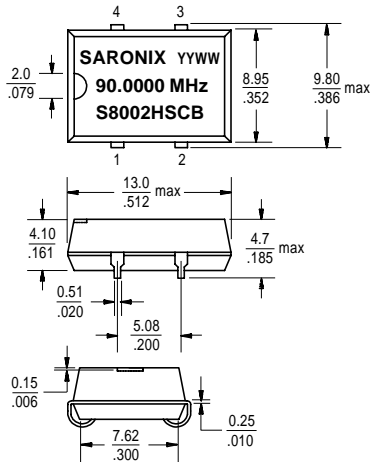
# SaRonix

## PrO™ Programmable Clock Oscillator 3.3 & 3.0V, HCMOS, SMD

### Technical Data

### PrO™ S8002 Plastic Series

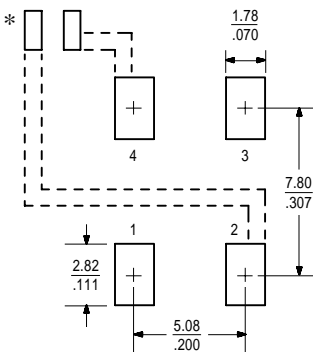
#### Package Details, Type H



#### Pin Function:

Pin 1: Tri-State Control    Pin 3: Output  
Pin 2: GND                    Pin 4: VDD

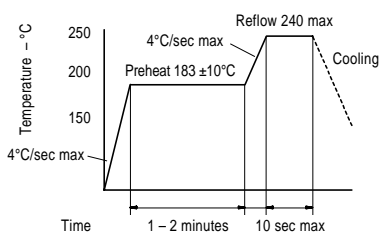
#### Recommended Land Pattern



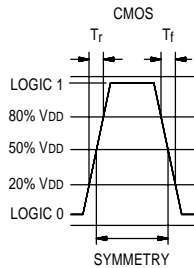
\*External high frequency power supply decoupling required.

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

#### Solder Reflow Guide



#### Output Waveform



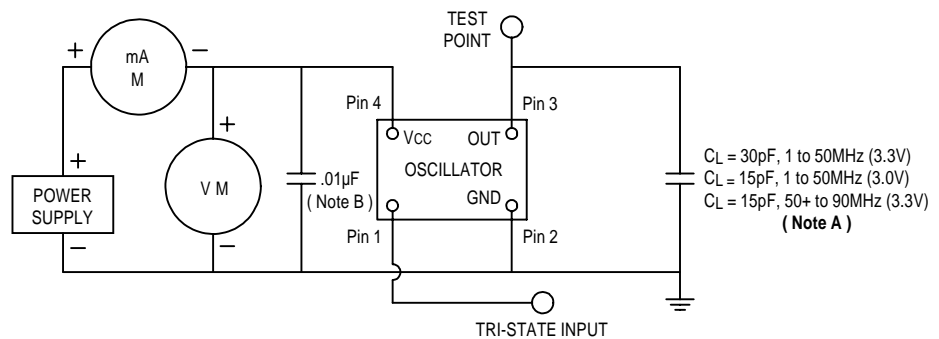
#### Tri-State or Standby Logic Table

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 = 0.7VDD min  
Logic 0 = 0.2VDD max

#### Test Circuits



NOTE: A.  $C_L$  includes probe and fixture capacitance.  
NOTE: B. An external  $.01\mu\text{F}$  bypass capacitor close to package ground and VCC pin is required

#### HCMOS TEST CIRCUIT, 3.3V OPERATION

All specifications are subject to change without notice.

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