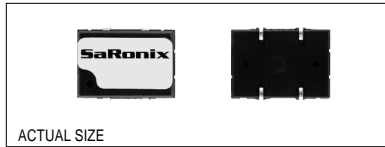


### Technical Data

### PrO™ S8002 Plastic Series



#### Description

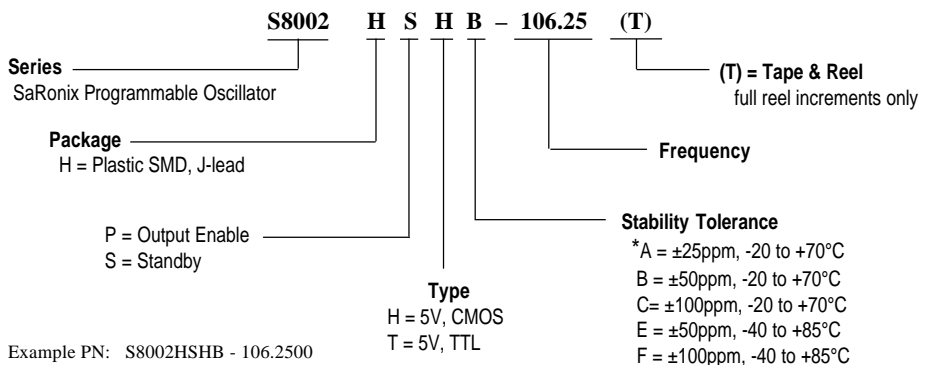
A crystal controlled, HCMOS/TTL compatible oscillator with an internal programming feature that allows SaRonix to supply any frequency in the 1 to 125MHz range. This technology significantly reduces lead-times from weeks to days. The parts are built and stocked un-programmed then programmed by SaRonix 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/TTL compatible 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 125MHz.
- 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 125MHz			
<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: +5V $\pm 10\%$			
<b>Supply Current:</b>	10TTL/5TTL Load: 40mA from 1 to 40MHz, 50mA from 40+ to 125MHz 50pF/20pF Load: 40mA from 1 to 50MHz, 50mA from 50+ to 125MHz			
<b>Standby Current:</b>	50 $\mu$ A max (use option S, see part number builder)			
<b>Output Drive:</b>	@ 50% V <sub>DD</sub>	@ 50% V <sub>DD</sub>	@ 1.5V	@ 1.5V
Symmetry:	HCMOS	HCMOS	TTL	TTL
	1 to 50MHz	50+ to 125MHz	1 to 27MHz	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 <sub>DD</sub> , 0.8 to 2V (TTL)			
Logic 0:	10% V <sub>DD</sub> max, 0.5V max (TTL)			
Logic 1:	90% V <sub>DD</sub> min, 2.5V min (TTL)			
Load:	50pF max 1 to 50MHz, 20pF max 50+ to 125MHz or 10TTL 1 to 40MHz, 5TTL 40+ to 125MHz			
Period Jitter RMS:	40ps max 33+ to 125MHz 100ps max 1 to 33MHz			
<b>Mechanical:</b>	Shock: MIL-STD-883, Method 2002, Condition B Solderability: MIL-STD-883, Method 2003 Terminal Strength: MIL-STD-883, Method 2004, Conditions 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			
<b>Environmental:</b>	Thermal Shock: MIL-STD-883, Method 1011, Condition A Moisture Resistance: MIL-STD-883, Method 1004			

#### Part Numbering Guide



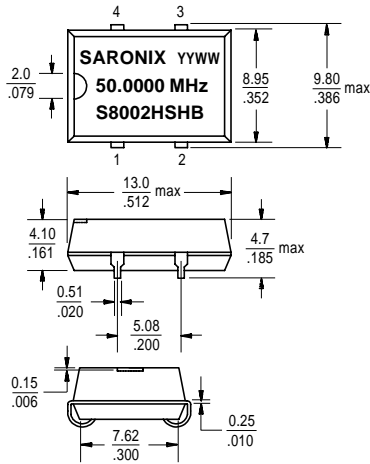
\* $\pm 25$ ppm is only available at certain frequencies, please contact SaRonix.

DS-186 REV C

### Technical Data

PrO™ S8002 Plastic Series

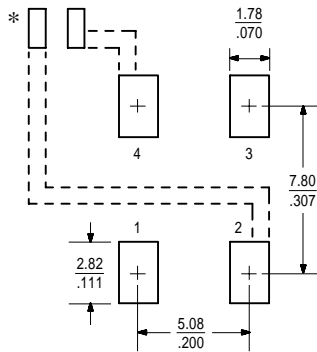
#### Package Details, Type H



#### Pin Function:

Pin 1: Tri-State Control Pin 3: Output  
Pin 2: GND Pin 4: +5 VDC

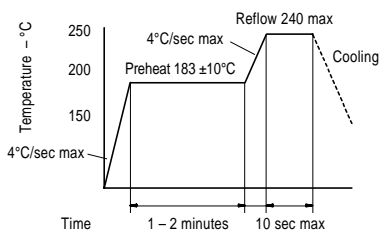
#### Recommended Land Pattern



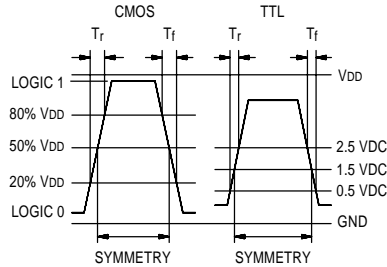
\*External high frequency power supply decoupling required.

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

#### Solder Reflow Guide



#### Output Waveform



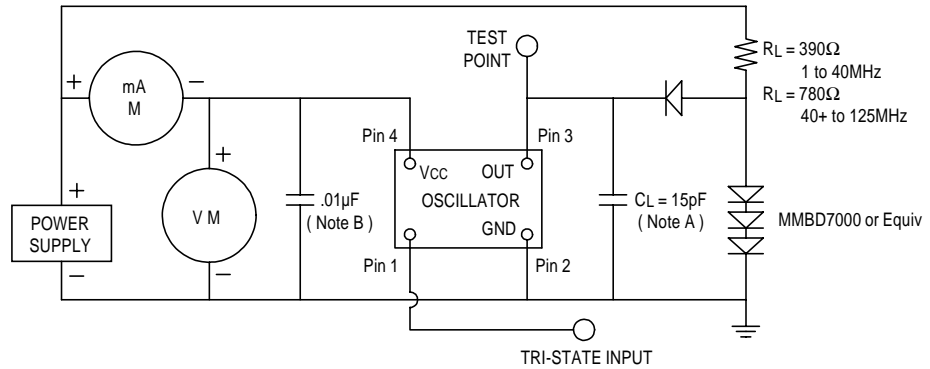
#### Tri-State or Standby Logic Table

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

#### Required Input Levels on Pin 1:

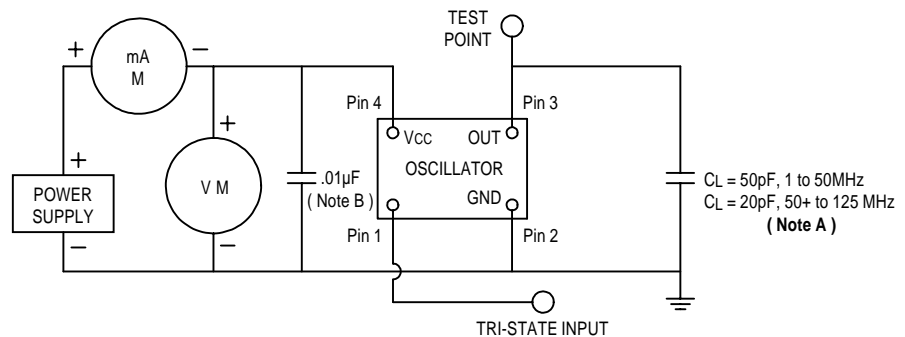
Logic 1 = 2.0V min  
Logic 0 = 0.8V max

#### 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

FIGURE 1 - TTL TEST CIRCUIT, 5V OPERATION



NOTE: A. CL includes probe and fixture capacitance.  
NOTE: B. An external .01µF bypass capacitor close to package ground and VCC pin is required

FIGURE 2 - HCMOS TEST CIRCUIT, 5V OPERATION

All specifications are subject to change without notice.

DS-186 REV C