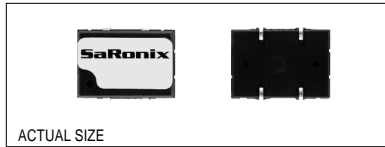


SaRonix

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

Technical Data

PrO™ S8002 Plastic Series



Description

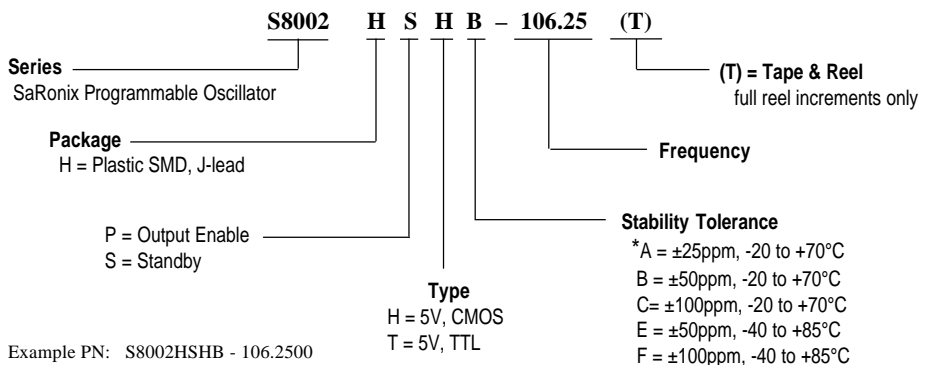
A crystal controlled, HCMOS/TTL compatible oscillator with an internal programming feature that allows SaRonix to supply any frequency in the 1 to 125MHz range. This technology significantly reduces lead-times from weeks to days. The parts are built and stocked un-programmed then programmed by SaRonix 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 ± 25 , ± 50 , ± 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

Frequency Range:	1MHz to 125MHz			
Frequency Stability:	$\pm 25^*$, ± 50 or ± 100 ppm over all conditions: calibration tolerance, operating temperature, input voltage change, load change, 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 $\pm 10\%$			
Supply Current:	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			
Standby Current:	50 μ A max (use option S, see part number builder)			
Output Drive:	@ 50% V _{DD}	@ 50% V _{DD}	@ 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 _{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:	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			
Mechanical:	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			
Environmental:	Thermal Shock: MIL-STD-883, Method 1011, Condition A Moisture Resistance: MIL-STD-883, Method 1004			

Part Numbering Guide



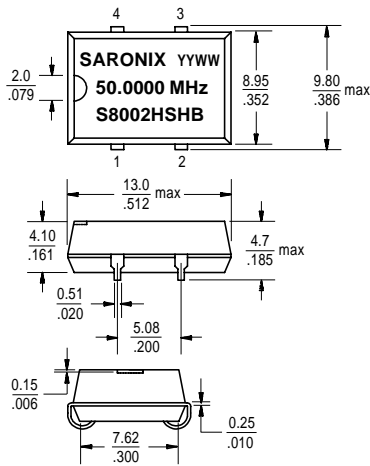
* ± 25 ppm is only available at certain frequencies, please contact SaRonix.

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Technical Data

PrO™ S8002 Plastic Series

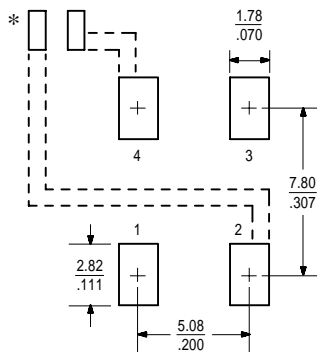
Package Details, Type H



Pin Function:

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

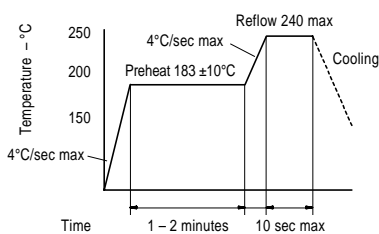
Recommended Land Pattern



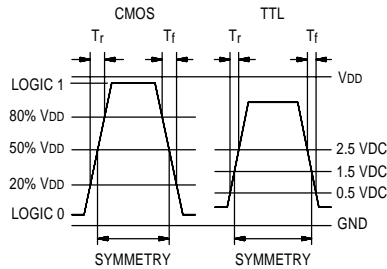
*External high frequency power supply decoupling required.

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

Solder Reflow Guide



Output Waveform



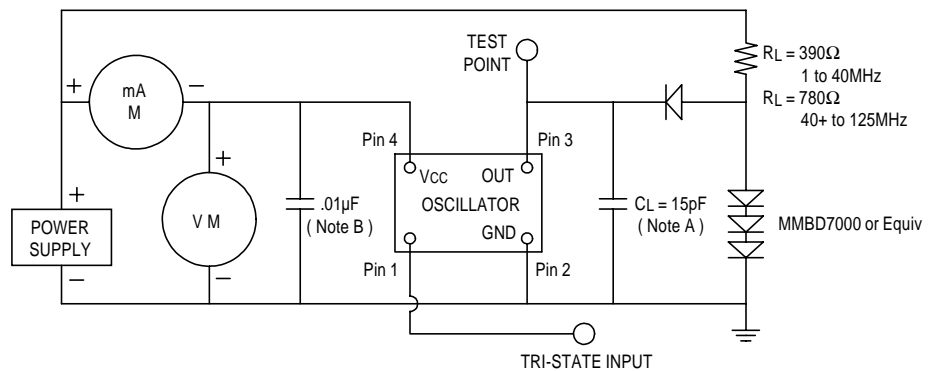
Tri-State or Standby Logic Table

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

Required Input Levels on Pin 1:

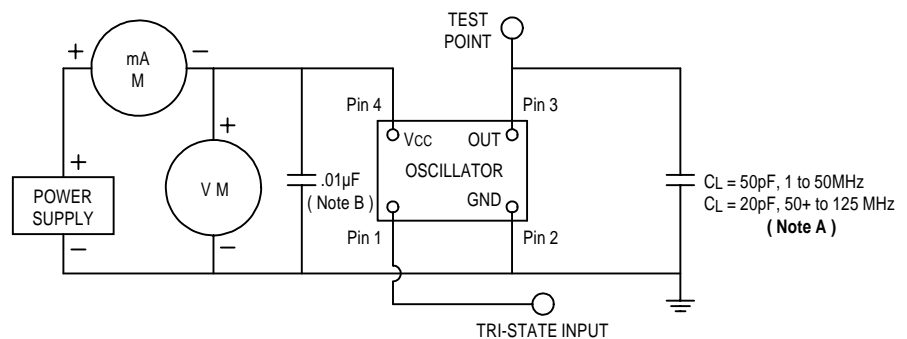
Logic 1 = 2.0V min
Logic 0 = 0.8V max

Test Circuits



NOTE: A. C_L 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. C_L 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.

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