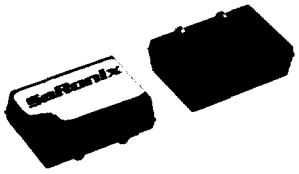
SaRonix

PrO™ Programmable Clock Oscillator 3.3 & 3V, HCMOS, SMD

Technical Data

PrO™ S8002 Plastic 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 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 ±25, ±50, ±100ppm
- 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 90MHz		
Frequency Stability:	±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:	3.3V ±10% or 3.0V ±10% (1 to 50MHz only)		
Supply Current:	25mA from 1 to 50MHz, 30mA from 50+ to 90MHz		
Standby Current:	50µA max (use option S, see part number builder)		
Output Drive:	@ 50% V_{DD}	@ 50% V_{DD}	@ 50% V_{DD}
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% V_{DD}		
Logic 0:	0.4V max		
Logic 1:	V_{DD} -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

S8002 H S C B – 90.0000 (T)

Series
SaRonix Programmable Oscillator

Package
H = Plastic SMD, J-lead

P = Output Enable
S = Standby

Type
C = 3.3V, 1 to 90 MHz
D = 3.0V, 1 to 50 MHz

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

(T) = Tape & Reel
full reel increments only

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

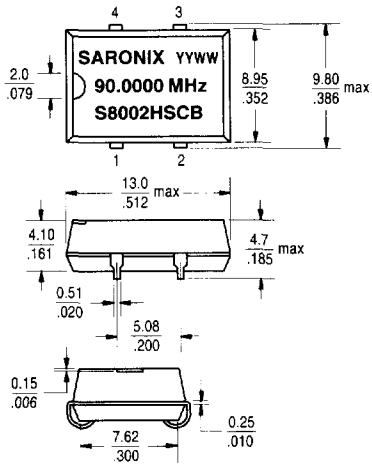
Example PN: S8002HSCB - 90.0000

DS-191 REV D

Technical Data

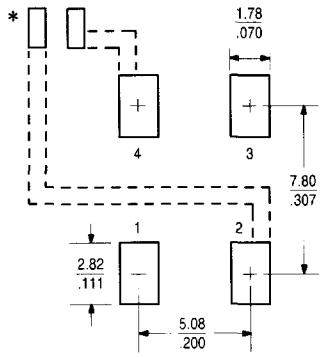
PrO™ S8002 Plastic Series

Package Details, Type H



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

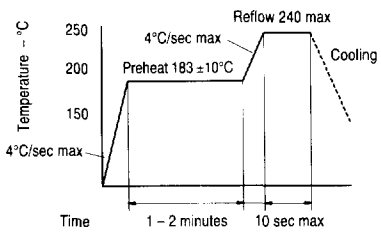
Recommended Land Pattern



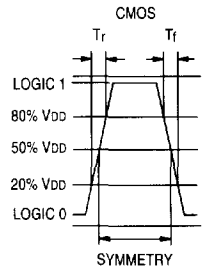
*External high frequency power supply decoupling required.

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

Solder Reflow Guide



Output Waveform

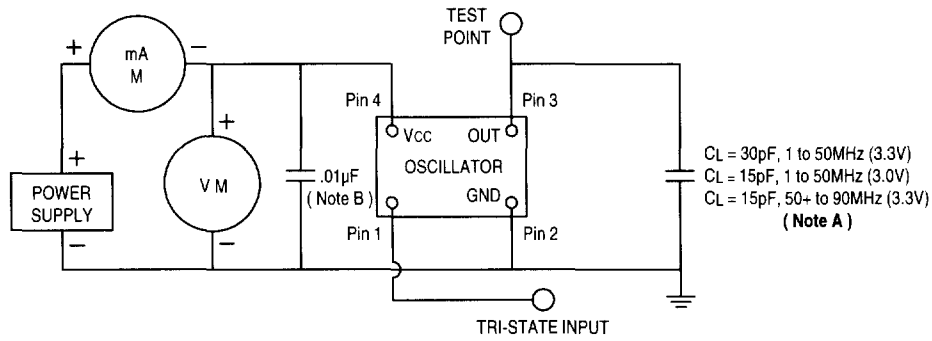


Tri-State or Standby Logic Table

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 = 0.7VDD min
Logic 0 = 0.2VDD 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

HCMOS TEST CIRCUIT, 3.3V OPERATION

All specifications are subject to change without notice.

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