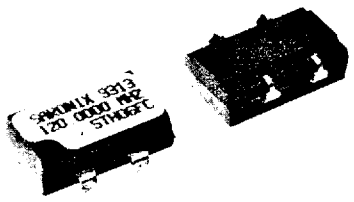
SaRonix

Crystal Clock Oscillator — HCMOS, TTL, Tri-State, SMD

Technical Data — STA / STH / STT Series, Type F



ACTUAL SIZE

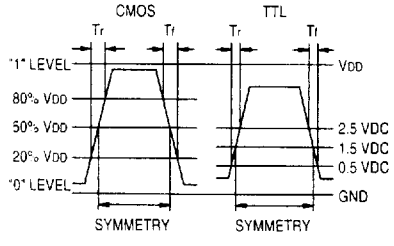
Description

A crystal controlled, low current oscillator to drive HCMOS and NMOS microprocessors. This ACMOS device is capable of driving both HCMOS and TTL loads at high frequencies. The tri-state function enables the output to go high impedance. The surface mountable J-leaded plastic package is ideal for automated assembly.

Applications & Features

- Ideally suited for high speed graphics, CISC and RISC processors, and custom ASIC's
- Compact Surface Mountable package
- Matches EIA standard SO-J-20 footprint
- High frequency up to 135 MHz
- ACMOS, HCMOS and TTL compatible
- Tri-state output
- Output is short-circuit protected

Output Waveform



Frequency Range:	70 MHz to 135 MHz
Frequency Stability:	±50, ±100 or ±500 ppm over all conditions: calibration tolerance, operating temperature, input voltage change, load change, aging, shock and vibration.
Temperature Range:	
Operating:	0°C to +70°C
Storage:	-55°C to +125°C
Supply Voltage:	
Operating:	+5 VDC ±10%
Absolute Maximum:	+7 VDC
Supply Current:	
70 MHz to 80 MHz:	30mA typical, 35mA max @ 25°C 40mA max over operating temperature range
Above 80 MHz:	45mA typical, 55mA max @ 25°C 65mA max over temperature range
Output Drive:	
ACMOS	
Symmetry:	@ 0.5 VDD, see Part Numbering Guide on Page 2
Rise & Fall Times:	20% to 80% VDD, see Part Numbering Guide
Logic 0:	10% VDD max
Logic 1:	90% VDD min
Output Load:	50 pF in parallel with 500Ω, max
TTL	
Symmetry:	@ 1.5V level, see Part Numbering Guide on Page 2
Rise & Fall Times:	0.5 to 2.5V, see Part Numbering Guide
Logic 0:	0.5V max
Logic 1:	2.5V min
Sink & Source Current:	50mA max
Mechanical:	
Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Terminal Strength:	MIL-STD-202, Method 211, Conditions A and C
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 B
Environmental:	
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

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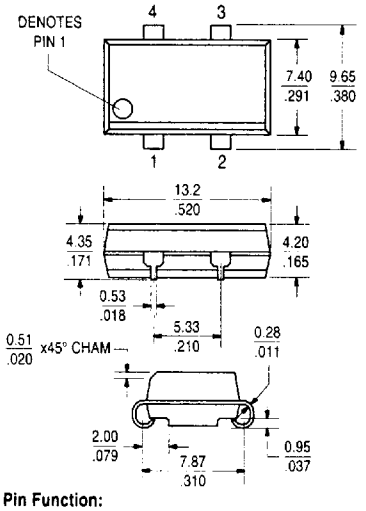
Tri-State Logic Table

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

Required Input Levels on Pin 1:
Logic "1" = 3.0V min
Logic "0" = 0.5V max

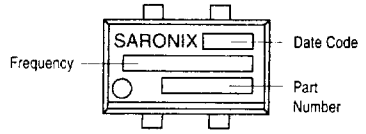
Package



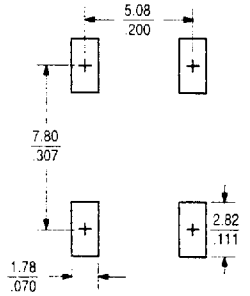
Pin Function:

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

Standard Marking Format



Recommended Land Pattern



Tolerance: $\frac{\pm.13}{\pm.005}$

* Good external high frequency power supply decoupling required.

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

Part Numbering Guide

STA 0 3 F C - 100.0000

Series
STA = ACMOS - compatible
STT = TTL - compatible
STH = HCMOS - compatible

Symmetry
0 = Symmetry 50% ±10%
A = Symmetry 50% ±5%

Frequency Range
2 = TTL 1.0 nsec Rise/fall, 2.0 nsec max (Std 70 - 84.9 MHz)
3 = TTL 0.5 nsec Rise/fall, 1.0 nsec max (Std 85.0 - 135 MHz)
5 = HCMOS 2.0 nsec Rise/fall, 4.0 nsed max (Std 70 - 84.9 MHz)
6 = HCMOS 1.0 nsec Rise/fall, 2.0 nsec max (Std 85.0 - 135 MHz)
8 = ACMOS 2.5 nsec Rise/fall, 3.5 nsec ,max (Std 70 - 84.9 MHz)
9 = ACMOS 1.8 nsec Rise/fall, 2.0 nsec max (Std 85.0 - 135 MHz)

Package Style
F = J - Lead

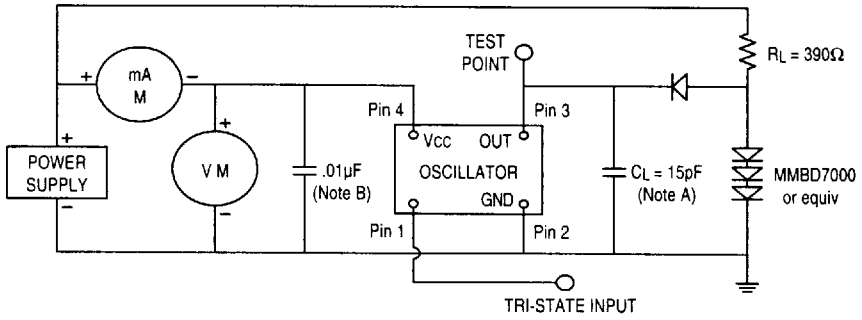
Stability Tolerance
B = ±50 ppm (0.005%)
C = ±100 ppm (0.010%)
D = ±500 ppm (0.05%)

Logic
R = Reverse Logic Tri-state Address Option (up to 120 MHz)

Frequency

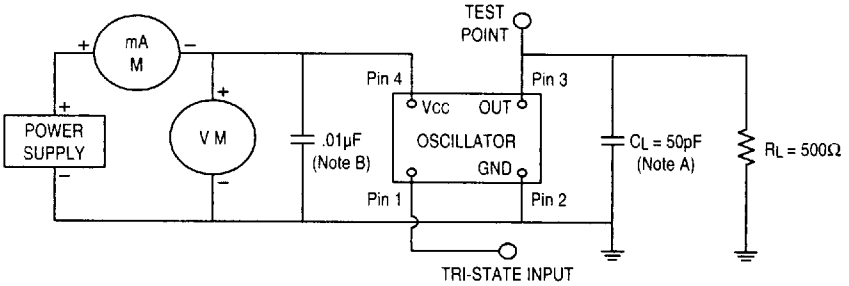
Example P/N: STA08FC - 80.0000

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 recommended.

FIGURE 1 - TTL TEST CIRCUIT



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

FIGURE 2 - HCMOS TEST CIRCUIT

All specifications are subject to change without notice.

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