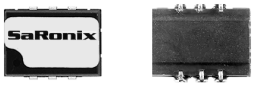
SaRonix

Voltage Controlled Crystal Oscillator CMOS / TTL

Technical Data S1528 Series



ACTUAL SIZE

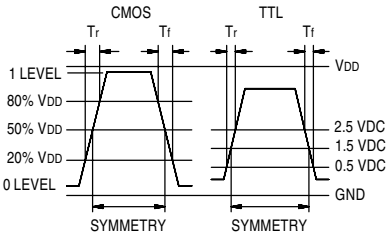
Description

A voltage controlled crystal oscillator providing precise rise and fall times to drive high performance applications. The device is packaged in a 6-pin, SMD, J leaded package. The plastic molded surface mountable package is ideal for today's automated assembly environments.

Applications

- For use with phase-locked loop (PLL) for clock and data recovery, frequency translation, or frequency synthesis applications in video, telephony, and data communication environments.
- Plastic molded, J-lead SMD package
- TTL and CMOS compatible
- Tri-state output
- For frequencies above 27 MHz, see SaRonix S1518 Series
- Available as 3.3V version, see SaRonix S1328 Series
- Available on tape & reel; 24mm tape, 500pcs per reel

Output Waveform



Frequency Range:	1.5 MHz to 27 MHz
Frequency Stability:	±50 ppm over all conditions: operating temperature, voltage change, load change, calibration tolerance, aging, with V_C = 2.5V
Temperature Range:	
Operating:	0 to +70°C, 0 to +85°C, -40 to +85°C
Storage:	-55 to +125°C
Supply Voltage:	
Recommended Operating:	5V ±5%
Supply Current:	20mA typ, 30mA max @ 25°C, 40mA max @ operating temp range
Output:	
Symmetry:	See Part Numbering Guide and Output Waveform
Rise & Fall Times:	5ns max, 20% to 80% V_{DD}, CMOS 4ns max, 0.4V to 2.4 VDC, TTL
Logic 0:	10% V_{DD} max for CMOS or 0.4 VDC max for TTL
Logic 1:	V_{CC} -0.6 VDC for CMOS or 2.4 VDC min for TTL
Load:	50pF or 10 TTL
Period Jitter RMS:	8ps max
Pull Characteristics:	
Input Impedance:	50KΩ min
Frequency Response (-3dB):	20kHz
Pullability:	±20, ±50, ±70, ±100 ppm APR* (See Part Numbering Guide)
Control Voltage:	0.5 to 4.5V
Transfer Function:	Frequency increases when Control Voltage increases
Linearity:	10% max
Center Control Voltage:	2.5V
Mechanical:	
Shock:	MIL-STD-883, Method 2002, Condition B
Solderability:	MIL-STD-883, Method 2003
Terminal Strength:	MIL-STD-202, Method 211, Conditions A & C
Vibration:	MIL-STD-883, Method 2007, Condition A
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

* APR = (VCXO Pull relative to specified Output Freq. @ nominal control voltage) – (VCXO Freq. Stability)

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Voltage Controlled Crystal Oscillator

CMOS / TTL

Technical Data

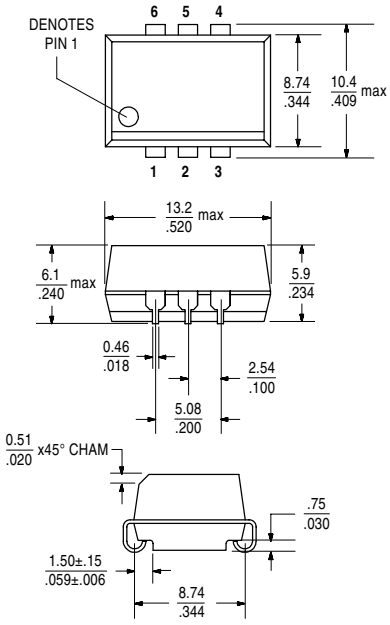
S1528 Series

Tri-State Logic Table

Pin 2 Input	Pin 4 Output
Logic 1 or NC	Oscillation
Logic 0 or GND	High Impedance or Standby Function

Required Input Levels on Pin 2:
Logic 1 = 3.0V min
Logic 0 = 0.5V max

Package Details

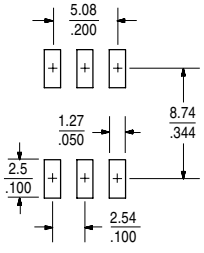


Pin Functions:

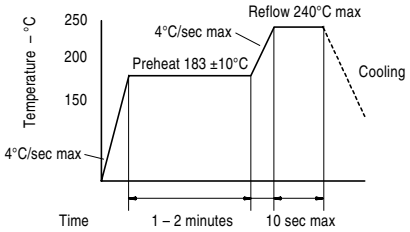
Pin 1: Control Voltage
Pin 2: Tri-State Control
Pin 3: GND
Pin 4: Output
Pin 5: N/C
Pin 6: +5VDC (V_{CC})

Scale: None (Dimensions in mm / inches)

Recommended Land Pattern



Solder Reflow Guide



Part Numbering Guide

S1528 C G E A - 6.1760 (T)

Series
S1528 = 5V VCXO, J Lead SMD

Logic Type
T = TTL
C = CMOS

Absolute Pull Range*
C = ±20 ppm
G = ±50 ppm
H = ±100 ppm***
M = ±70 ppm

Operating Temperature
C = 0 to +70°C
E = 0 to +85°C
L = -40 to +85°C

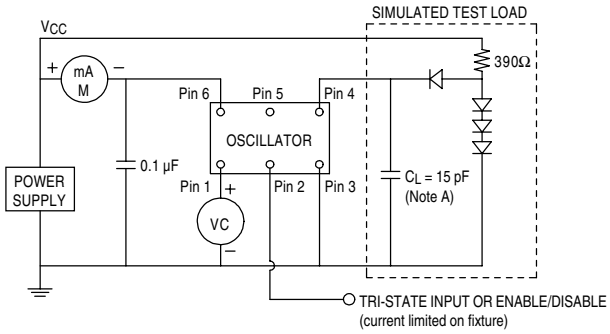
Symmetry
A = 45/55% max**
B = 40/60% max

Frequency (MHz)

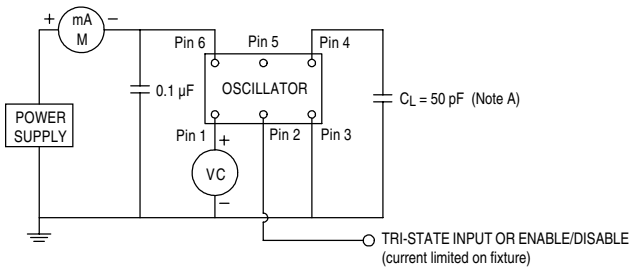
(T) = Tape & Reel
full reel increments only

* APR = (VCXO Pull relative to specified Output Freq. @ nominal control voltage) – (VCXO Freq. Stability)
** Not available at all frequencies; TTL 13.5 to 27 MHz only
*** Not available at all frequencies and all operating temperature ranges, please contact SaRonix

Test Circuits



NOTE A: C_L includes probe and jig capacitance.
TTL TEST CIRCUIT



NOTE A: C_L includes probe and jig capacitance.
HCMOS TEST CIRCUIT

All specifications are subject to change without notice.

DS-147 REV C