SaRonix

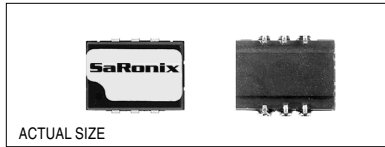## Voltage Controlled Crystal Oscillator   3.3V, CMOS / TTL
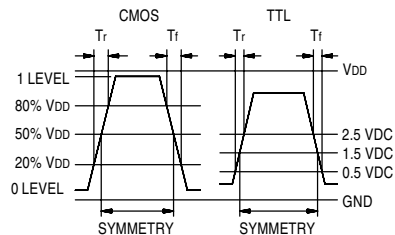
Technical Data

ACTUAL SIZE

Description

A voltage controlled crystal oscillator, with output logic levels compatible with HCMOS and TTL logic families. The 6-pin, plastic molded SMD, J- leaded package ("S" 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.
- Compact, plastic molded SMD package
- TTL and CMOS compatible
- Tri-state output

Output Waveform

Frequency Range:		1.5 MHz to 27 MHz		

Frequency Stability: $\pm$50 ppm over all conditions: operating temperature, voltage change, load change, calibration tolerance, with V_C = 1.65V

Aging: $\pm$12ppm max in 10 Years @ +40°C

Temperature Range:
Operating:	0 to +70°C, -40 to +85°C
Storage:	-55 to +125°C

Supply Voltage:
Recommended Operating:	3.3V $\pm$10%

Supply Current: 15mA max

Output:
Symmetry:	45/55% max @ 50% V_{DD}
Rise & Fall Times:	9ns max 20% to 80% V_{DD}
Logic 0:	10% V_{DD} max
Logic 1:	90% V_{DD} min
Load:	30pF
Jitter:	20ps peak-to-peak max

Pull Characteristics:
Input Impedance:	50KΩ min
Frequency Response (-3dB):	10kHz
Pullability:	$\pm$25ppm, $\pm$50ppm, $\pm$75ppm APR* (See Part Numbering Guide)
Control Voltage:	0.3 to 3V
Transfer Function:	Frequency increases when Control Voltage increases
Linearity:	10% max
Center Control Voltage:	1.65V

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
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 Frequency) – (VCXO Frequency Stability) – (Aging)

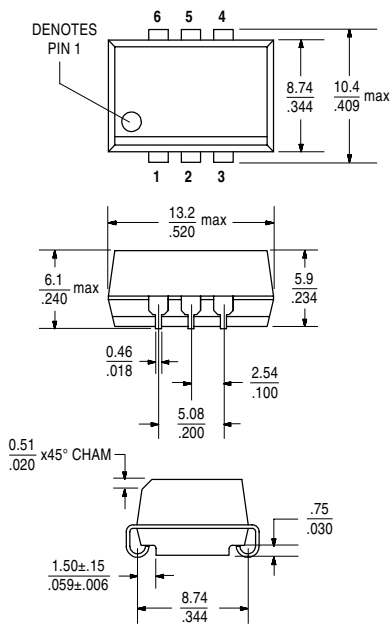|		
DS-194 REV A		**5.10.1**

Voltage Controlled Crystal Oscillator   3.3V, CMOS / TTL

Tri-State Logic Table

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

Required Input Levels on Pin 2:
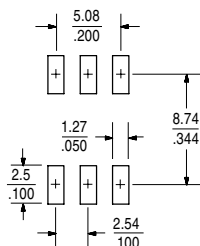Logic 1 = 2.4V min
Logic 0 = 0.5V max

Solder Reflow Guide

Package Details

Pin Functions:
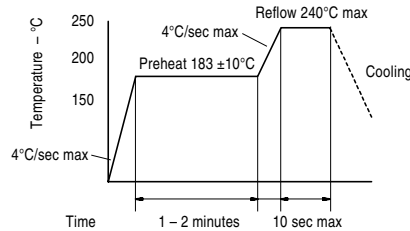
Pin 1: Control Voltage   Pin 4: Output
Pin 2: Tri-State Control   Pin 5: N/C
Pin 3: GND   Pin 6: +3.3VDC

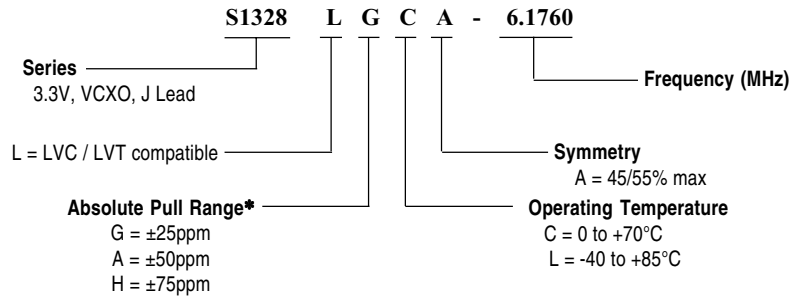Scale: None (Dimensions in $\frac{mm}{inches}$)

Part Numbering Guide

S1328   L   G   C   A - 6.1760

Series
3.3V, VCXO, J Lead

L = LVC / LVT compatible

Absolute Pull Range✱
G = ±25ppm
A = ±50ppm
H = ±75ppm

Frequency (MHz)

Symmetry
A = 45/55% max

Operating Temperature
C = 0 to +70°C
L = -40 to +85°C
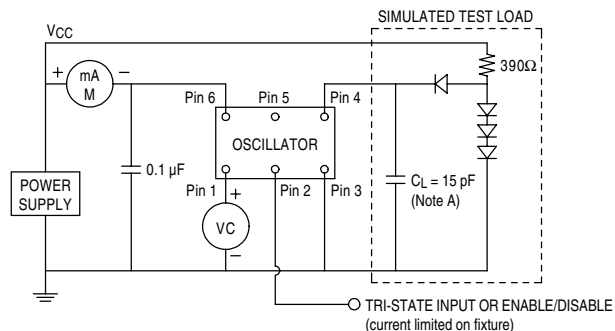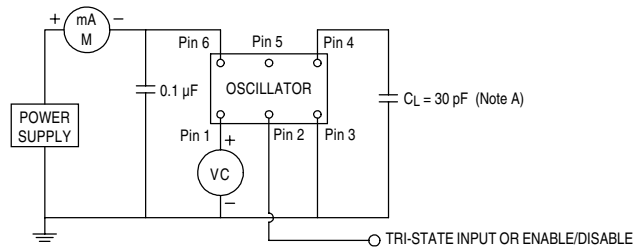
✱ APR = (VCXO Pull relative to specified Output Frequency) – (VCXO Frequency Stability) – (Aging)

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

Recommended Land Pattern

All specifications are subject to change without notice.

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