

### Technical Data

S5300 Series



#### Description

A temperature compensated crystal oscillator available for 5 Volt operations with Clipped Sinewave, HCMOS and TTL output. The low power consumption of this TCXO makes it ideal for portable, wireless applications. The TCXO version comes in a 3 pin package and the TCVCXO version in a 4 pin package.

#### Applications & Features

- Cellular Applications (GSM, TDMA, CDMA)
- GPS Devices
- Mobile and Portable Radio/Telephone
- Communications Transceivers

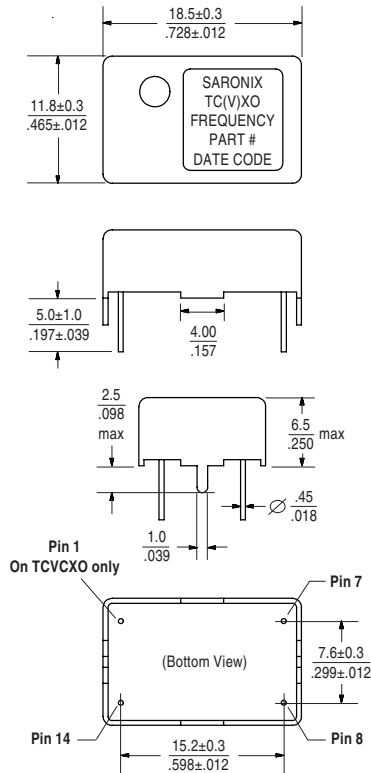
<b>Frequency Range:</b>	8.4672 MHz to 34.3680 MHz
<b>Frequency Stability:</b>	vs. temperature: $\pm 2.0$ (0 to $+55^{\circ}\text{C}$ ), $\pm 2.5$ , $\pm 3.0$ or $\pm 5.0$ ppm max vs. aging: $\pm 2.0$ ppm (85 $^{\circ}\text{C}$ , 1000 hrs) vs. supply voltage: $\pm 0.3$ ppm (5V $\pm 5\%$ ) vs. load: $\pm 0.2$ ppm (10 pF to 20pF) vs. hysteresis: $\pm 0.5$ ppm (temp change 1 $^{\circ}\text{C}$ per minute) vs. temp cycle: $\pm 0.2$ ppm (10 cycles, min to max storage temp) perturbations: 0.5 ppm peak-to-peak max
<b>Temperature Range:</b>	Operating: 0 to $+55^{\circ}\text{C}$ , -10 to $+60^{\circ}\text{C}$ or -20 to $+70^{\circ}\text{C}$ Storage: -40 to $+85^{\circ}\text{C}$
<b>Supply Voltage:</b>	5V $\pm 5\%$
<b>Supply Current:</b>	5mA max (Clipped Sinewave) 15mA max (HCMOS and TTL)
<b>Output:</b>	
<u>Clipped Sinewave</u>	Level: 1.0V peak-to-peak min Load: 20K $\Omega$ // 10pF
<u>TTL Compatible</u>	Symmetry: 40/60% max @ 1.5V Rise & Fall Times: 4ns max, 0.5V to 2.5V Logic 0: 0.5V max Logic 1: 2.5V min Load: 2TTL or 15pF
<u>HCMOS Compatible</u>	Symmetry: 40/60% max @ 50% V <sub>DD</sub> Rise & Fall Times: 8ns max, 20% to 80% V <sub>DD</sub> Logic 0: 10% max Logic 1: 90% min Load: 15pF
<b>Frequency Adjustment</b>	$\pm 5$ ppm min relative to nominal frequency (using externally accessible, internal trimmer) Rated Control Voltage: $+0.5\text{V}$ to $+4.5\text{VDC}$ Relative Pull Range: $\pm 5$ ppm min (VC = 2.5V $\pm 2\text{V}$ ) Control V Input Impedance: 1 M $\Omega$ min Modulation Bandwidth: 1 kHz min
<b>Phase Noise (typical):</b>	
<u>Clipped Sinewave</u>	-45 dBc/Hz min @ 1 Hz offset from carrier -80 dBc/Hz min @ 10 Hz -110 dBc/Hz min @ 100 Hz -142 dBc/Hz min @ 1 kHz -150 dBc/Hz min @ 10 kHz -155 dBc/Hz min @ 100 kHz
<u>HCMOS or TTL</u>	-120 dBc/Hz min @ 1 kHz offset from carrier -140 dBc/Hz min @ 10 kHz -150 dBc/Hz min @ 100 kHz
<b>Mechanical:</b>	Shock: MIL-STD-883, Method 2002, Condition B Solderability: MIL-STD-883, Method 2003 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
<b>Environmental:</b>	Thermal Shock: MIL-STD-883, Method 1011, Condition A

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#### Package Details



#### Pin Functions TCXO:

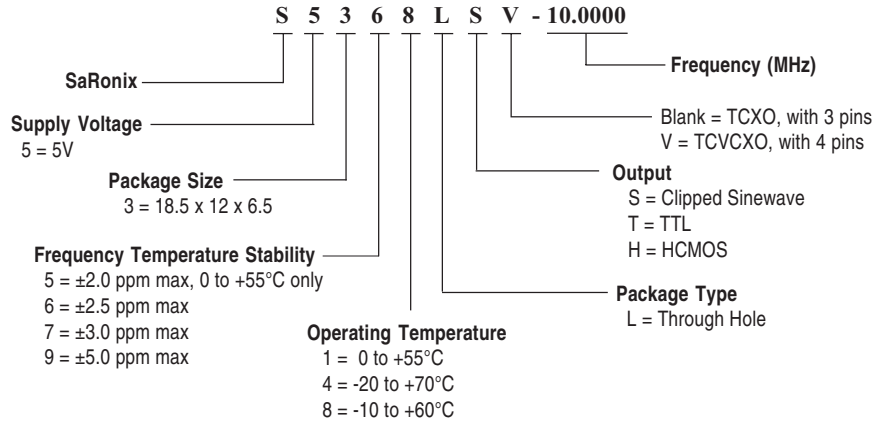
- Pin 7: GND
- Pin 8: Output
- Pin 14: VCC

#### Pin Functions TCVCXO:

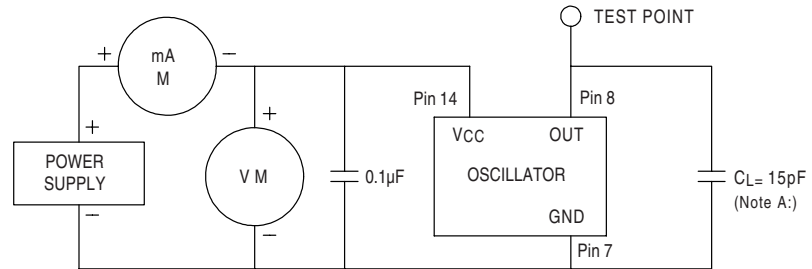
- Pin 1: V Control
- Pin 7: GND
- Pin 8: Output
- Pin 14: VCC

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

#### Part Numbering Guide

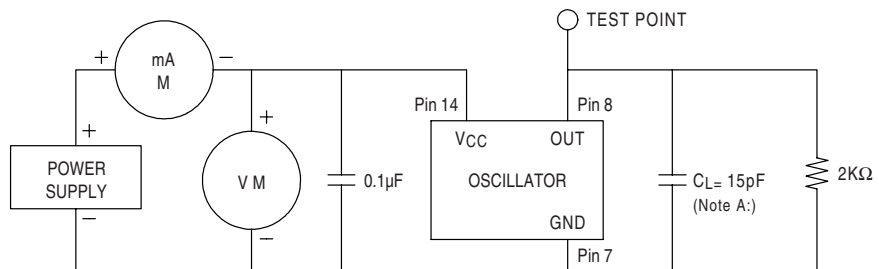


#### Test Circuit



#### HCMOS TEST CIRCUIT

NOTE A:  $C_L$  includes probe and fixture capacitance.



#### TTL TEST CIRCUIT

NOTE A:  $C_L$  includes probe and fixture capacitance.

All specifications are subject to change without notice.

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