

### Technical Data

S5300 Series



#### Description

A temperature compensated crystal oscillator available for 5 Volt operations with Clipped Sinewave, HCMOS and TTL output. The small size and low power consumption of this TCXO makes it ideally suited 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

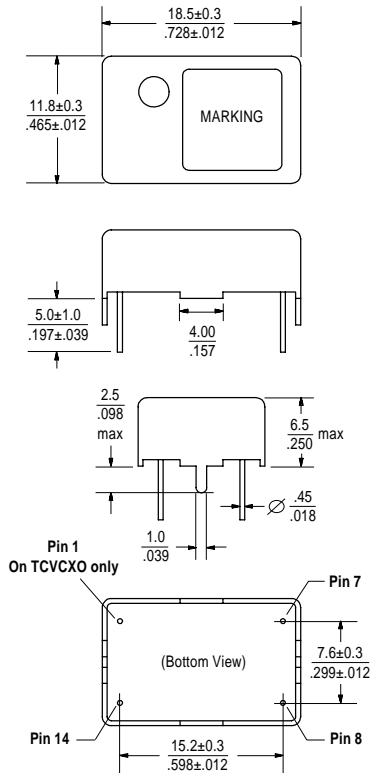
<b>Frequency Range:</b>	8.4672 MHz to 34.3680 MHz
<b>Frequency Stability:</b>	vs. temperature: $\pm 2.0$ (0 to $+55^{\circ}\text{C}$ ), $\pm 2.5$ , $\pm 3.0$ or $\pm 5.0$ ppm max vs. aging: $\pm 2.0$ ppm (85 $^{\circ}\text{C}$ , 1000 hrs) vs. supply voltage: $\pm 0.3$ ppm (5V $\pm 5\%$ ) vs. load: $\pm 0.2$ 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</u>	Symmetry: 40/60% max @ 1.5V Rise & Fall Times: 4ns max, 1.5V to 2.5V Logic 0: 0.5V max Logic 1: 2.5V min Load: 2TTL or 15pF
<u>HCMOS</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: +0.5V to 4.5VDC Relative Pull Range: $\pm 5$ ppm min (VC = 2.5V $\pm 2$ 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

DS-167 REV C

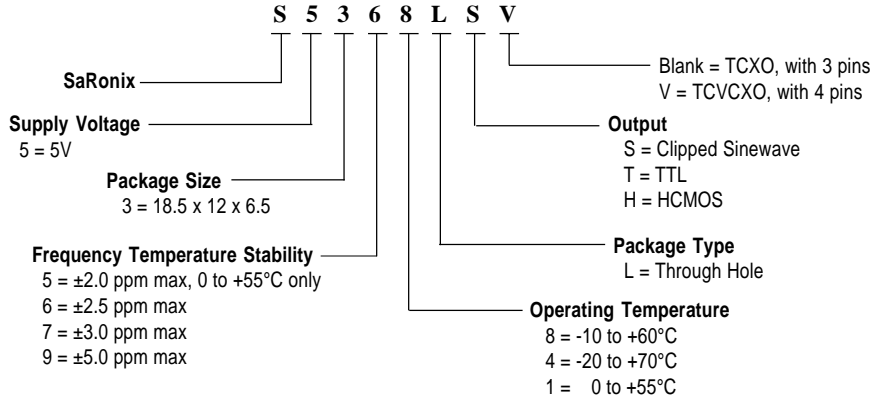
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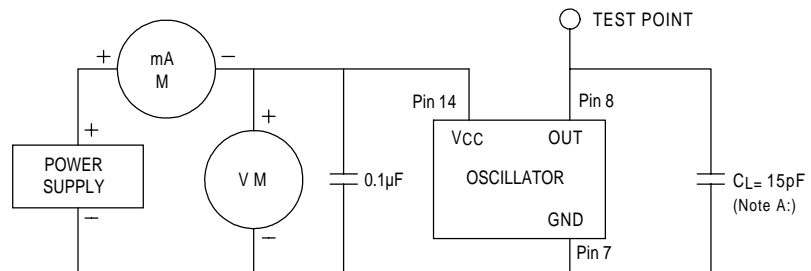
#### Package Details



#### Part Numbering Guide



#### Test Circuit



#### HCMOS TEST CIRCUIT

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

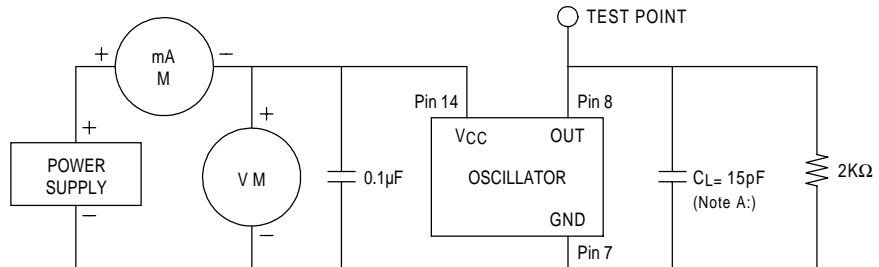
#### Pin Functions TCXO:

- 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  $\frac{\text{mm}}{\text{inches}}$ )



#### TTL TEST CIRCUIT

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

All specifications are subject to change without notice.

DS-167 REV C