SaRonix

TCXO / TCVCXO

5V, Clipped Sinewave, HCMOS, TTL

Technical Data

S5300 Series

ACTUAL SIZE

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

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

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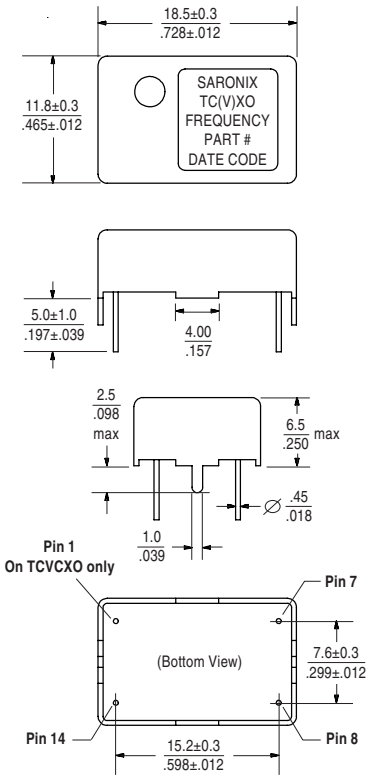
Package Details



Pin Functions TCXO:

Pin 7: GND
Pin 8: Output
Pin 14: V_{CC}

Pin Functions TCVCXO:

Pin 1: V Control
Pin 7: GND
Pin 8: Output
Pin 14: V_{CC}

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

Part Numbering Guide

S 5 3 6 8 L S V - 10.0000

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Supply Voltage
5 = 5V

Package Size
3 = 18.5 x 12 x 6.5

Frequency Temperature Stability
5 = ±2.0 ppm max, 0 to +55°C only
6 = ±2.5 ppm max
7 = ±3.0 ppm max
9 = ±5.0 ppm max

Operating Temperature
1 = 0 to +55°C
4 = -20 to +70°C
8 = -10 to +60°C

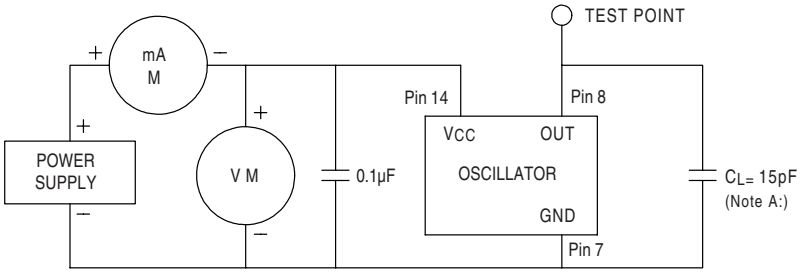
Package Type
L = Through Hole

Output
S = Clipped Sinewave
T = TTL
H = HCMOS

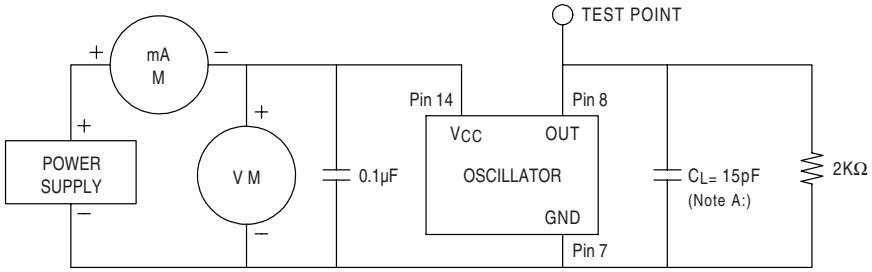
Blank = TCXO, with 3 pins
V = TCVCXO, with 4 pins

Frequency (MHz)

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.

DS-167 REV D