SaRonix

TCVCXO

5V, Clipped Sinewave, Tight Stability

Technical Data

S5600 Series

ACTUAL SIZE

Description

This TCVCXO is comprised of a quartz crystal and an integrated circuit. The IC contains the oscillator, the temperature compensation and the modulation functions. The components are assembled on a hybrid circuit and protected by a metal cover that also provides shielding. An external voltage is applied for calibration, adjustment and modulation. The TCVCXO is available with different stability, pullability or modulation values.

Applications & Features

- Cellular Telephone (GSM, TDMA, CDMA, etc.)
- Mobile and Portable Radio/Telephone
- Communication Transceivers
- Cordless Telephone
- Also available with very low phase noise (consult factory)
- 5 Volt operation
- Low profile 3.8mm high package

Frequency Range:		8 MHz to 20 MHz
Frequency Stability:		vs. temperature: ±1.5, ±2.5, ±4, ±8ppm max, see part numbering guide vs. aging: ±3.0ppm (125°C, 1000 hrs) vs. supply voltage: ±0.2ppm (5V ±5%) vs. load: ± 0.2 ppm (10 pF to 20pF) vs. hysteresis: ±0.3 ppm (temp change at rate of 1°C per minute) vs. temp cycle: ± 0.1 ppm (10 cycles, min to max storage temp) perturbations: 0.5 ppm peak-to-peak max
Temperature Range:		
	Operating:	-30 to +80°C
	Storage:	-45 to +100°C
Supply Voltage:		+5V ±5%
Supply Current:		2.65mA typ, 3mA max
Output:		
Clipped Sinewave	Level:	1.0V min peak-to-peak, 8 to 13 MHz 0.8V min peak-to-peak, 13+ to 16 MHz 0.7V min peak-to-peak, 16+ to 20 MHz
	Load:	10K // 10 pF
Frequency Adjustment:		
	Rated Control Voltage:	0.5V to 4.5VDC
	Relative Pull Range:	±8.5, 15, 40 and >40ppm (VC = 2.5V ±2V)
	Control V Input Impedance:	50kΩ min
	Modulation Bandwidth:	10kHz min
	Transfer Function:	Frequency Increases when Control Voltage Increases
Phase Noise:		-50 dBc/Hz min @ 1Hz offset from carrier -80 dBc/Hz min @ 10Hz -120 dBc/Hz min @ 100Hz -150 dBc/Hz min @ 1kHz -155 dBc/Hz min @ 10kHz -155 dBc/Hz min @ 100kHz
Mechanical:		
	Shock:	MIL-STD-883, Method 2002, Condition B
	Solderability:	MIL-STD-883, Method 2003
	Terminal Strength:	MIL-STD-202, Method 211, Conditions A and C
	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 A, B or C
Environmental:		
	Thermal Shock:	MIL-STD-883, Method 1011, Condition A

SaRonix 141 Jefferson Drive • Menlo Park, CA 94025 • USA • 650-470-7700 • 800-227-8974 • Fax 650-462-9894

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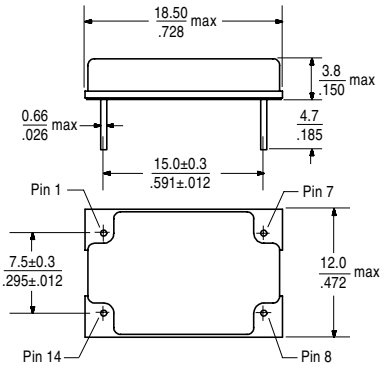
Package Details

THROUGH-HOLE, LEADED



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

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

Part Numbering Guide

S 5 6 6 9 L S V - 16.0000

Frequency (MHz)

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Voltage Control
V = Voltage Control Pin 1

Supply Voltage
5 = 5V

Output
S = Clipped Sinewave

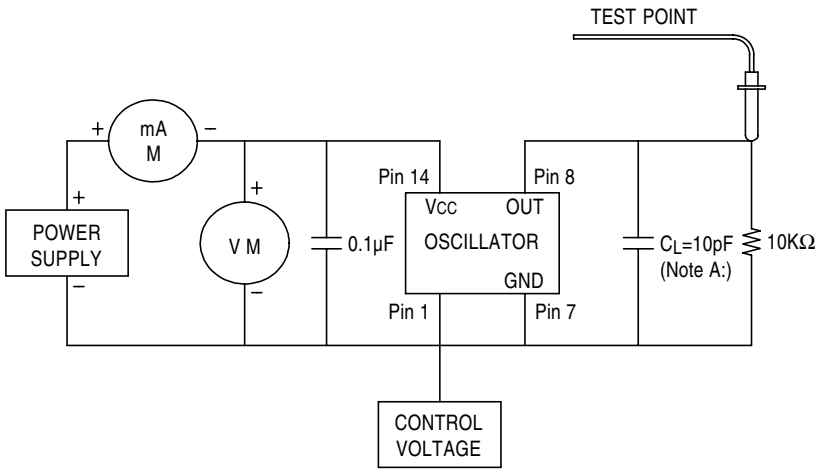
Package Size
6 = 12 x 18.5 x 3.8mm

Package Type
L = Leaded

Frequency Temperature Stability
4 = ±1.5 ppm (±8.5 ppm pullability)
6 = ±2.5 ppm (±15 ppm pullability)
A = ±4.0 ppm (±40 ppm pullability)
B = ±8.0 ppm (>40 ppm pullability)

Operating Temperature
9 = -30 to +80°C

Test Circuit



NOTE A: C_L includes probe and fixture capacitance.

All specifications are subject to change without notice.

DS-168 REV C