



**TRUE SINEWAVE SMD (11.4x9.6x2.5 mm) TCXO/VCTCXO IN LEADLESS PACKAGE - TCLS Series**

**FEATURES**

- RoHS Compliant (Pb-Free), True Sine Wave Output
- Voltage Control Option for Electric Frequency Adjustments
- High Reliability with ASIC Circuit, Trimmerless, Reflow Soldering
- SMD Miniature Size, Industry de factor Standard Footprint

**SPECIFICATIONS**

<b>Frequency Range</b>	10.000 MHz to 20.000 MHz
<b>Standard Frequency</b>	10.0/10.24/12.0/12.8/13.0/16.0/16.384/16.8/19.2/19.44/19.80 MHz
<b>Supply Voltage (Vcc)</b>	A = 5.0 VDC $\pm$ 5%; B = 3.3 VDC $\pm$ 5%; C = 3.0 VDC $\pm$ 5%
<b>Input Current</b>	2.0 mA Maximum
<b>Storage Temperature</b>	-40°C to 125°C
<b>Controllable Frequency Option</b>	V = Voltage control option: $\pm$ 8 ppm Minimum
<b>Control Voltage (Vc)</b>	2.5 $\pm$ 2.0 VDC for Vcc = 5 VDC; 1.5 $\pm$ 1.0 VDC for Vcc = 3 VDC
<b>Setability of Vc at Fnom, 25°C</b>	2.5 $\pm$ 0.5 VDC for 5.0V part; 1.5 $\pm$ 0.4 VDC for 3.0V part
<b>Frequency Stability vs Temp.</b>	$\pm$ 2.5 ppm Maximum / -30°C to 80°C
<b>Frequency Stability vs Vcc</b>	$\pm$ 0.3 ppm Maximum / Vcc $\pm$ 5%
<b>Frequency Stability vs Load</b>	$\pm$ 0.3 ppm Maximum / 10 kOhms or 10 pF $\pm$ 10%
<b>Aging</b>	$\pm$ 1 ppm Maximum per year @25°C
<b>Output Load</b>	10 kOhms or 10 pF $\pm$ 10%
<b>Output Waveform</b>	Sine wave
<b>Output Level</b>	0.8Vp-p Minimum
<b>Start-up Time</b>	2 ms Typical at 90% Final output level
<b>Phase Noise (Max)</b>	-135 dBc/Hz at 1KHz; -140 dBc/Hz at 10KHz
<b>Typical Part Number</b>	TCLS-Frequency-Vcc-Voltage control option
<b>P/N Example</b>	TCLS-12M800-A: Leadless SMD TCXO in 11.4x9.6x2.5 mm package, Sine wave output, 12.800 MHz, +5 VDC supply voltage, $\pm$ 2.5 ppm / -30°C to 80°C

**OUTLINE DRAWING**

