

OSC Series Ultra Miniature TCXOs



Features

- Low Cost
- 3.0 or 5.0 Vdc Option
- Reflow Solderable
- <2.2 mm Height
- Voltage Tune Option

Applications

- Wireless handsets, PCS, GSM, Cellular
- PCMCIA Applications
- GPS

Description

Vectron International has introduced a series of low-profile, low cost, *surface mount, Temperature Compensated Crystal Oscillators (TCXOs)* available in frequencies from 10 MHz to 50 MHz.

The OSC series low-profile (0.09 inch maximum height), surface mount TCXOs can be mounted using the standard convection reflow process. The units feature a ± 1.5 PPM frequency vs. temperature characteristic over a -20°C to $+70^{\circ}\text{C}$ operating range and operate from a 3.0V or 5V supply. Current drain < 2.0 mA. Aging < 1 ppm/year and phase noise is -125 dBc/Hz at 100 Hz and -150 dbc/Hz at 100 kHz.

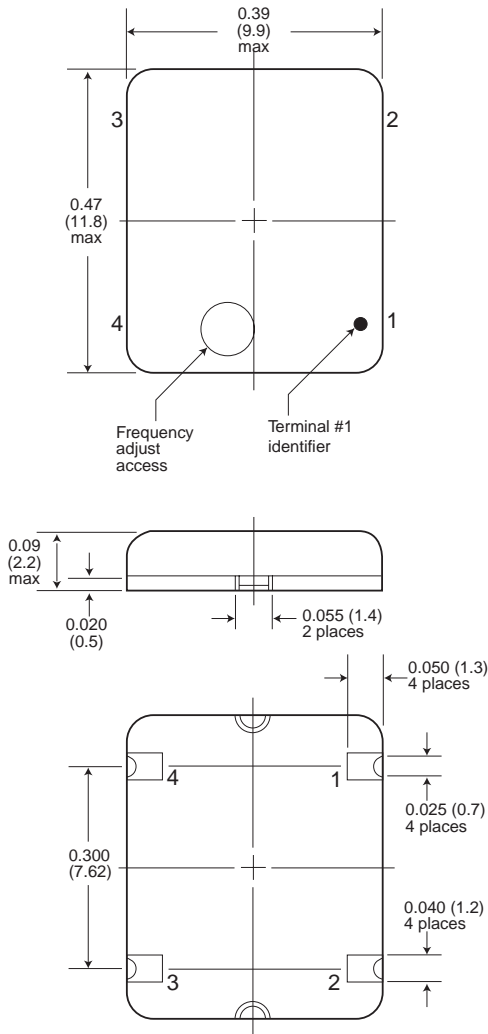
The OSC series of TCXOs and TCVCXOs has been designed for pick-and-place mounting and reflow soldering. Units are available on tape-and-reel at no additional charge. The reel size is 2000 pcs. and is compatible with EIAJ-1009B standards. The low-cost, miniature units are ideal for wireless handsets, PCMCIA applications, and GPS receivers.

OSC Series Ultra Miniature TCXO s

Performance Characteristics

| Parameter | Characteristics | |
|--|---|--|
| | Option A = +5 Vdc | Option B= +3 Vdc |
| Frequency range: | 10 MHz to 50 MHz | |
| Stability Options: (relative to +25°C) | 1 = ±1.5 ppm -20 to +70°C 2 = ±2.0 ppm -30 to +70°C 3 = ±2.5 ppm -30 to +75°C 4 = ±5.0 ppm -40 to +85°C | |
| Stability vs. Supply Aging (typical): | <±0.3 ppm vs B+ of ±5% < 1.0 ppm/year at +40°C | |
| Input Voltage: | +5.0 Vdc ±5% | +3.0 Vdc ±5% |
| Current: | <1.5 mA (10.0 to 16.8 MHz) <3.0 mA (20.1 to 35.0 MHz) | <2.0 mA (16.8 to 20.0 MHz) <4.0 mA (35.1 to 50.0 MHz) |
| Output: Clipped Sinewave | +5.0 Vdc = 1.0 VP-P minimum | +3.0 Vdc = 0.7 VP-P minimum |
| Load: | 10 KΩ/10pf | |
| Mechanical trim: | ±3.0 PPM min. | |
| Trim options: | 0 = Mechanical trim, no VCO 1 = ±5.0 ppm VC & mechanical 2 = Voltage trim only ±8.0 ppm min. | |
| Voltage Control Input Impedance: | 100KΩ minimum | |
| Supply Voltage: | +5.0 Vdc | +3.0 Vdc |
| Control Voltage Range: | +0.5Vdc to +4.5Vdc | +0.5Vdc to +2.5Vdc |
| Frequency Tolerance at 25°C: | ±2.0 ppm at +2.5 Vdc | ±2.0 ppm at +1.5 Vdc |
| Start-up time: | <10 mS (typical) to within ±1.0 PPM | |
| Harmonics: 2nd harmonic 3rd harmonic Other | > 3 dBc down > 6 dBc down > 10 dBc down | |
| Phase Noise (typical): at 10 MHz | -80 dBc/Hz max. at 10 Hz offset -125 dBc/Hz max. at 100 Hz offset -145 dBc/Hz max. at 1 KHz offset -148 dBc/Hz max. at 10 KHz offset -150 dBc/Hz max. at 100 KHz offset | |

OSC Series Ultra Miniature TCXO s

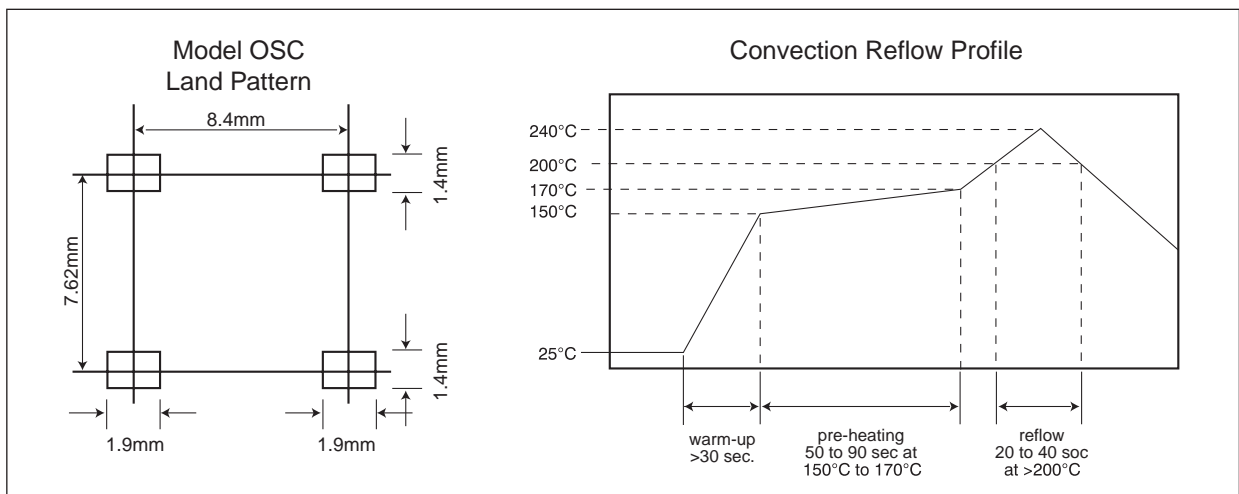


The OSC series of TCXO s and VCTCXO s has been designed for pick and place and reflow soldering. Units are available on **Tape and Reel** at no additional charge when ordering a complete reel. The reel size is 2000 pcs and is compatible with EIAJ-1009B standards. The suggested reflow profile is shown below. The TCXO may be reflowed two times. Frequency shift as a result of reflow will be <math>< 1.0\text{PPM}</math>. Units should not be adjusted to center frequencies until at least 2 hours after reflow to allow the crystals to stabilize.

The OSC footprint is compatible with many of the previous generation 6 pin leaded TCXO s. Our **OSE** model is the same size as the OSC except it provides the two additional pads to match pad connections of 6 pin leaded TCXO s and VCTCXO s.

TCXO s are precision subsystems with tolerances measured to $\pm 0.1\text{PPM}$ ($\pm 0.00001\%$). Non-hermetically sealed TCXO s should not be subjected to a wash process that will immerse the TCXO in solvents. **No clean** is the recommended procedure.

- PIN 1 = VC or N/C
- PIN 2 = GROUND
- PIN 3 = OUTPUT
- PIN 4 = Supply



OSC Series Ultra Miniature TCXO s

Order Information

| Standard Frequencies* (MHz) | | | | |
|-----------------------------|------|-------|------|-------|
| 10.0 | 12.8 | 13.0 | 14.4 | 15.56 |
| 16.0 | 19.2 | 19.98 | 20.0 | 25.0 |

How To Order

OSC- at

Stability Code
(from page 2)

Input Voltage

A = +5.0 Vdc ±5% <2.0 mA MAX.
 B = +3.0 Vdc ±5%
 <1.5 mA (10.0 to 16.8 MHz)
 <2.0 mA (16.8 to 20.0 MHz)

Frequency

Trim Option

0 = Mechanical trim, no VCO
 1 = ±5.0 ppm VC & mechanical
 2 = Voltage trim only ±8.0 ppm min.

Example of typical P/N

OSC-3B2 19.2 MHz
 3 = ±2.5 ppm
 B = +3.0 Vdc
 2 = Voltage Tune
 no mechanical trimmer

**Visit Our Website at
www.vectron.com**

For additional information please contact:



USA: Vectron International • 166 Glover Avenue, Norwalk, CT 06856 **Tel: 1-88-VECTRON-1 • Fax: 1-888-FAX-VECTRON**
EUROPE: In Denmark, Finland, Ireland, Israel, Norway, Spain, UK. **Tel: 44 (0) 1703 766 288 • Fax: 44 (0) 1703 766 822**
 In Austria, Belgium, France, Germany, Italy, Luxembourg
 Netherlands, Sweden, Switzerland, **Tel: 49 (0) 72 63 6480 • Fax: 49 (0) 72 63 6196**
ASIA: In China, Taiwan, Japan **Tel: 603-598-0070 • Fax: 603-598-0075**
 In Korea, Singapore, Australia, India **Tel: 203-853-4433 • Fax: 203-849-1423**

www.vectron.com

Vectron International reserves the right to make changes to the product(s) and/or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.