

3.3V SURFACE MOUNT 9x14mm Clipped Sinewave OCVCXO



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Description

Connor-Winfield model AL181 is a 3.3V Clipped Sinewave, Oven Controlled, Voltage Controlled Crystal Oscillator (OCVCXO) in a 9x14mm surface mount package. The AL181 is low cost, high performance SMT OCVCXO.

Patent Pending

Specifications

Absolute Maximum Ratings

| Parameter | Units | Minimum | Nominal | Maximum | Units | Note |
|---------------------|-------|---------|---------|---------|-------|------|
| Storage Temperature | | -55 | - | 85 | °C | |
| Supply Voltage | (Vcc) | -0.5 | - | 4.5 | Vdc | |

Operating Specifications

| Parameter | Minimum | Nominal | Maximum | Units | Note |
|---|---------|---------|---------|-------|-------------|
| Center Frequency | (Fo) | - | 19.2 | - | MHz |
| Frequency Calibration @ 25°C | | -1.0 | | 1.0 | ppm |
| Frequency Stability vs. Change in Temperature | | -95 | - | 95 | ppb |
| Frequency Stability vs. Change in Voltage | | -30 | - | 30 | ppb (+/-5%) |
| Frequency Stability vs. Change in Load | | -30 | - | 30 | ppb (+/-5%) |
| Aging 1 st Year | | -1.5 | - | 1.5 | ppm |
| Operating Temperature Range | | -5 | - | 70 | °C |
| Supply Voltage | (Vcc) | 3.133 | 3.30 | 3.465 | Vdc (+/-5%) |
| Supply Current | | - | - | 400 | mA |
| Start-Up Time | | | | 10 | ms |

Input Characteristics for Control Voltage

| Parameter | Minimum | Nominal | Maximum | Units | Note |
|------------------|---------|---------|---------|-------|----------------|
| Control Voltage | | 0.0 | - | 3.0 | V |
| Tuning Frequency | | +/-5 | - | +/-20 | ppm |
| Linearity | | - | - | 10 | % |
| Slope | | 2.5 | - | 15 | ppm/V Positive |
| Input Impedance | | 50K | - | - | Ohms |

Clipped Sinewave Output Characteristics

| Parameter | Minimum | Nominal | Maximum | Units | Note |
|----------------------------------|---------|--------------|---------|---------|------------|
| Load | | 10KOhm//10pF | | | |
| Output Voltage | 1.00 | - | - | V pk-pk | AC Coupled |
| Period Jitter | - | 3 | 5 | ps rms | |
| Phase Jitter (BW=12kHz to 20MHz) | - | 0.5 | 1 | ps rms | |
| SSB Phase Noise at 10Hz offset | - | - | -80 | dBc/Hz | |
| SSB Phase Noise at 100Hz offset | - | - | -110 | dBc/Hz | |
| SSB Phase Noise at 1KHz offset | - | - | -130 | dBc/Hz | |
| SSB Phase Noise at 10KHz offset | - | - | -145 | dBc/Hz | |

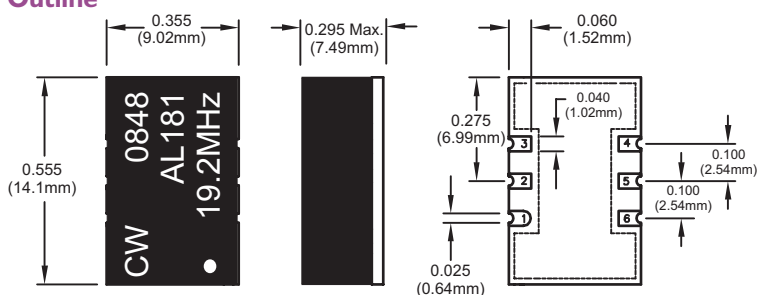
Package Characteristics

| | |
|---------|--|
| Package | Non-hermetic package consisting of an FR4 substrate and cover. |
|---------|--|

Environmental Characteristics

| | |
|---------------|---|
| Vibration: | Vibration per Mil Std 883E Method 2007.3 Test Condition A |
| Shock: | Mechanical Shock per Mil Std 883E Method 2002.4 Test Condition B. |
| Soldering: | RoHS compliant, lead free. See solder profile. |
| Solderability | Solderability per Mil Std 883E Method 2003 |

Package Outline

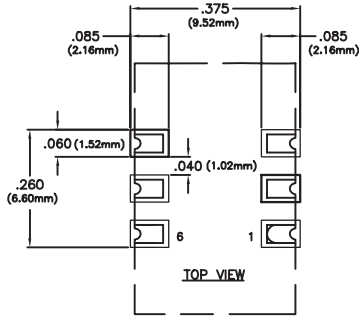


Dimensional Tolerance: ±.005 (.127mm)

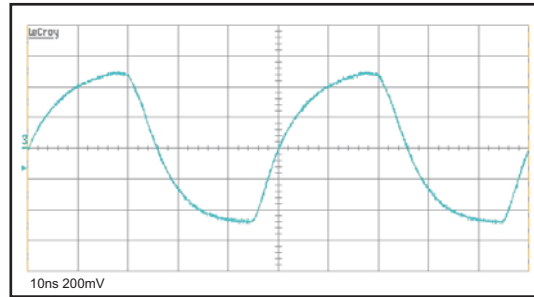


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Suggested Pad Layout



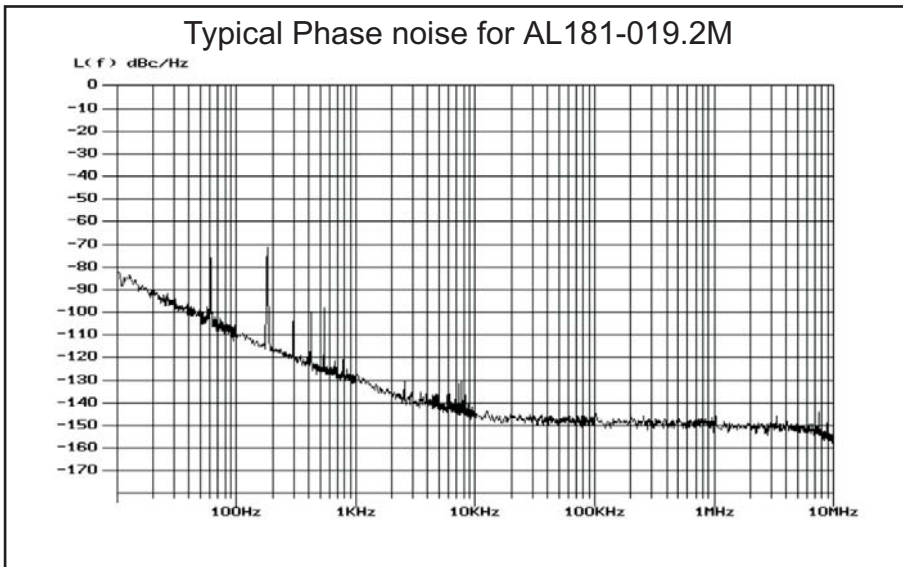
Output Waveform



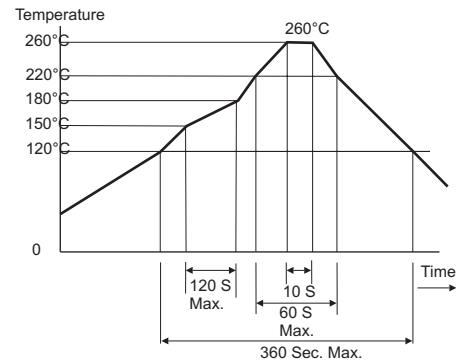
Pad Connections

| Pad | Connection |
|-----|----------------------------|
| 1 | Voltage Control |
| 2 | N/C |
| 3 | Circuit and Package Ground |
| 4 | Output |
| 5 | N/C |
| 6 | Supply Voltage |

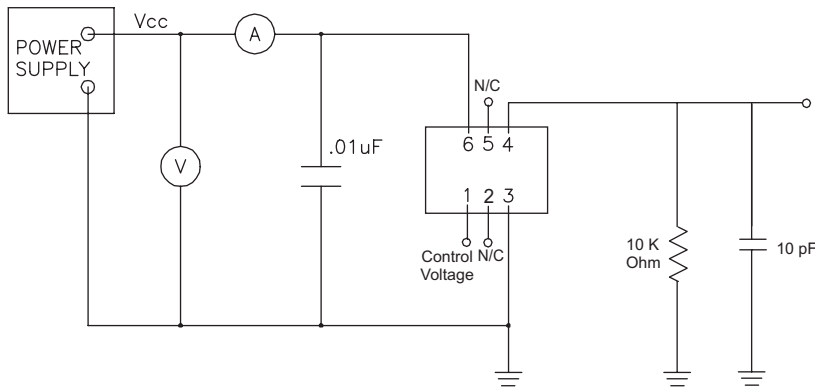
Typical Phase Noise



Solder Profile



Test Circuit



Ordering Information

AL181 - 019.2M
OCXO SERIES CENTER FREQUENCY

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