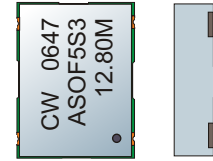


CRYSTAL CONTROLLED OSCILLATORS

SURFACE MOUNT 5.0V HCMOS STRATUM 3 OCXO



ASOF5S3

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------|-------|---------|---------|---------|-------|------|
| Storage Temperature | | -40 | - | 85 | °C | |
| Supply Voltage | (Vcc) | -0.5 | - | 7.0 | Vdc | |

OPERATING SPECIFICATIONS

TABLE 2.0

| PARAMETER | | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|------------------------------------|-------|---------|---------|---------|---------|------|
| Center Frequency | (Fo) | 1.544 | - | 20.0 | MHz | |
| Frequency Calibration, Vc=2.18 Vdc | | -1.5 | - | 1.5 | ppm | 1 |
| Frequency Stability | | -0.25 | - | 0.25 | ppm | 2 |
| Aging (Daily) | | -30 | - | 30 | ppb | 3 |
| Aging (20 Years) | | -2.5 | - | 2.5 | ppm | |
| Total Frequency Tolerance | | -4.6 | - | 4.6 | ppm | 4 |
| Operating Temperature Range | | 0 | - | 70 | °C | |
| Supply Voltage | (Vcc) | 4.75 | 5.0 | 5.25 | Vdc | |
| Supply Current | (Icc) | - | - | 350 | mA | |
| Phase Jitter (BW=12KHz to 20MHz) | | - | - | 1 | ps rms | |
| Phase Jitter (BW=10Hz to 20MHz) | | - | - | 3 | ps rms | |
| Period Jitter | | - | - | 3 | ps rms | |
| SSB Phase Noise at 10Hz offset | | - | -90 | - | dBc/Hz | |
| SSB Phase Noise at 10KHz offset | | - | -135 | - | dBc/Hz | |
| Start Up Time: Oscillator | | - | - | 10 | mS | |
| Warm Up Time | | - | - | 5 | Minutes | 5 |
| TDEV @ 1.0 Sec. | | - | - | 1 | nS | |
| TDEV @ 4.0 Sec. | | - | - | 2 | nS | |

HCMOS OUTPUT CHARACTERISTICS

TABLE 3.0

| PARAMETER | | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|-----------------------------|-------|---------|---------|---------|-------|------|
| LOAD | | - | - | 15 | pf | |
| Voltage (High) | (Voh) | 4.5 | - | - | Vdc | |
| (Low) | (Vol) | - | - | 0.4 | Vdc | |
| Current (High) | (Ioh) | -4 | - | - | mA | |
| (Low) | (Iol) | - | - | 4 | mA | |
| Duty Cycle at 50% of Vcc | | 45 | 50 | 55 | % | |
| Rise / Fall Time 10% to 90% | | - | - | 6 | nS | |

PACKAGE CHARACTERISTICS

TABLE 4.0

| | |
|---------|---|
| Package | Surface Mount, Non-hermetic package consisting of an FR4 substrate with grounded metal cover. |
|---------|---|

PROCESS RECOMMENDATIONS

TABLE 5.0

| | |
|-------------------|--|
| Soldering Process | See the solder profile on page 2. |
| Wash | Ultrasonic cleaning is not recommended |

Notes:

- 1) Initial calibration @ 25°C.
- 2) Frequency vs. temperature stability
- 3) At the time of shipment after 48 hours of operation.
- 4) Inclusive of calibration, operating temperature range, supply voltage change, load change, shock and vibration, 20 years aging.
- 5) Measured @ 25°C, within 5 minutes, the unit will be within +/-0.1ppm of its reference frequency, measured after 30 minutes of continuous operation at a stable 25°C

DESCRIPTION

The Connor-Winfield ASOF5S3 is a true Surface Mount 5.0V Oven Controlled Crystal Oscillator (OCXO) with an HCMOS output. The ASOF5S3 is designed for Stratum 3 applications requiring tight frequency stability and low jitter.

FEATURES

FIXED FREQUENCY OCXO

5.0V OPERATION

LOW JITTER <1ps RMS

TEMPERATURE STABILITY
±0.25ppm

FREQUENCY TOLERANCE OF
±4.6ppm
OVER TWENTY YEARS

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

RoHS 5/6 COMPLIANT

ORDERING INFORMATION

ASOF5S3 - 12.80MHz

OCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

CRYSTAL CONTROLLED OSCILLATORS

ENVIRONMENTAL CHARACTERISTICS

Temperature Cycle: Per MIL-STD-883, Method 1010, Condition B. -55°C to 125°C, 20 cycles, 10 minute dwell, 1 minute transition.

SOLDERING

Pad Solderability: Per MIL-STD-883, Method 200. 8 hour steam age prior to 254°C ±5°C Solder pot dip, 95% Coverage.

Solder Reflow: The component solder internal to this device has a melting point of 221°C, the peak temperature inside the device should be less than or equal to 220°C for a maximum of 10 seconds.

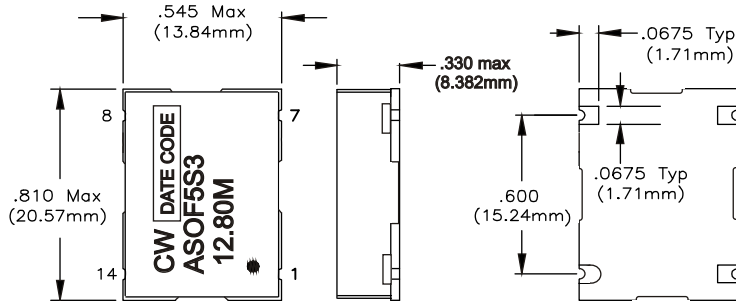
MECHANICAL CHARACTERISTICS

Vibration: Per MIL-STD-202, Method 204, Condition A. 10G's peak, 10Hz to 500Hz, 15 minute cycles 12 times each perpendicular axis.

Shock: Per MIL-STD-202, Method 213, Condition D. 500G's, 1ms, half sine, 3 shocks per direction.

Moisture Resistance: Per MIL-STD-202, Method 106. 95% RH @ 65°C, 10 cycles 10°C to 65°C.

Package Outline

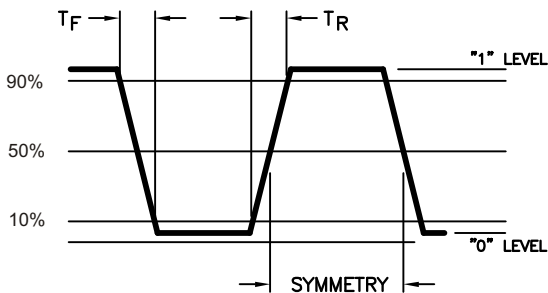


Pin Connections

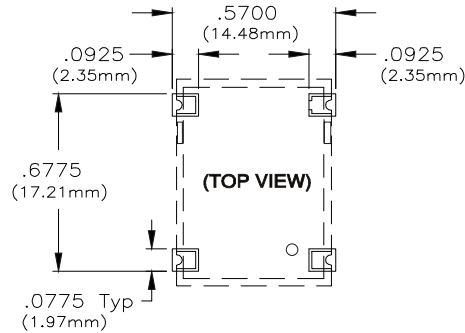
| Pin | Function |
|-----|---------------|
| 1 | N/C |
| 7 | Ground (Case) |
| 8 | Output |
| 14 | Vcc |

Dimensional Tolerance:
±.005 (.127mm)

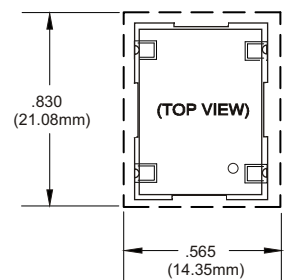
Output Waveform



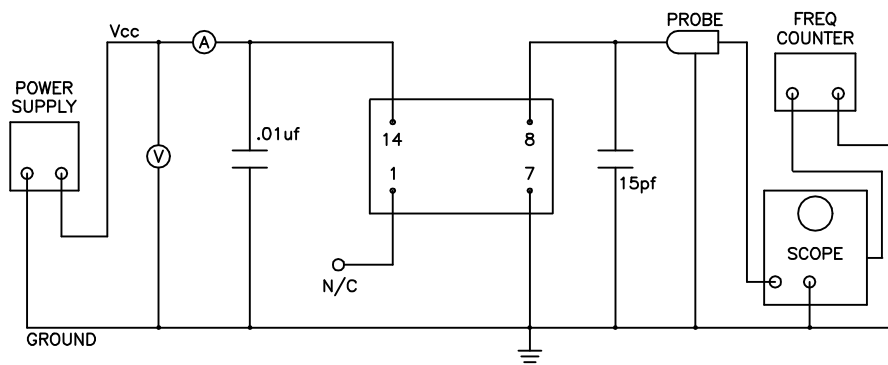
Suggested Pad Layout



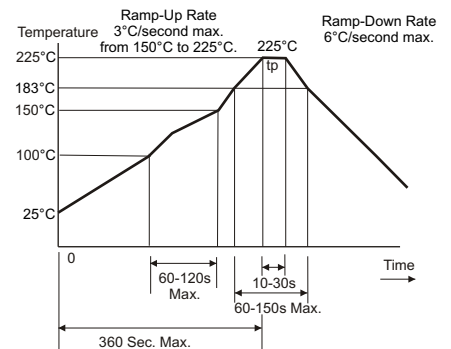
Keep Out Area



Test Circuit



Solder Profile



Specifications subject to change without notice.