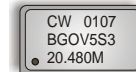
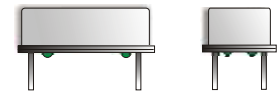


CRYSTAL CONTROLLED OSCILLATORS

14 PIN DIP 5.0V STRATUM 3 OCXO



BGOV5S3

DESCRIPTION

The Connor-Winfield BGOV5S3 is a hermetically sealed 14 Pin DIP, 5.0V Oven Controlled Voltage Controlled Crystal Oscillator (OCVCXO) HCMOS output operating over the Industrial Temperature Range of -40 to 85°C. The BGOV5S3 is designed for a higher stability Stratum 3 application requiring low jitter and tight stability.

FEATURES

- 5.0V OPERATION
- LOW JITTER <3pS RMS
- FREQUENCY STABILITY ±0.25ppm
- TEMPERATURE RANGE: -40 to 85°C
- FREQUENCY TOLERANCE OF ±4.6ppm OVER TEN YEARS

ORDERING INFORMATION

BGOV5S3 - 20.480MHZ

OCXO
SERIES

CENTER
FREQUENCY

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------|-------|---------|---------|---------|-------|------|
| Storage Temperature | | -55 | - | 100 | °C | |
| Supply Voltage | (Vcc) | -0.5 | - | 7.0 | Vdc | |
| Control Voltage | (Vc) | -0.5 | - | 7.0 | Vdc | |

OPERATING SPECIFICATIONS

TABLE 2.0

| PARAMETER | | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|--|-------|---------|----------|---------|---------|------|
| Center Frequency | (Fo) | 1.544 | - | 20.48 | MHz | |
| Frequency Calibration (Vc = 2.18V) | | -1.5 | - | 1.5 | ppm | 1, 4 |
| Frequency vs. change in Temperature | | -0.25 | - | 0.25 | ppm | 2 |
| Frequency vs. change in Supply Voltage | | -0.05 | - | 0.05 | ppm | 3 |
| Aging (Lifetime) | | -2.5 | - | 2.5 | ppm | |
| Aging (1 st Year) | | -1.5 | - | 1.5 | ppm | |
| Total Frequency Tolerance | | -4.6 | - | 4.6 | ppm | 5 |
| Operating Temperature Range | | -40 | - | 85 | °C | |
| Supply Voltage | (Vcc) | 4.75 | 5.00 | 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 | |
| Allan Variance (1 second) | | - | 5.00E-10 | - | | |
| SSB Phase Noise at 10Hz offset | | - | -90 | - | dBc/Hz | |
| SSB Phase Noise at 10KHz offset | | - | -130 | - | dBc/Hz | |
| Start Up Time: Oscillator | | - | - | 10 | mS | |
| Warm Up Time | | - | - | 5 | Minutes | 6 |
| TDEV @ 1.0 Sec. | | - | - | 1 | nS | |
| TDEV @ 4.0 Sec. | | - | - | 2 | nS | |

INPUT CHARACTERISTICS

TABLE 3.0

| PARAMETER | | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------------|------|---------|---------|---------|-------|------|
| Control Voltage Range | (Vc) | 0.5 | 2.18 | 4.1 | Vdc | |
| Frequency at Vc=0.5 Vdc | | -30 | - | -18 | ppm | 7 |
| Frequency at Vc=4.1 Vdc | | 18 | - | 30 | ppm | 7 |
| Slope of Frequency Adjust | | 10 | - | - | ppm/V | |
| Input Impedance | | 100k | - | - | Ohm | |

HCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

| 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) | (loh) | - | - | 4 | mA | |
| Duty Cycle at 50% of Vcc | | 45 | 50 | 55 | % | |
| Rise / Fall Time 10% to 90% | | - | - | 6 | nS | |

PACKAGE CHARACTERISTICS

TABLE 5.0

| | |
|---------|--|
| Package | 14 pin DIP, hermetically sealed, grounded case, welded package |
|---------|--|

Notes:

- 1) Initial calibration @ 25°C, Vc = 2.18V.
- 2) Frequency stability referenced to 25°C.
- 3) Frequency stability per 5% change in supply voltage.
- 4) At the time of shipment after 48 hours of operation.
- 5) Inclusive of calibration with Vc = 2.18V, operating temperature range, supply voltage change, load change, shock and vibration, 10 years aging.
- 6) 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
- 7) Referenced to Fo @ 25°C, Positive Transfer Characteristic.

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.

Gross Leak Test: Per MIL-STD-202, Method 112, Condition D. No bubbles in flourinert (FC-43) at 125°C ±5°C for 20 seconds.

SOLDERING

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

Resistance to Solder Heat: Per MIL-STD-202, Method 210, Condition C. Wave: Topside board-mount product, 260°C ±5°C for 20 Seconds.

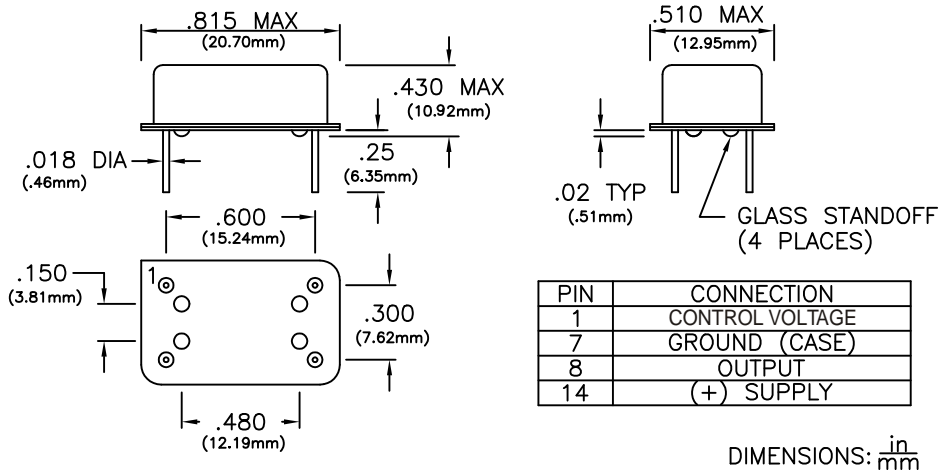
MECHANICAL CHARACTERISTICS

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

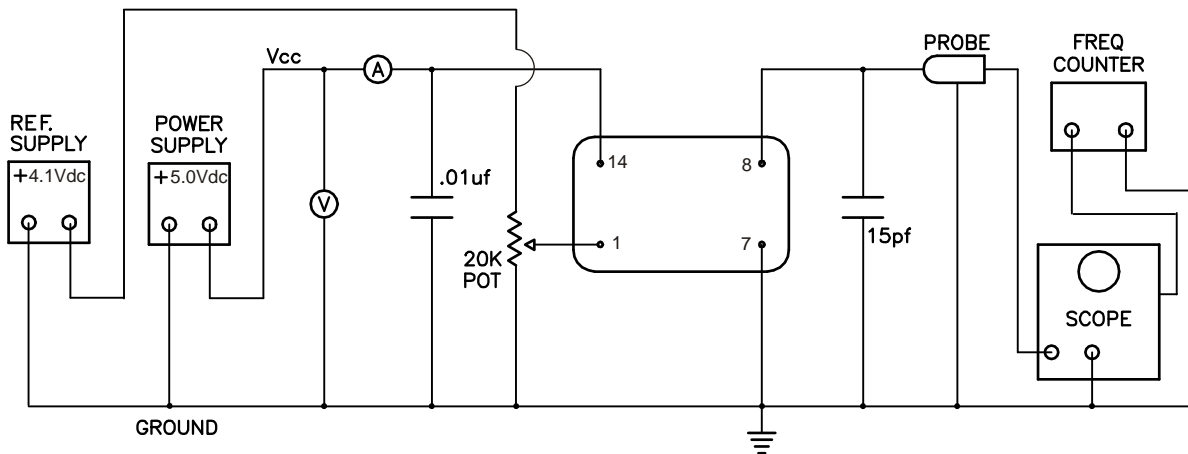
Shock: Per MIL-STD-202, Method 213, Condition D. 500G's, 1ms, half sine, 3 shocks per direction.

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

PACKAGE OUTLINE



TEST DIAGRAM



Specifications subject to change without notice.