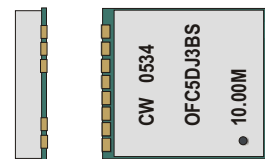


# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT 5.0V OXCO with SINEWAVE OUTPUT



**OFC5DJ3BS**

### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

| PARAMETER           | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------|-------|---------|---------|---------|-------|------|
| Storage Temperature |       | -40     | -       | 85      | °C    |      |
| Supply Voltage      | (Vcc) | -0.5    | -       | 7       | Vdc   |      |

### OPERATING SPECIFICATIONS

TABLE 2.0

| PARAMETER                               |       | MINIMUM                           | NOMINAL  | MAXIMUM | UNITS   | NOTE |
|---|-------|-----------------------------------|----------|---------|---------|------|
| Center Frequency                        | (Fo)  | 10                                | -        | 20      | MHz     | 1    |
| Standard Frequencies Available:         |       | 10 MHz, 13 MHz, 15 MHz, or 20 MHz |          |         |         |      |
| Frequency Calibration                   |       | -0.2                              | -        | 0.2     | ppm     | 2    |
| Frequency vs. Temperature Stability     |       | -20                               | -        | 20      | ppb     | 3    |
| Frequency vs. Voltage Stability (+/-5%) |       | -2                                | -        | 2       | ppb     |      |
| Frequency vs. Load Stability (+/-5%)    |       | -2                                | -        | 2       | ppb     |      |
| Aging: Daily                            |       | -1                                | -        | 1       | ppb/day | 4    |
| Aging: First Year                       |       | -50                               | -        | 50      | ppb     |      |
| Aging: Long Term (20 Years)             |       | -250                              | -        | 250     | ppb     |      |
| Total Frequency Tolerance (20 years)    |       | -500                              | -        | 500     | ppb     | 5    |
| Allen Variance: 1 second, 100 average.  |       | -                                 | 1.00E-10 | -       | RMS     |      |
| Operating Temperature Range             |       | -20                               | -        | 70      | °C      |      |
| Supply Voltage                          | (Vcc) | 4.75                              | 5.00     | 5.25    | Vdc     |      |
| Power Consumption: Turn On              |       | -                                 | -        | 3.75    | W       | 6    |
| Power Consumption: Steady-State         |       | -                                 | -        | 1.5     | W       | 6    |
| Start-Up Time                           |       |                                   |          | 500     | mS      | 7    |
| Warm Up                                 |       | -100                              | -        | 100     | ppb     | 8    |

### SINEWAVE OUTPUT CHARACTERISTICS

TABLE 3.0

| PARAMETER                       |  | MINIMUM | NOMINAL | MAXIMUM | UNITS  | NOTE |
|---------------------------------|--|---------|---------|---------|--------|------|
| LOAD                            |  | 45      | 50      | 55      | Ohms   |      |
| Output Power                    |  | 0       | 3       | -       | dBm    |      |
| Spurious Output                 |  |         |         | -80     | dBc    |      |
| SSB Phase Noise at 1Hz offset   |  | -       | -85     | -       | dBc/Hz |      |
| SSB Phase Noise at 10Hz offset  |  | -       | -110    | -       | dBc/Hz |      |
| SSB Phase Noise at 100Hz offset |  | -       | -135    | -       | dBc/Hz |      |
| SSB Phase Noise at 1KHz offset  |  | -       | -150    | -       | dBc/Hz |      |
| SSB Phase Noise at 10KHz offset |  | -       | -155    | -       | dBc/Hz |      |

### RESTALLIZATION TIME

TABLE 4.0

| Off Time     | Restabilization Time  | NOTE |
|--------------|-----------------------|------|
| < 1 Hour     | < 2 Hours             | 9    |
| < 6 Hours    | < 12 Hours            | 9    |
| < 24 Hours   | < 48 Hours            | 9    |
| 1 to 16 Days | 48 Hours + ¼ Off Time | 9    |
| > 16 Days    | < 6 Days              | 9    |

### PACKAGE CHARACTERISTICS

TABLE 5.0

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

### ENVIRONMENTAL CHARACTERISTICS

TABLE 6.0

|           |  |
|-----------|--|
| Shock     | 100G's, 6mS, halvesine per MIL-STD-202F, Method 213B, Test Condition C               |
| Vibration | 0.06" D.A. or 10G peak 10 to 500 Hz, per MIL-STD-202F, Method 204D, Test condition A |

### PROCESS RECOMMENDATIONS

TABLE 7.0

|               |  |
|---------------|--|
| Solder Reflow | The component solder used 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 |
| Wash          | Ultrasonic cleaning is not recommended.  |

### DESCRIPTION

The Connor-Winfield OFC5DJ3BS is a 5V Surface Mount Oven Controlled Crystal Oscillator (OCXO) with a Sinewave output. The OFC5J3BS is designed for Wireless applications requiring low Phase Noise and tight frequency stability.

### FEATURES

- FIXED FREQUENCY OCXO
- FREQUENCY STABILITY: ±20ppb
- TEMPERATURE RANGE: -20 to 70°C
- 5.0V OPERATION
- SINEWAVE OUTPUT
- LOW PHASE NOISE
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING

### ORDERING INFORMATION

OFC5DJ3BS - 10.00MHz

OCXO  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

# CRYSTAL CONTROLLED OSCILLATORS

**Notes:**

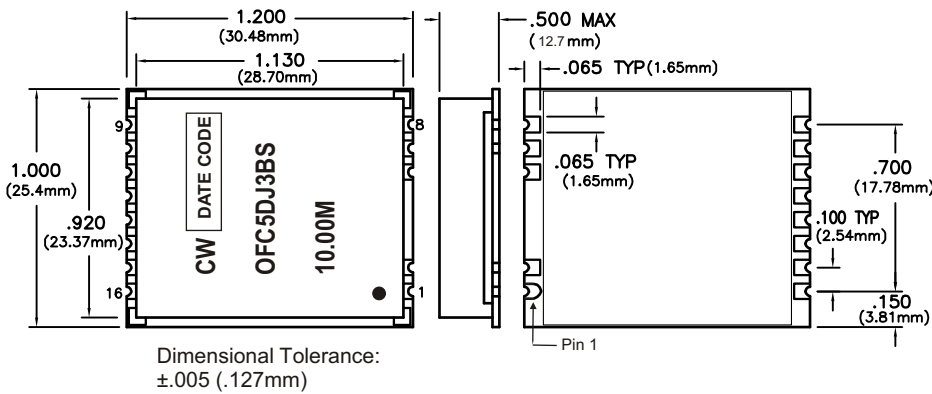
- 1) Labels will include the calibration frequency at the time of ship.
- 2) Initial calibration @ 25 C at the time of shipment.
- 3) Overall frequency stability referenced to measurement at 25 C.
- 4) After ten days of continuous operation.
- 5) Inclusive of calibration, frequency stability vs. change in temperature, supply voltage change, load change, hock and vibration, 20 years aging.
- 6) Vcc = 5.0Vdc.
- 7) From Vcc=90% of final value. No more than 16 transitions at start-up before oscillator has started.
- 8) Measured @ 0 C, within 5 minutes, referenced one hour after turn-on.
- 9) For a given off time, the time required to meet daily aging, short-term stability.

**PIN CONNECTIONS**

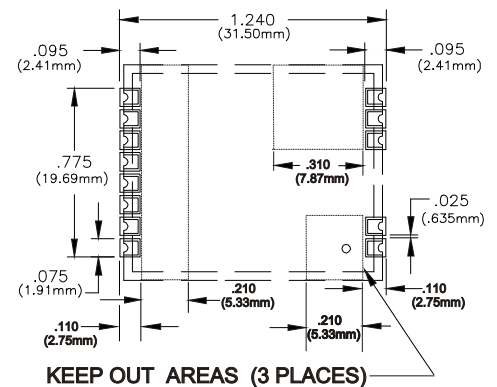
TABLE 8.0

| Pin | Function |
|-----|----------|
| 1   | N/C      |
| 2   | Ground   |
| 6   | N/C      |
| 7   | Ground   |
| 8   | Vcc      |
| 9   | Vcc      |
| 10  | Ground   |
| 11  | Ground   |
| 12  | N/C      |
| 13  | Ground   |
| 14  | Output   |
| 15  | Ground   |
| 16  | N/C      |

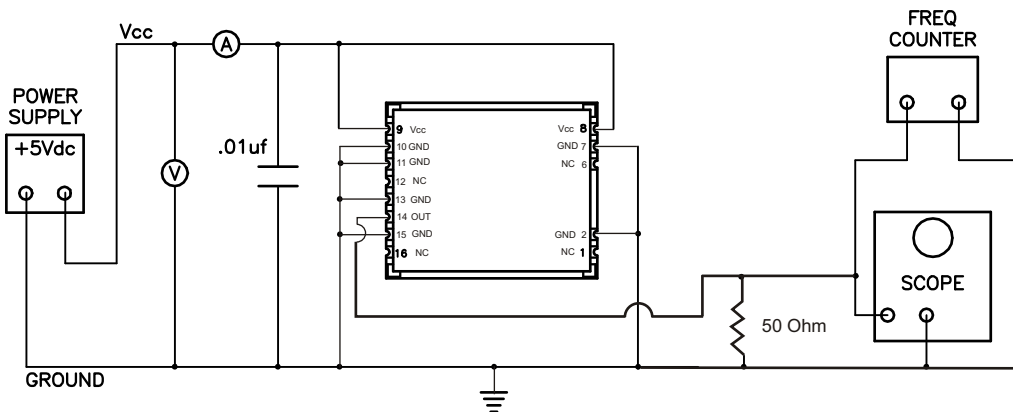
**PACKAGE LAYOUT**



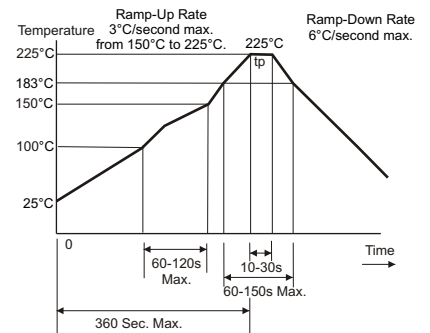
**SUGGESTED PAD LAYOUT (TOP VIEW)**



**TEST CIRCUIT**



**SOLDER PROFILE**



Specifications subject to change without notice.