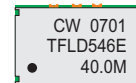


# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT 9x14mm 3.3V LVCMOS TCXO



## TFLD546E

### ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

| PARAMETER           | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------|-------|---------|---------|---------|-------|------|
| Storage Temperature |       | -40     | -       | 85      | °C    |      |
| Supply Voltage      | (Vcc) | -0.6    | -       | 6       | Vdc   |      |

### OPERATING SPECIFICATIONS

TABLE 2.0

| PARAMETER                        |       | MINIMUM | NOMINAL | MAXIMUM | UNITS  | NOTE |
|----------------------------------|-------|---------|---------|---------|--------|------|
| Frequency Range                  | (Fo)  | 12.80   | -       | 156.25  | MHz    |      |
| Frequency Calibration @ 25°C     |       | -1.5    | -       | 1.5     | ppm    |      |
| Frequency Tolerance              |       | -4.6    | -       | 4.6     | ppm    | 1    |
| Operating Temperature Range      |       | 0       | -       | 70      | °C     |      |
| Supply Voltage                   | (Vcc) | 3.135   | 3.3     | 3.465   | Vdc    |      |
| Supply Current                   | (Icc) | -       | 9       | 25      | mA     |      |
| Period Jitter                    |       | -       | 3       | 5       | ps rms |      |
| Phase Jitter (BW=12kHz to 20MHz) |       | -       | 0.5     | 1       | ps rms |      |
| SSB Phase Noise at 10Hz offset   |       | -       | -60     | -       | dBc/Hz |      |
| SSB Phase Noise at 100Hz offset  |       | -       | -90     | -       | dBc/Hz |      |
| SSB Phase Noise at 1KHz offset   |       | -       | -120    | -       | dBc/Hz |      |
| SSB Phase Noise at 10KHz offset  |       | -       | -135    | -       | dBc/Hz |      |
| SSB Phase Noise at 100KHz offset |       | -       | -145    | -       | dBc/Hz |      |

### INPUT CHARACTERISTICS FOR TRI-STATE ENABLE / DISABLE

TABLE 3.0

| PARAMETER             | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|-----------------------|-------|---------|---------|---------|-------|------|
| Enable Voltage (High) | (Vih) | 70%Vcc  | -       | -       | Vdc   | 2    |
| Disable Voltage (Low) | (Vil) | -       | -       | 30%Vcc  | Vdc   |      |

### LVCMOS OUTPUT CHARACTERISTICS

TABLE 4.0

| PARAMETER                   |       | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|-----------------------------|-------|---------|---------|---------|-------|------|
| LOAD                        |       | -       | -       | 15      | pF    |      |
| Voltage (High)              | (Voh) | 2.0     | -       | -       | 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% |       | -       | 3       | 5       | ns    |      |

### PACKAGE CHARACTERISTICS

TABLE 5.0

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

### PROCESS RECOMMENDATIONS

TABLE 6.0

|                   |  |
|-------------------|--|
| Soldering Process | RoHS 5/6 compliant. See solder profile page 2. |
| Wash              | Ultrasonic cleaning is not recommended.        |

#### Note:

- Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 20 years aging.
- Oscillator output is enabled with no connection on pad 1. Output is at high impedance when disabled.

### DESCRIPTION

The Connor-Winfield TFLD546E is a Surface Mount Temperature Compensated Crystal Oscillator (TCXO). Operating at 3.3Vdc, the TFLD546E will maintain  $\pm 4.6$ ppm frequency tolerance over 20 years. The TFLD546E is offered in a surface mount package for automated assembly.

### FEATURES

3.3V OPERATION

OVERALL FREQUENCY TOLERANCE:  
 $\pm 4.6$ ppm OVER 20 YEARS.

TEMPERATURE RANGE: 0 to 70°C

LOW JITTER <1ps RMS

TRI-STATE ENABLE/DISABLE  
FUNCTION

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

RoHS 5/6 COMPLIANT

### ORDERING INFORMATION

TFLD546E - 040.0M

TCXO  
SERIES

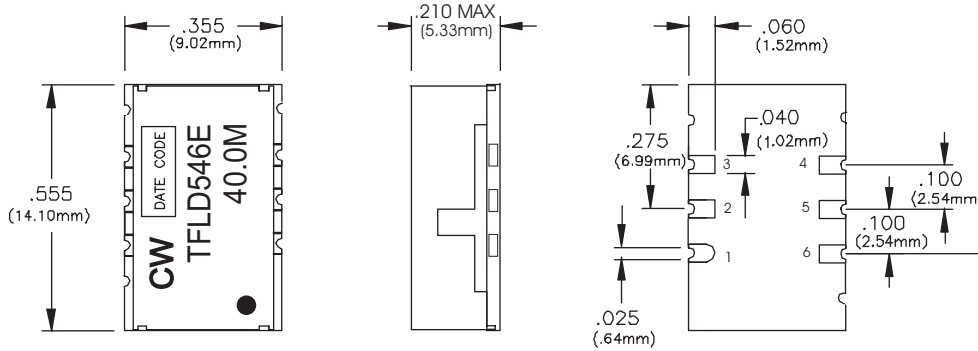
CENTER  
FREQUENCY

Specifications subject to change without notice.

**PRODUCT DATA SHEET**

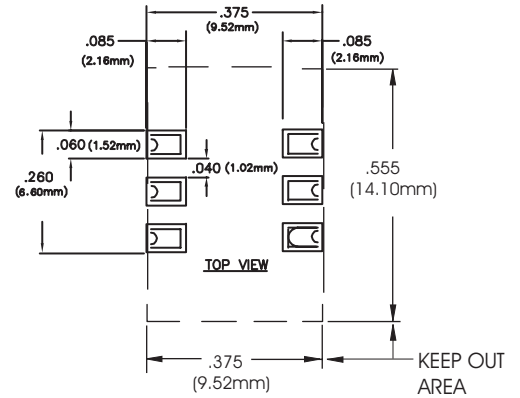
**CRYSTAL CONTROLLED OSCILLATORS**

**Package Outline**

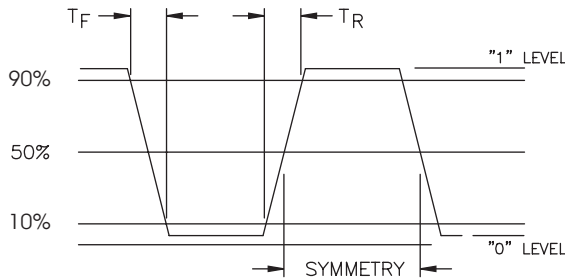


Dimensional Tolerance:  
 $\pm .005$  (.127mm)

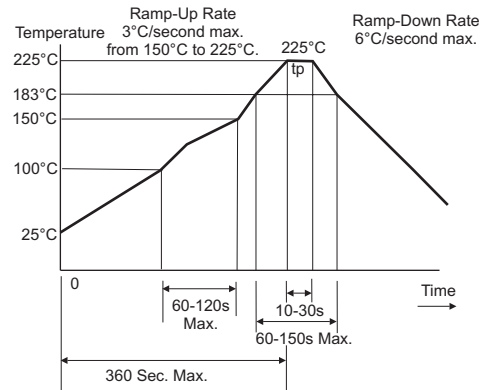
**Suggested Pad Layout**



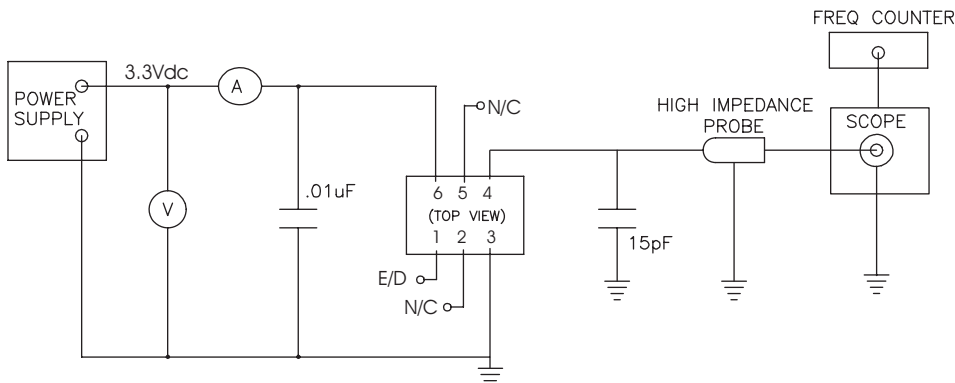
**Output Waveform**



**Solder Profile**



**Test Circuit**



**Pad Connections**

| Pad | Connection       |
|-----|------------------|
| 1   | Enable / Disable |
| 2   | N/C              |
| 3   | Ground           |
| 4   | Output           |
| 5   | N/C              |
| 6   | Vcc              |

Specifications subject to change without notice.