

# CRYSTAL CONTROLLED OSCILLATORS



## SURFACE MOUNT 9x14mm 3.3V LVCMOS TCXO



### TFLD546

#### 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   | -       | 155.52  | 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 |      |

#### PHASE NOISE CHARACTERISTICS

TABLE 4.0

|                                     |  |       |       |        |        |  |
|-------------------------------------|--|-------|-------|--------|--------|--|
| Typical Phase Noise Measurements @: |  | 12.80 | 77.76 | 155.52 | MHz    |  |
| SSB Phase Noise at 10Hz offset      |  | -60   | -60   | -50    | dBc/Hz |  |
| SSB Phase Noise at 100Hz offset     |  | -90   | -90   | -80    | dBc/Hz |  |
| SSB Phase Noise at 1KHz offset      |  | -120  | -120  | -115   | dBc/Hz |  |
| SSB Phase Noise at 10KHz offset     |  | -135  | -135  | -130   | dBc/Hz |  |
| SSB Phase Noise at 100KHz offset    |  | -145  | -145  | -140   | dBc/Hz |  |

#### LVCMOS OUTPUT CHARACTERISTICS

TABLE 5.0

| 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 6.0

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

#### PROCESS RECOMMENDATIONS

TABLE 7.0

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

Note:

- 1) Inclusive of calibration, frequency vs. temperature stability, supply voltage change, load change, shock and vibration, 20 years aging.

#### DESCRIPTION

The Connor-Winfield TFLD546 is a Surface Mount Temperature Compensated Crystal Oscillator (TCXO). Operating at 3.3Vdc, the TFLD546 will maintain  $\pm 4.6$ ppm frequency tolerance over 20 years. The TFLD546 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

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

RoHS 5/6 COMPLIANT

#### ORDERING INFORMATION

TFLD546 - 020.0M

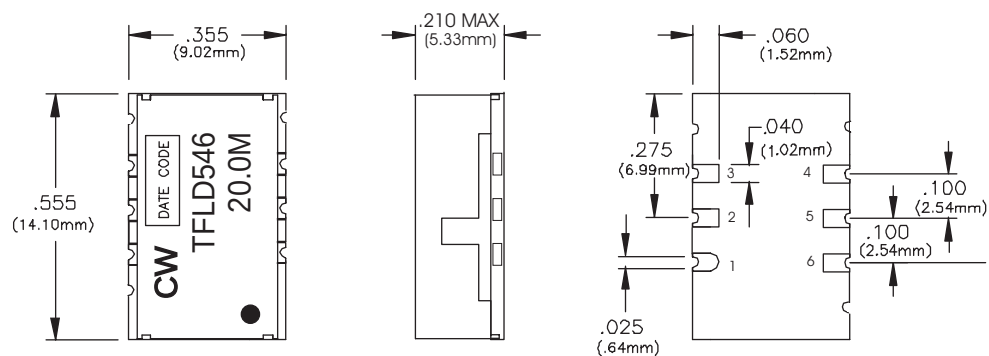
TCXO  
SERIES

CENTER  
FREQUENCY

SHENZHEN YIJIN ELECTRONICS CO: LTD TEL: 0755-27876565

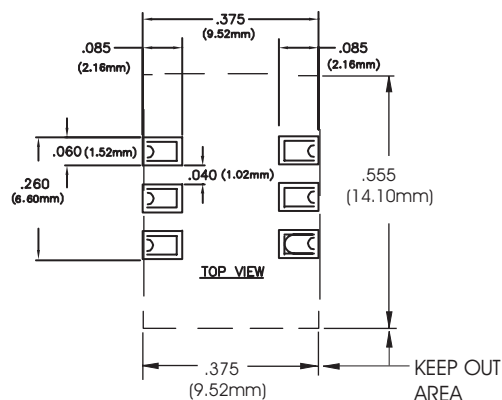
18924600166 QQ: 857950243 <http://www.vc-tcxo.com>

### Package Outline

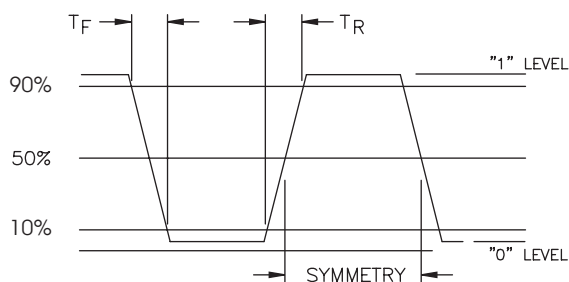


Dimensional Tolerance:  
 $\pm .005$  (.127mm)

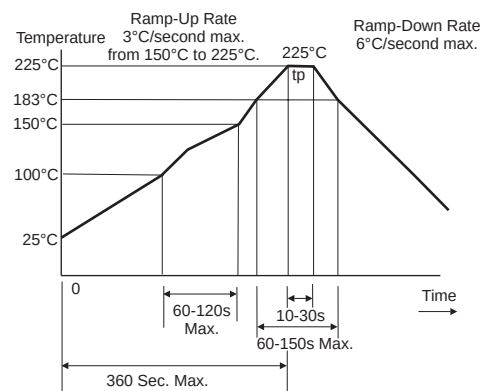
### Suggested Pad Layout



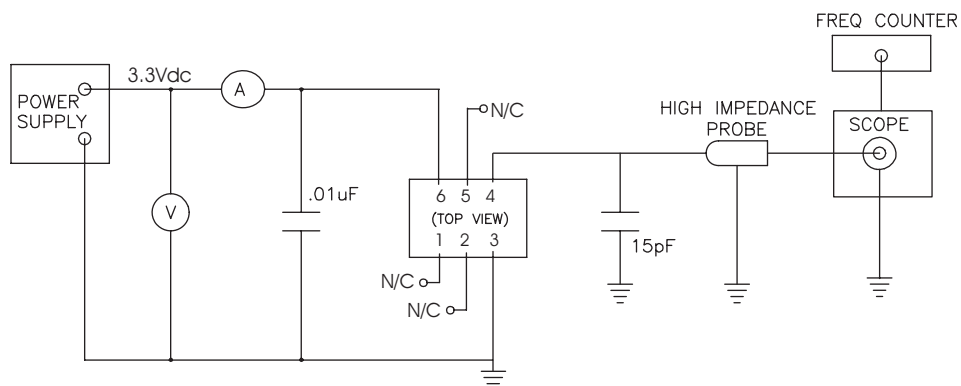
### Output Waveform



### Solder Profile



### Test Circuit



### Pad Connections

TABLE 8.0

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