

CRYSTAL CONTROLLED OSCILLATORS

SURFACE MOUNT 3.3V HCMOS TCXO



TFLD546EG

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 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 | |
| Jitter (BW=10Hz to 20MHz) | | - | - | 5 | ps rms | |
| Jitter (BW=12kHz to 20MHz) | | - | - | 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

TABLE 3.0

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

HCMOS 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 4.0

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

PROCESS RECOMMENDATIONS

TABLE 6.0

| | |
|---------------|--|
| 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. |

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 TFLD546EG is a Surface Mount Temperature Compensated Crystal Oscillator (TCXO). Operating at 3.3Vdc, the TFLD546EG5 will maintain ±4.6ppm frequency tolerance over 20 years. The TFLD546EG is offered in a surface mount package for automated assembly.

FEATURES

- 3.3V OPERATION
- OVERALL FREQUENCY TOLERANCE: ±4.6ppm 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 COMPLIANT / LEAD FREE

ORDERING INFORMATION

TFLD546EG - 40.00MHz

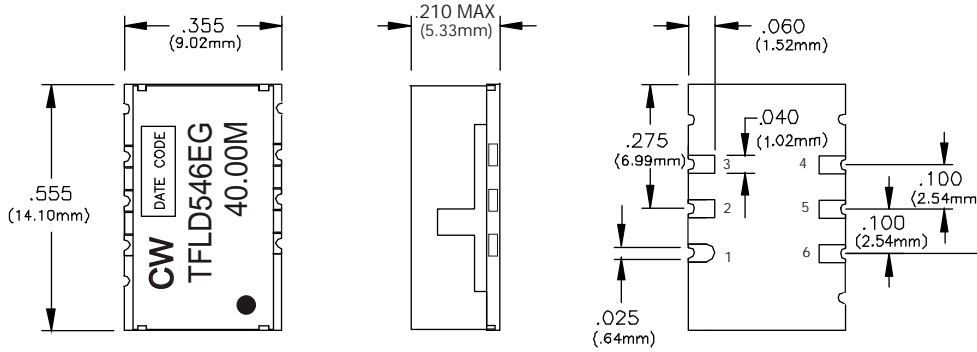
TCXO
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

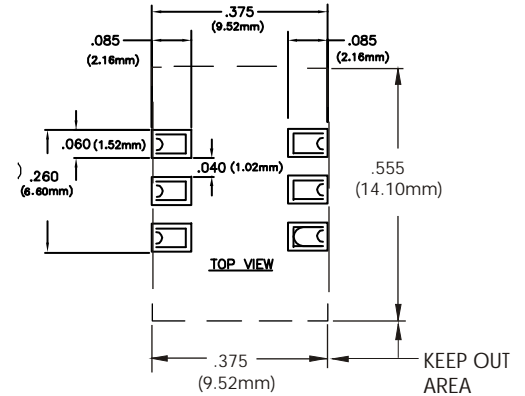
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Package Layout

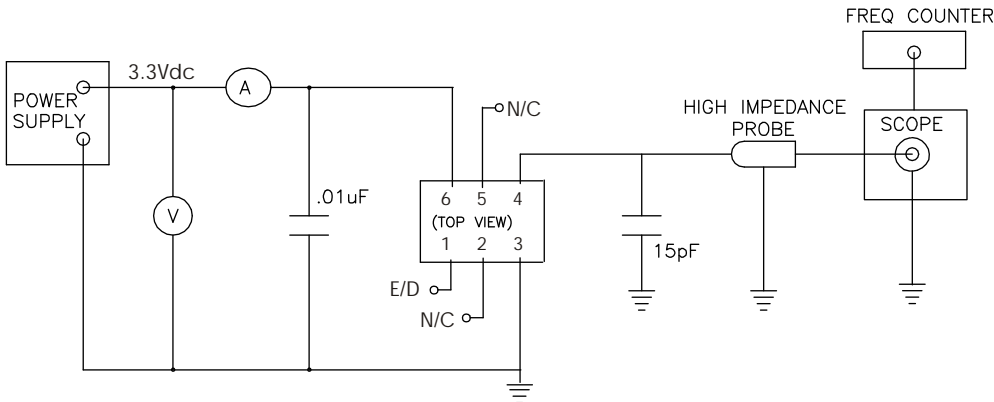


Dimensional Tolerance:
±.005 (.127mm)

Suggested Pad Layout



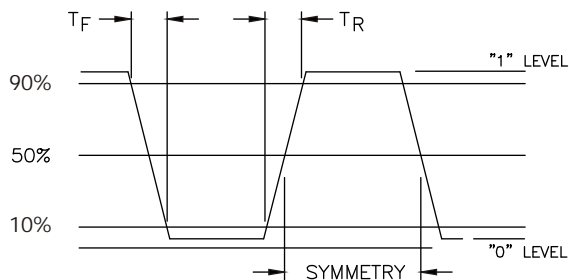
Test Circuit



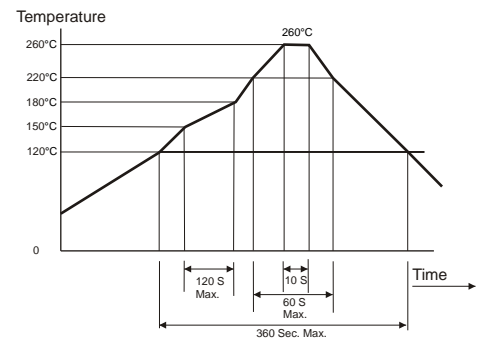
Pin Connections

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

Output Waveform



Reflow Profile



Specifications subject to change without notice.