

# CRYSTAL CONTROLLED OSCILLATORS

## SURFACE MOUNT 3.3V PECL CLOCK



### EML5313

#### ABSOLUTE MAXIMUM RATINGS

**TABLE 1.0**

| PARAMETER           | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------|-------|---------|---------|---------|-------|------|
| Storage Temperature |       | -55     | -       | 125     | °C    |      |
| Supply Voltage      | (Vcc) | -0.5    | -       | 7.0     | Vdc   |      |

#### OPERATING SPECIFICATIONS

**TABLE 2.0**

| PARAMETER                       |       | MINIMUM | NOMINAL | MAXIMUM | UNITS  | NOTE |
|---------------------------------|-------|---------|---------|---------|--------|------|
| Center Frequency                | (Fo)  | 19.44   | -       | 164     | MHz    |      |
| Total Frequency Tolerance       |       | -100    | -       | 100     | ppm    | 1    |
| Operating Temperature Range     |       | 0       | -       | 70      | °C     |      |
| Supply Voltage                  | (Vcc) | 3.135   | 3.3     | 3.465   | Vdc    |      |
| Supply Current                  | (Icc) | -       | -       | 60      | 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  |       | -       | -100    | -       | dBc/Hz |      |
| SSB Phase Noise at 10KHz offset |       | -       | -125    | -       | dBc/Hz |      |
| SSB Phase Noise at 10KHz offset |       | -       | -135    | -       | dBc/Hz |      |

#### PECL OUTPUT CHARACTERISTICS

**TABLE 3.0**

| PARAMETER                   |       | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|-----------------------------|-------|---------|---------|---------|-------|------|
| LOAD                        |       | -       | -       | 50      | Ohms  | 2    |
| Voltage (High)              | (Voh) | 2.275   | -       | -       | Vdc   |      |
| (Low)                       | (Vol) | -       | -       | 1.68    | Vdc   |      |
| Duty Cycle                  |       | 45      | 50      | 55      | %     | 3    |
| Rise / Fall Time 20% to 80% |       | -       | -       | 1       | nS    |      |

#### PACKAGE CHARACTERISTICS

**TABLE 4.0**

|         |                                                |
|---------|------------------------------------------------|
| Package | Hermetically sealed, leadless ceramic package. |
|---------|------------------------------------------------|

#### Notes

- Includes calibration, stability vs. temperature, supply and load variations, shock, vibration and aging (10 years).
- Output must be terminated into 50 ohms to Vcc – 2V or Thevenin equivalent.
- Duty Cycle measured at 1.977V

#### DESCRIPTION

The Connor-Winfield EML5313 is a fixed frequency surface mount Crystal Controlled Oscillator (XO) designed for applications requiring low jitter and tight Frequency stability. Operating at 3.3V supply voltage, the EML5313 provides LVPECL compatible outputs.

#### FEATURES

3.3V OPERATION

LVPECL DIFFERENTIAL OUTPUTS

LOW JITTER <1ps RMS

OVERALL FREQUENCY TOLERANCE:  
±100ppm

TEMPERATURE RANGE:  
0 to 70°C

SURFACE MOUNT PACKAGE

TAPE AND REEL PACKAGING

#### ORDERING INFORMATION

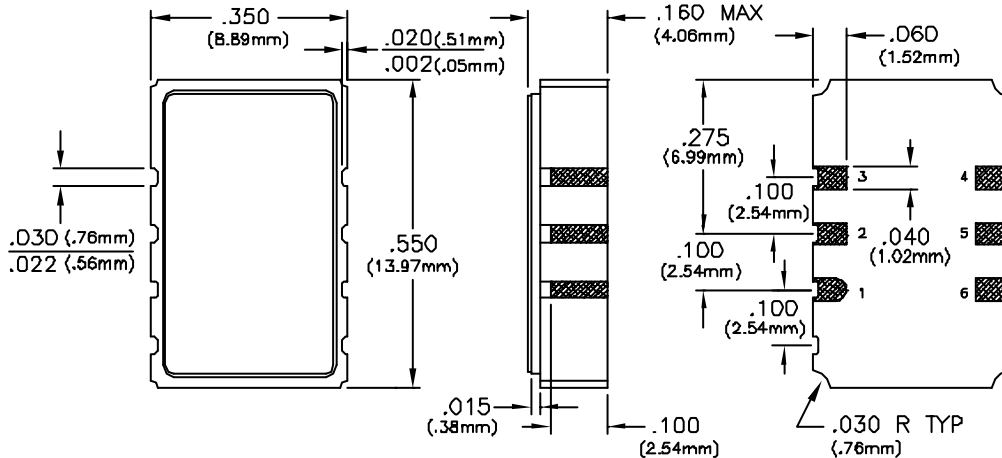
**EML5313 - 100.00MHz**

PECL  
SERIES

CENTER  
FREQUENCY

Specifications subject to change without notice.

# CRYSTAL CONTROLLED OSCILLATORS

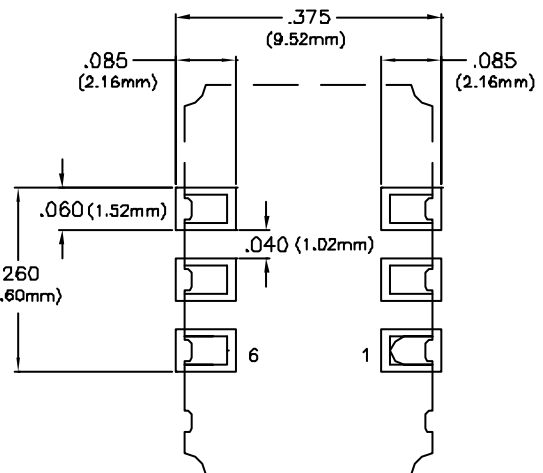
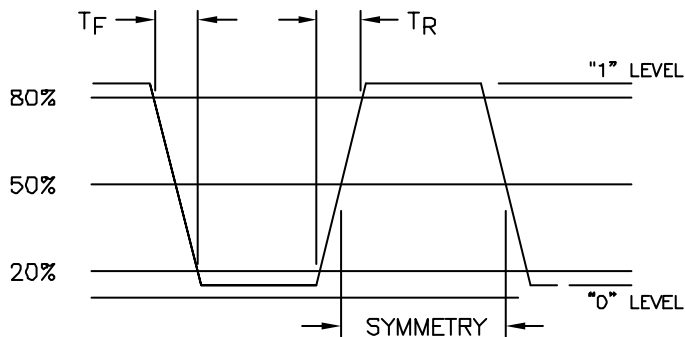


| PIN | CONNECTION       |
|-----|------------------|
| 1   | $\bar{Q}$ OUTPUT |
| 2   | N/C              |
| 3   | GND              |
| 4   | Q OUTPUT         |
| 5   | N/C              |
| 6   | Vcc              |

NOTE 1: Metal cover is tied to pin 3

## NO LEADS SUGGESTED PAD LAYOUT

## OUTPUT WAVEFORM



## TEST CIRCUIT

