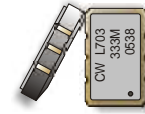


CRYSTAL CONTROLLED OSCILLATORS

CERAMIC SURFACE MOUNT

3.3V LVDS 5x7.0mm

HIGH FREQUENCY CLOCK OSCILLATOR



L703

ABSOLUTE MAXIMUM RATINGS

TABLE 1.0

| PARAMETER | UNITS | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|---------------------|-------|---------|---------|---------|-------|------|
| Storage Temperature | | -55 | - | 125 | °C | |
| Supply Voltage | (Vcc) | -0.5 | - | 4.6 | Vdc | |
| Input Voltage | (Vcc) | -0.5 | - | Vcc+0.5 | Vdc | |

OPERATING SPECIFICATIONS

TABLE 2.0

| PARAMETER | | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|----------------------------------|-------|---------|---------|---------|--------|------|
| Center Frequency | (Fo) | 200 | - | 800 | MHz | |
| Total Frequency Tolerance | | -100 | - | 100 | ppm | 1 |
| Operating Temperature Range | | 0 | - | 85 | °C | |
| Supply Voltage | (Vcc) | 3.135 | 3.3 | 3.465 | Vdc | |
| Supply Current | (Icc) | - | - | 60 | mA | |
| Jitter (BW=10Hz to 20MHz) | | - | - | 10 | ps rms | |
| Jitter (BW=12kHz to 80MHz) | | - | - | 3 | ps rms | |
| SSB Phase Noise at 10Hz offset | | - | -75 | - | dBc/Hz | |
| SSB Phase Noise at 100Hz offset | | - | -95 | - | dBc/Hz | |
| SSB Phase Noise at 1KHz offset | | - | -110 | - | dBc/Hz | |
| SSB Phase Noise at 10KHz offset | | - | -125 | - | dBc/Hz | |
| SSB Phase Noise at 100KHz offset | | - | -120 | - | dBc/Hz | |

INPUT CHARACTERISTICS

TABLE 3.0

| PARAMETER | | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|-----------------------------|-------|---------|---------|---------|-------|------|
| Disable Input Voltage (Low) | (Vil) | - | - | 0.3Vcc | Vdc | 2 |
| Enable Input Voltage (High) | (Vih) | 0.7Vcc | - | - | Vdc | 2 |

LVDS OUTPUT CHARACTERISTICS

TABLE 4.0

| PARAMETER | | MINIMUM | NOMINAL | MAXIMUM | UNITS | NOTE |
|-----------------------------|-------|---------|---------|---------|-------|------|
| LOAD | | - | - | 100 | Ohms | 3 |
| Output Differential Voltage | (Vod) | 250 | - | 450 | mV | |
| Duty Cycle at 50% Level | | 45 | 50 | 55 | % | 4 |
| Rise / Fall Time | | - | 0.6 | 1.0 | nS | |

PACKAGE CHARACTERISTICS

TABLE 5.0

| | |
|---------|--|
| Package | Hermetically sealed ceramic package with grounded metal cover. |
|---------|--|

PROCESS RECOMMENDATIONS

TABLE 6.0

| | |
|---------------|---|
| Solder Reflow | SMD product suitable for Convection Reflow soldering. Peak temperature 260°C. Maximum time above 220°C, 60 seconds. |
|---------------|---|

- Notes Includes calibration @ 25°C, frequency stability vs. temperature, supply and load variations, shock, vibration and 20 years aging.
- When the oscillator is disabled, the outputs are at High Impedance. Output is enabled with no connection on pad 1.
- Vod measured with 100-ohm resistor between the true output and the complementary output.
- Duty Cycle measured at 50% of output swing.

DESCRIPTION

The Connor Winfield L703 is a Fixed Frequency, Surface Mount Crystal Controlled Oscillator (XO) designed for applications requiring low jitter and a ±100ppm, 0 to 85°C overall overall frequency tolerance, LVDS Differential Outputs and Tri-state Enable / Disable function. The L703 is designed using a 2X or 4X PLL multiplication to achieve the high output frequencies.

FEATURES

- 3.3V OPERATION
- LVDS DIFFERENTIAL OUTPUTS
- ENABLE / DISABLE
- LOW JITTER <3ps RMS
- OVERALL FREQUENCY TOLERANCE ±100ppm
- TEMPERATURE RANGE: 0 to 85°C
- SURFACE MOUNT PACKAGE
- TAPE AND REEL PACKAGING
- RoHS COMPLIANT

ORDERING INFORMATION

L703 - 333MHz

CLOCK
SERIES

CENTER
FREQUENCY

Specifications subject to change without notice.

CRYSTAL CONTROLLED OSCILLATORS

Pin Connection

TABLE 7.0

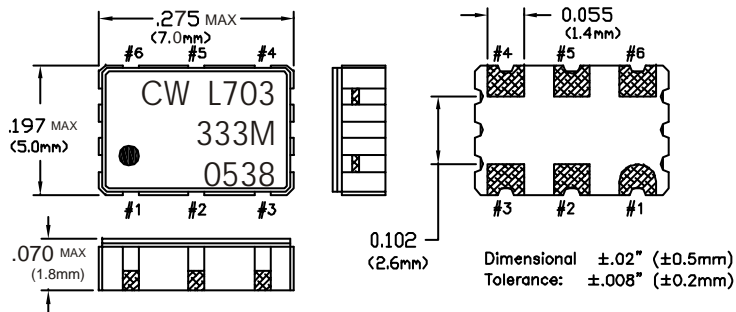
| Pin | Function |
|-----|-----------------------|
| 1 | Enable / Disable |
| 2 | N/C |
| 3 | Ground (Case) |
| 4 | Output Q |
| 5 | Comp Output \bar{Q} |
| 6 | Vcc |

Enable / Disable Function

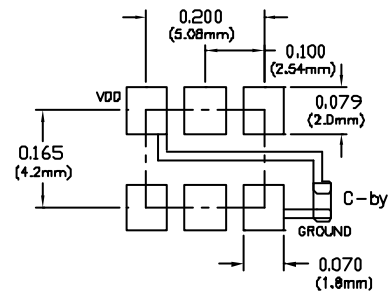
TABLE 8.0

| Enable / Disable Function (Pad 1) | Output |
|-----------------------------------|--------------------------|
| High or Open | Enable |
| Low | Disable (High Impedance) |

Package Outline and Dimensions

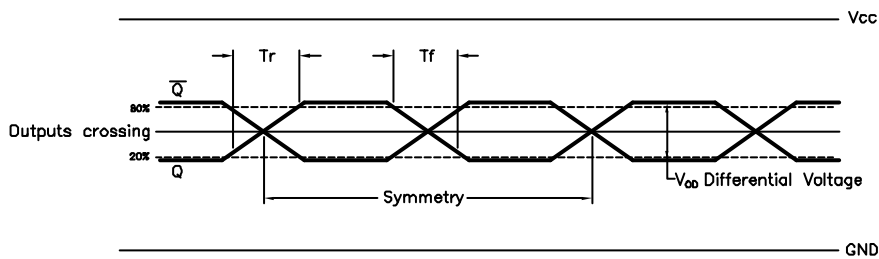


Suggested Pad Layout

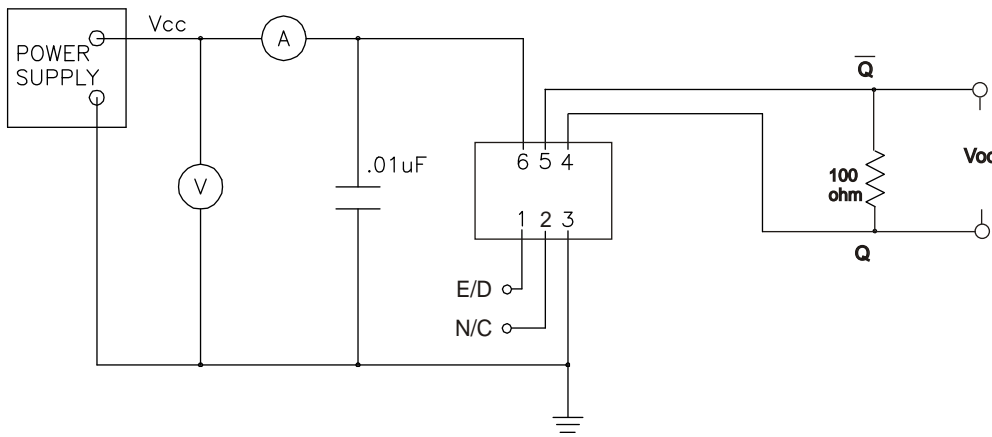


Bypass capacitor, C-by, should be ceramic capacitor $\geq .01\mu\text{f}$.

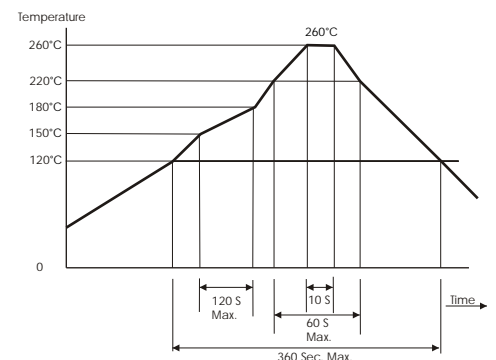
Output Waveform



Test Circuit



Solder Profile



Specifications subject to change without notice.