

FEATURES

- ✓ Low Phase Noise Performance
- ✓ SMD Construction
- ✓ Tape and Reel Compatibility

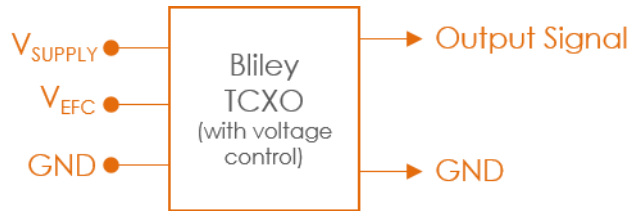
Temperature Controlled Crystal Oscillator

#blileytakesyoufurther

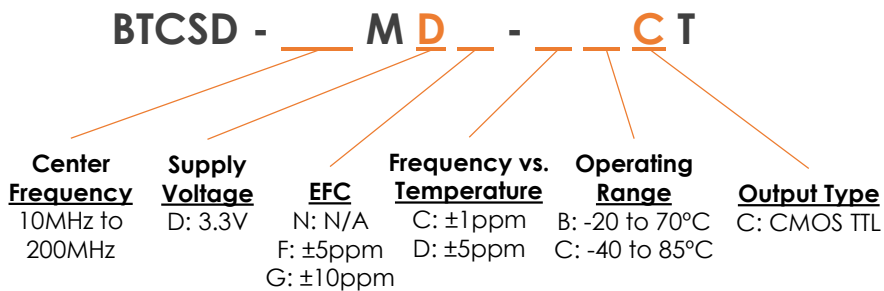
Description

Bliley TCVCXO's are capable of meeting Frequency vs. Temperature stabilities which rival traditional "Ovenized Oscillator" Technology. This coupled with design topologies meeting the harshest Mil-Standards makes Bliley TCXO's the choice of many system designers for mobile equipment.

Block Diagram



Part Number Configuration



*Not all combinations of options may be possible

**Other options may be available

Performance Specifications

| Parameter | Conditions | Values | | | Unit |
|--|--|--------|----------|------|-------|
| | | MIN | TYP | MAX | |
| Frequency Range | Analog Fundamental | 10 | 120 | 200 | MHz |
| Initial Frequency Tolerance ¹ | Tested at +25°C | | | ±1.5 | ppm |
| Frequency Stability | | | | | |
| vs. Temperature | See Options (Max) Referenced to +25°C | | ±1, ±5 | | ppm |
| vs. Load | 10% Change | | | ±0.3 | ppm |
| vs. Supply Voltage | 5% Change | | | ±0.3 | ppm |
| Aging | 1 st Year | | | ±1 | ppm |
| Supply Voltage | ±5% | 3.13 | 3.3 | 3.47 | Vdc |
| Current Consumption | | | | 45 | mA |
| Start-up Time | | | 3 | | mSec |
| Electronic Frequency Control | | | | | |
| Voltage Range | | 0 | | 3.3 | Vdc |
| Center Voltage | | | 1.65 | | Vdc |
| Frequency Range | See Options (Min) | | ±5, ±10 | | ppm |
| Slope | | | positive | | |
| Input Impedance | | | 100 | | kΩ |
| Linearity | | | 10 | | % |
| G-Sensitivity | | | 2.0 | | ppb/G |
| Moisture Sensitivity Level | | | 1 | | |

1: Initial tolerance only applicable to parts without EFC/voltage control

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Performance Specifications

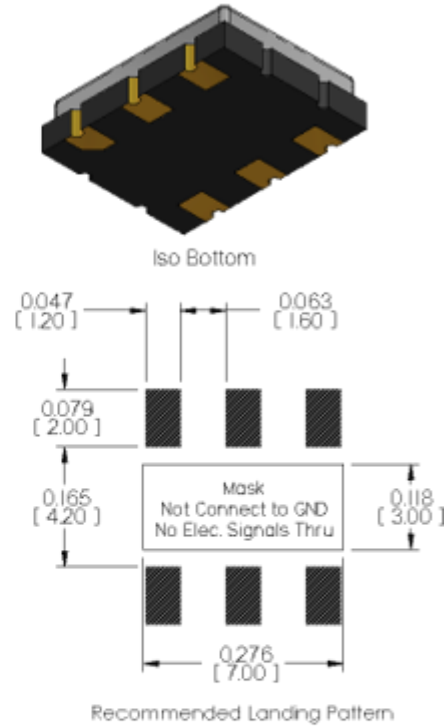
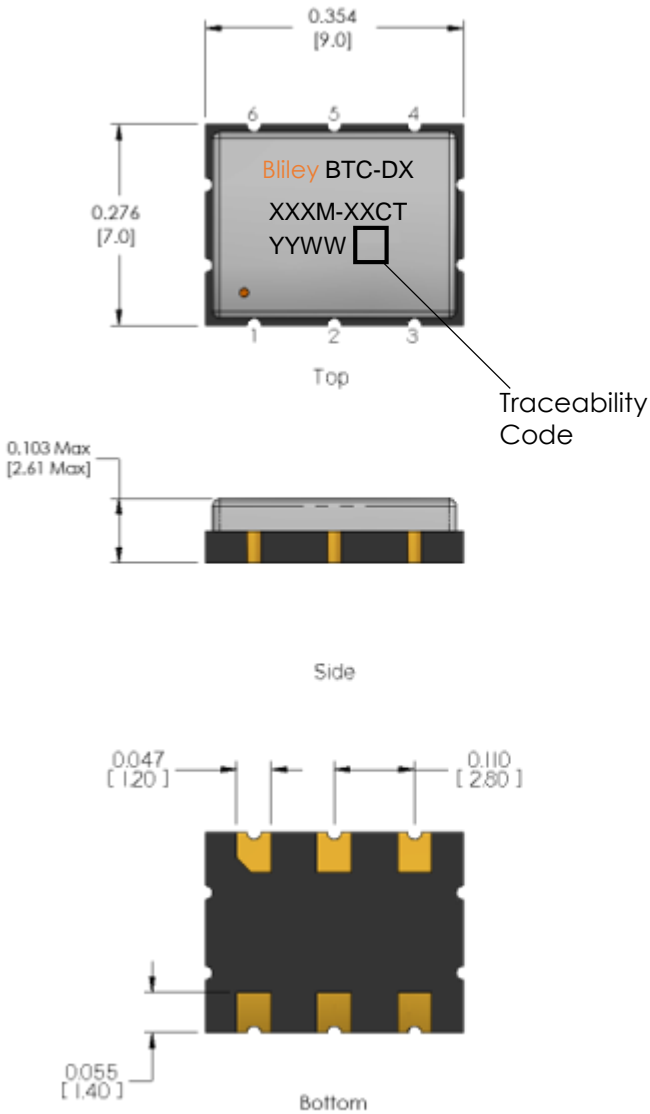
| Parameter | Conditions | Values | | | Unit |
|-------------------------------|------------|--------|-----|------|------|
| Output Characteristics (CMOS) | | MIN | TYP | MAX | |
| High Output Level | Logic "1" | 2.97 | | | Vdc |
| Low Output Level | Logic "0" | | | 0.33 | Vdc |
| Rise/Fall Time | | | 1 | | nSec |
| Duty Cycle | | 45 | 50 | 55 | % |
| Load | | | | 15 | pF |

| Parameter | Conditions | Values | | | Unit |
|-----------------------|----------------|--------|------|-----|--------|
| Phase Noise | | TYP | | | |
| Phase Noise (120 MHz) | Tested at 25C | | | | |
| | 10Hz | | -69 | | dBc/Hz |
| | 100Hz | | -94 | | dBc/Hz |
| | 1kHz | | -112 | | dBc/Hz |
| | 10kHz | | -119 | | dBc/Hz |
| | 100kHz | | -139 | | dBc/Hz |
| Phase Jitter (rms) | 12kHz to 20MHz | | | | |
| | 120MHz | | | 1.1 | pSec |

Environmental Compliance

| Parameter | Conditions | Values | | | Unit |
|-----------------------|--|--------|-----|-----|------|
| | | MIN | TYP | MAX | |
| Operating Temperature | Option B | -20 | | +70 | °C |
| | Option C | -40 | | +85 | °C |
| Storage Temperature | | -45 | | +85 | °C |
| Solderability | MIL-STD-202 Method 208 | | | | |
| Solvent Resistance | MIL-STD-202 Method 215 | | | | |
| Shock | MIL-STD-202 Method 213 Test Condition I | | | | |
| Vibration | MIL-STD-202 Method 204 Test Condition C | | | | |
| Thermal Shock | MIL-STD-202 Method 107 Test Condition B-1 | | | | |
| Seal | MIL-STD-202 Method 112 Test Condition C & D | | | | |

Physical Specifications



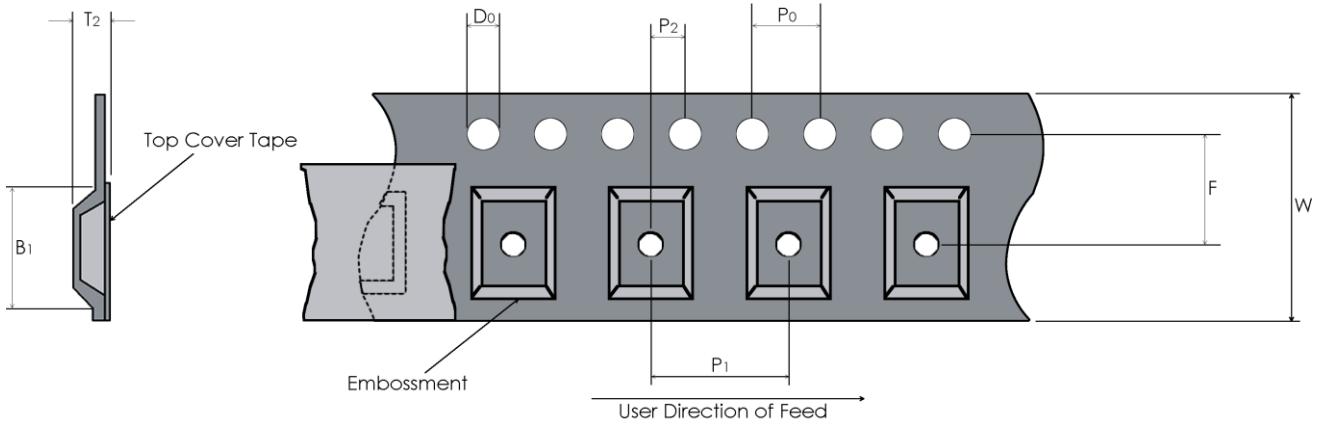
| PIN | FUNCTION |
|-----|----------------|
| 1 | N.C. |
| 2 | ByPass/EFC |
| 3 | Ground |
| 4 | RF Output |
| 5 | N.C. |
| 6 | Supply Voltage |

Tolerances (mm) .X = ± 0.5, .XX = ±0.2 unless otherwise specified

N/C (1) = Please leave these pins electrically floating on the end-PCB
By-Pass (2) = In TCXO configuration, it is recommended that a 1,000pF COG by-pass capacitor is connected between Pin#2 and GND

Tape and Reel

Embossed Carrier Dimensions (8mm, 12mm, 16mm, 24mm Tape Only)



| Tape Dimensions (mm) | | | | | | | Reel Dimensions (mm) | | |
|----------------------|-----|-----|-----|----|-----|-----|----------------------|--------------|--------------|
| W | F | Do | Po | P1 | P2 | B1 | T2 | Outside Dia. | Parts / Reel |
| 16 | 7.5 | 1.5 | 4.0 | 12 | 2.0 | 9.6 | 3.4 | 330 | 1,000 |

Recommended Reflow Profile

Reflow Profile: in accordance to IPC/JEDEC J-STD-020 (Latest Revision)

Additional Notes:

- This part has been designed for pick and place reflow soldering
- This part may be reflowed once
- This part should not be reflowed in the inverted position

Packaging

Packaging: All packaging must conform to ESD Controls detailed in ANSI/ESD S20.20 (Latest Revision)