

**FEATURES**

- ✓ Low Phase Noise Performance
- ✓ SMD Construction
- ✓ Standard 2.5x2.0mm Package
- ✓ Tape and Reel Compatibility

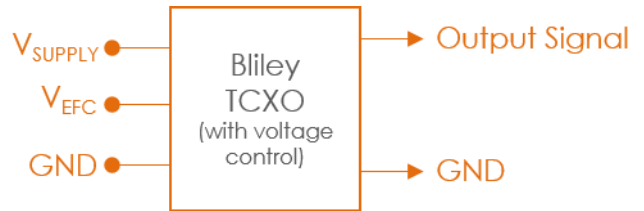
**Temperature Controlled Crystal Oscillator**

**#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**

**BTCS2 - M - T**

<b>Center Frequency</b> 10MHz to 52MHz	<b>Supply Voltage</b> B: 1.8V C: 3.0V D: 3.3V H: 2.5V	<b>EFC</b> N: N/A C: ±2ppm F: ±5ppm	<b>Frequency vs. Temperature</b> B: ±0.5ppm C: ±1ppm J: ±2ppm H: ±3ppm	<b>Operating Temperature</b> B: -20 to 70°C C: -40 to 85°C P: -40 to 105°C	<b>Output Type</b> B: Clipped Sine C: CMOS/ TTL
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\*Not all combinations of options may be possible  
\*\*Other options may be available

## Performance Specifications

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Frequency Range		10		52	MHz
Initial Frequency Tolerance <sup>1</sup>	Tested at +25°C			±2	ppm
Frequency Stability					
vs. Temperature	See Options (Max) Referenced to +25°C		±0.5, ±1, ±2, ±3		ppm
vs. Load	10% Change			±0.3	ppm
vs. Supply Voltage	5% Change			±0.3	ppm
Aging					
1st Year				±1.0	ppm
Supply Voltage (Vdd)					
	Option B	1.71	1.8	1.89	Vdc
	Option C	2.85	3.0	3.15	Vdc
	Option D	3.13	3.3	3.47	Vdc
	Option H	2.37	2.5	2.63	Vdc
Current Consumption					
	(Clipped Sine) 10MHz to 26MHz 26MHz to 52MHz			2.0 2.5	mA
	(CMOS/TTL)			10	mA
Start-up Time			5		mSec
Electronic Frequency Control					
Voltage Range		0		Vdd	Vdc
Center Voltage			Vdd/2		Vdc
Frequency Range	See options (min)		±2, ±5		ppm
Slope			positive		
Input Impedance			500		kΩ
Linearity			10		%
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/TTL)		MIN	TYP	MAX	
High Output Level	Logic "1"	90% Vdd			Vdc
Low Output Level	Logic "0"	10% Vdd			Vdc
Rise/Fall Time		10			nSec
Duty Cycle		45	50	55	%
Load		15			pF
Output Characteristics (Clipped-Sine)		MIN	TYP	MAX	
Output Level		0.8			Vdc
Load	±10%	10 kΩ//10 pf			

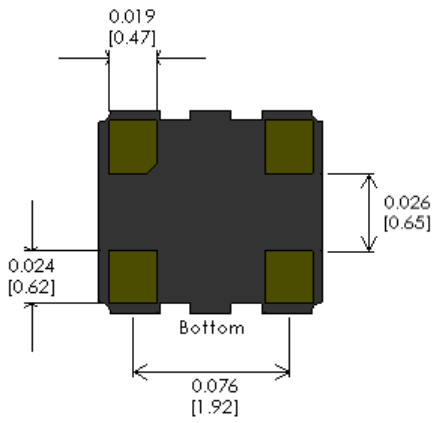
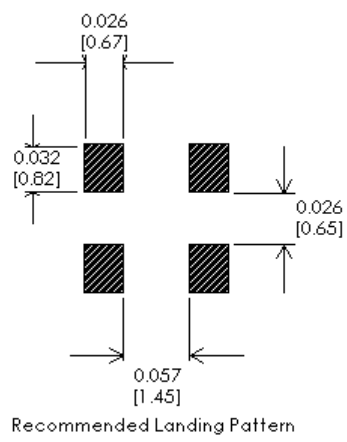
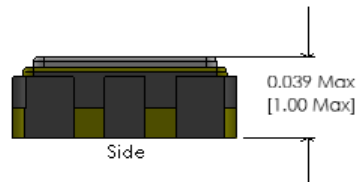
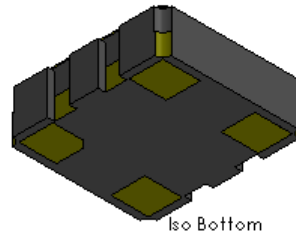
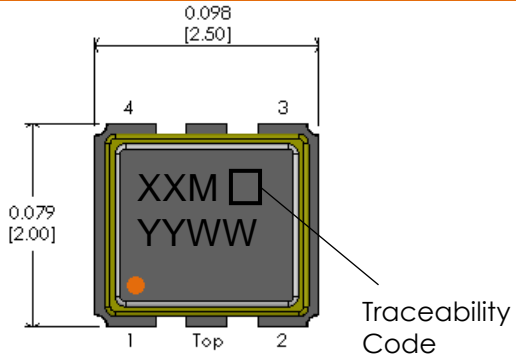
Parameter	Conditions	Values			Unit
Phase Noise		TYP			
Phase Noise (26 MHz)	Tested at +25°C				
	10Hz	-80			dBc/Hz
	100Hz	-110			dBc/Hz
	1kHz	-130			dBc/Hz
	10kHz	-145			dBc/Hz
	100kHz	-150			dBc/Hz

# Environmental Compliance

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Operating Temperature	Option B	-20		+70	°C
	Option C	-40		+85	°C
Storage Temperature		-55		+125	°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				

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# Physical Specifications



PIN	FUNCTION
1	EFC / N.C.
2	Ground
3	RF Output
4	Supply Voltage

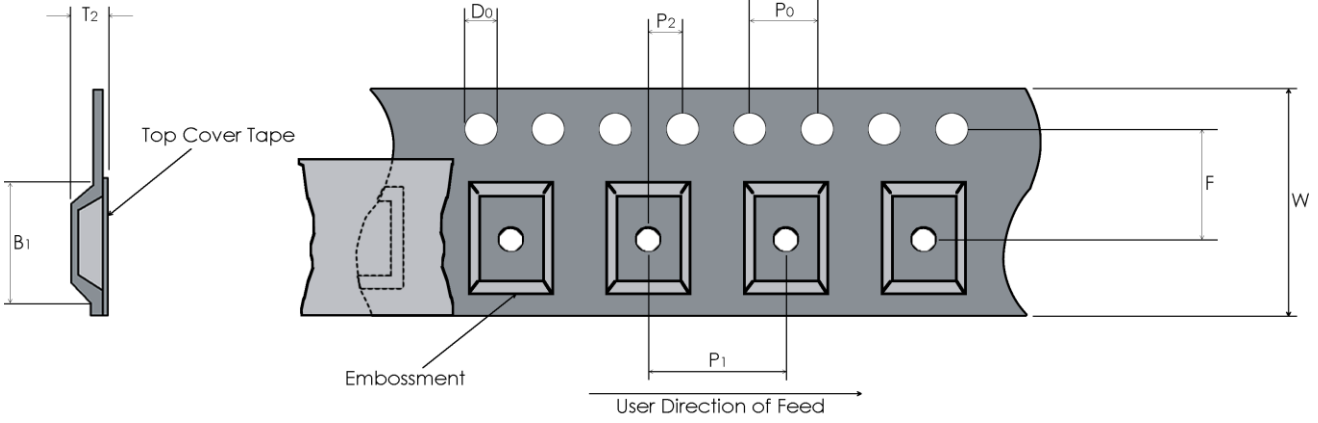
Tolerances (mm) .X = ± 0.5, .XX = ± 0.2 unless otherwise specified



Notes:  
 Connection Pads: Gold(10-40 μ in.) over Nickel (100-250 μ in.)

## 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
8	3.5	1.5	4.0	4	4	2.7	1.1	180	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)

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