BTCS3-XXXMXX-XXXT – 3.2x2.5 TCVCXO

bliley technologies

FEATURES

- ✓ Low Phase Noise Performance
- ✓ SMD Construction
- ✓ Standard 3.2x2.5mm Package
- ✓ Tape and Reel Compatibility

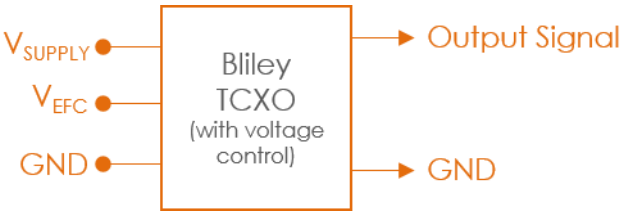
Temperature Controlled Crystal Oscillator

#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

BTCS3 - ___ M ___ ___ - ___ ___ ___ T

Center Frequency	Supply Voltage	EFC	Frequency vs. Temperature	Operating Temperature	Output Type
10MHz to 50MHz	B: 1.8V C: 3.0V D: 3.3V H: 2.5V	N: N/A F: ±5ppm G: ±10ppm	B: ±0.5ppm C: ±1ppm J: ±2ppm H: ±3ppm	B: -20 to 70°C C: -40 to 85°C	B: Clipped Sine C: CMOS TTL

*Not all combinations of options may be possible
**Other options may be available

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Performance Specifications

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Frequency Range		10		50	MHz
Initial Frequency Tolerance[1]	Tested at +25ºC			±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
5 Years				±3	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	
Current Consumption			2	4	mA
Start-up Time			5		mSec
Electronic Frequency Control					
Voltage Range		0		Vdd	Vdc
Center Voltage			Vdd/2		Vdc
Frequency Range	See options (min)		±5, ±10		ppm
Slope			positive		
Input Impedance			100		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			Vpp
Load	±10%		10 KΩ//10 pf		

Parameter	Conditions	Values	Unit
Phase Noise		TYP	
Phase Noise (10 MHz)	Tested at +25°C		
	10Hz	-80	dBc/Hz
	100Hz	-115	dBc/Hz
	1kHz	-135	dBc/Hz
	10kHz	-138	dBc/Hz
	100kHz	-142	dBc/Hz

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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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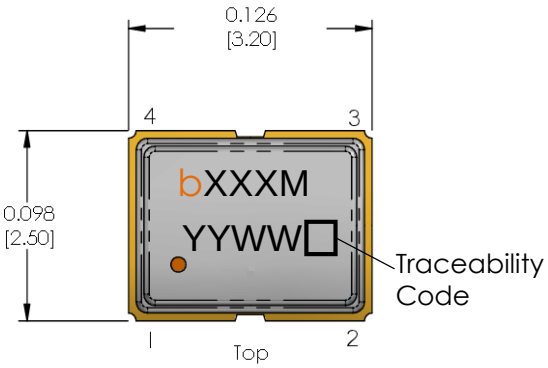
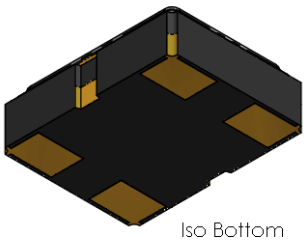
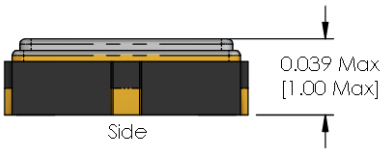
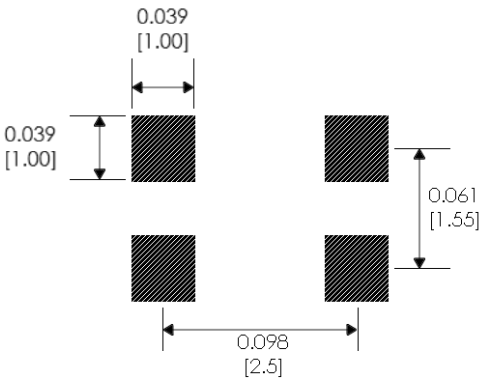
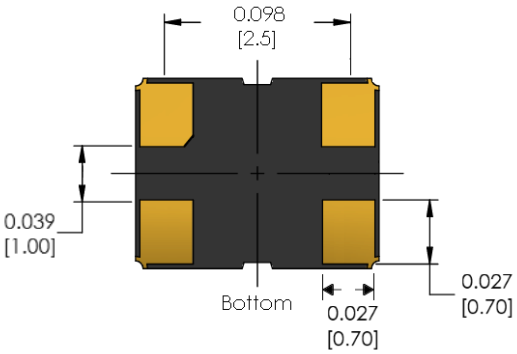
Physical Specifications











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

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

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

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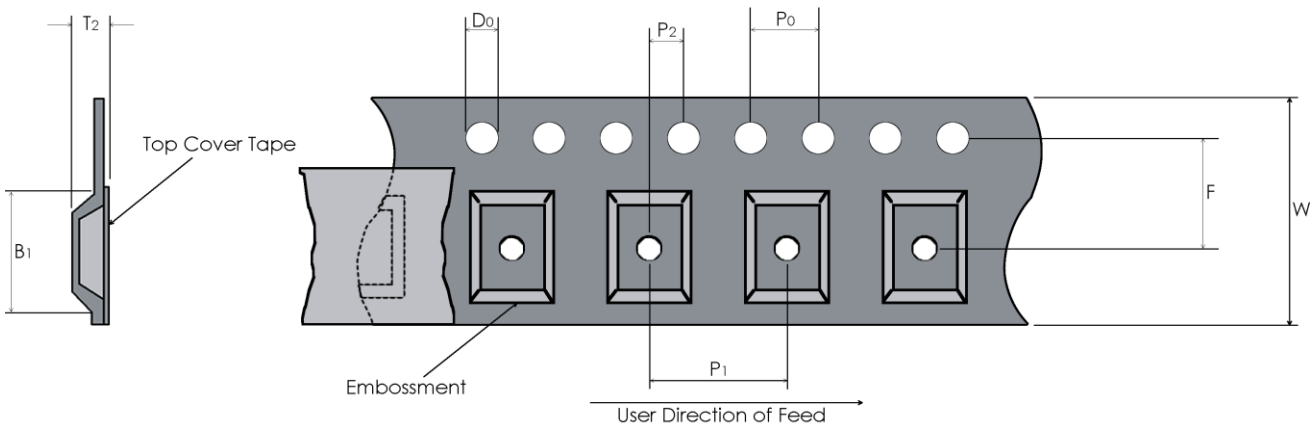
Tape and Reel

Embosed 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
12	5.5	1.5	4.0	8	2.0	3.7	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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