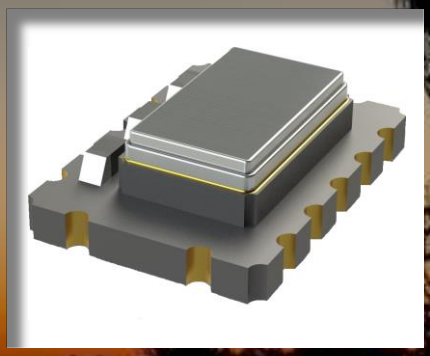
BTCSC-XXXMXX-XXXT – 5x7 TCVCXO

bliley technologies



FEATURES

- ✓ Stratum 3 level frequency stability
- ✓ Low Phase Noise Performance
- ✓ SMD Construction
- ✓ Tape and Reel Compatibility

Temperature Controlled Crystal Oscillator

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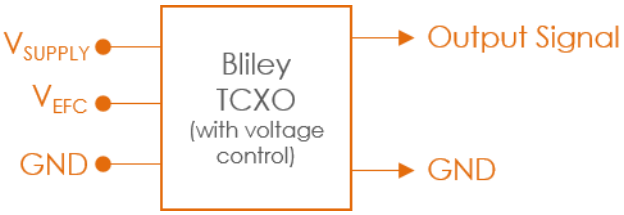
Description

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

BTCSC - ___ M __ __ - ___ __ T

Center Frequency	Supply Voltage	EFC	Frequency vs. Temperature	Operating Temperature	Output Type
10MHz to 40MHz	C: 3.0V D: 3.3V E: 5.0V H: 2.5V	N: N/A F: ±5ppm G: ±10ppm	A: ±0.28ppm[1] B: ±0.5ppm C: ±1ppm J: ±2ppm	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

1: 0.28ppm only available for temp range B

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Performance Specifications

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Frequency Range		10		40	MHz
Initial Frequency Tolerance[1]	Tested at +25ºC			±2	ppm
Frequency Stability	Overall			±4.6	ppm
vs. Temperature	See Options (Max) Referenced to +25˚C		±0.28, ±0.5, ±1, ±2		ppm
vs. Load	10% Change			±0.3	ppm
vs. Supply Voltage	5% Change			±0.3	ppm
Aging	1st Year			±1.0	ppm
Supply Voltage	Option C	2.85	3.0	3.15	Vdc
	Option D	3.13	3.3	3.47	Vdc
	Option E	4.75	5.0	5.25	Vdc
	Option H	2.37	2.5	2.63	Vdc
Current Consumption (CMOS)	< 40MHz >40MHz			6 40	mA
Current Consumption(Clipped Sine)	9.6 to 15MHz 15.01 to 26MHz 26.01 to 40MHz		1.5 2.0 2.5		mA
Tristate	Enable High Disable Low				
Start-up Time			5	10	mSec
Electronic Frequency Control					
Voltage Range		0.5	1.5	2.5	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

Performance Specifications

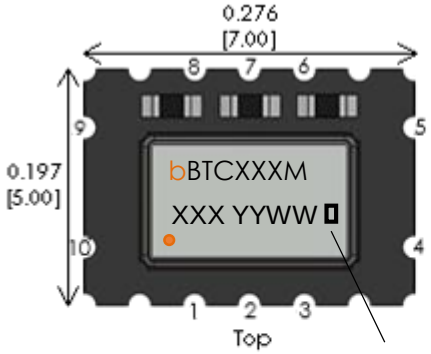
Parameter	Conditions	Values			Unit
Output Characteristics (CMOS/TTL)		MIN	TYP	MAX	
High Output Level	Logic "1"		90% Vdd		
Low Output Level	Logic "0"				10% Vdd
Rise/Fall Time					10
Duty Cycle			45	50	55
Load				15	
Output Characteristics (Clipped-Sine)		MIN	TYP	MAX	
Output Level			0.8		
Load	±10%		10 KΩ//10 pf		

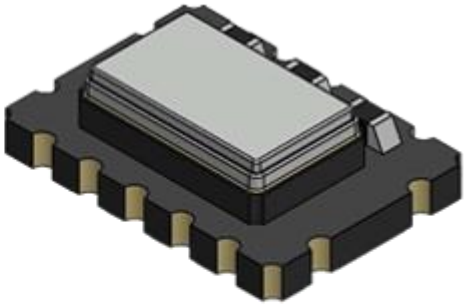
Parameter	Conditions	Values	Unit
Phase Noise		TYP	
Phase Noise (10 MHz)	Tested at +25°C		
	10Hz	-90	dBc/Hz
	100Hz	-120	dBc/Hz
	1kHz	-140	dBc/Hz
	10kHz	-155	dBc/Hz
	100kHz	-155	dBc/Hz

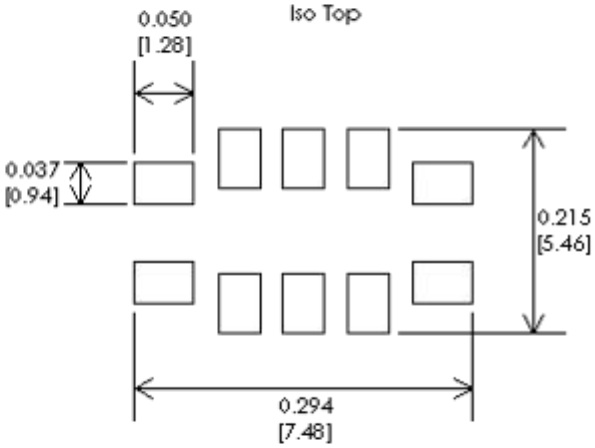
Environmental Compliance

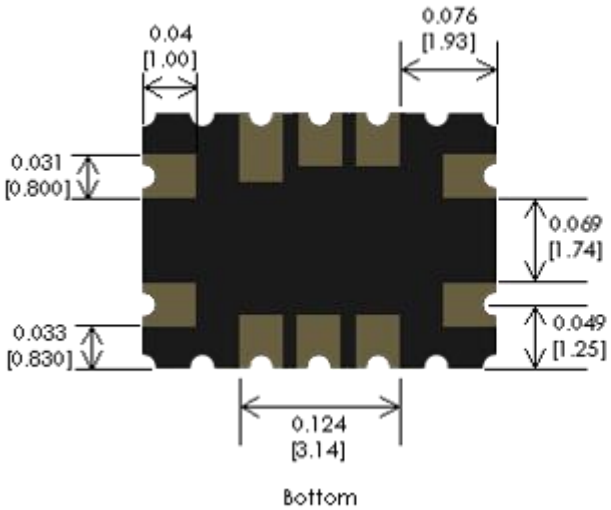
Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Operating Temperature	Option B	-20		+70	°C
	Option C	-40		+85	°C
Storage Temperature		-55		+125	°C
Solderability	MIL-STD-202 Method 208				
Solvent Resistance	MIL-STD-202 Method 215				
Shock	MIL-STD-202 Method 213 Test Condition I				
Vibration	MIL-STD-202 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				

Physical Specifications









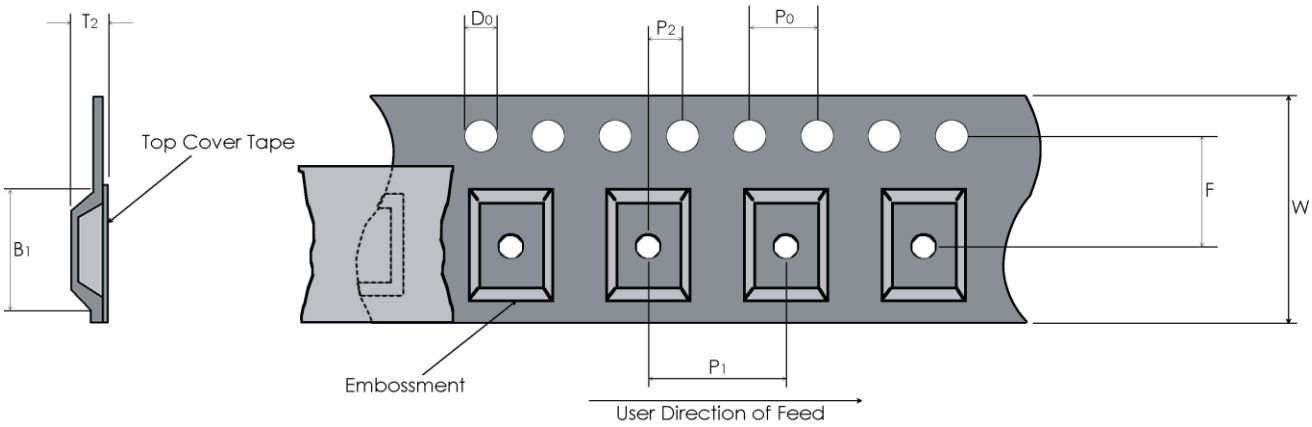
PIN	FUNCTION
1,2,3,6,7	N.C.
4	Ground
5	RF Output
8	Tri-state/N.C.
9	Supply Voltage
10	EFC/N.C./Ground

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

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
16	7.5	1.5	4.0	8	2.0	7.6	2.4	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)