USTSC-XXXMXX-XXXT – Ultra Stable 5x7 TCVCXO

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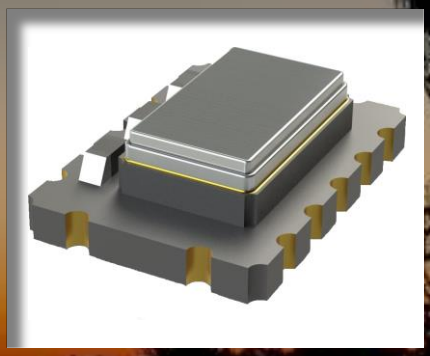

FEATURES

- ✓ High Stability vs Temperature
- ✓ Standard 5.0x7.0mm Package
- ✓ SMD Construction
- ✓ Tape and Reel Compatibility

Temperature Controlled Crystal Oscillator

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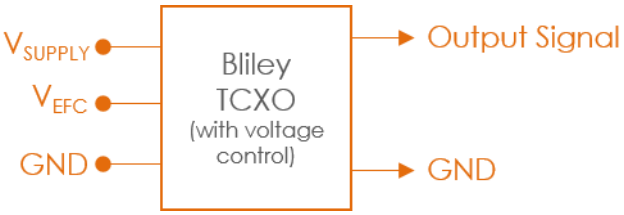
Description

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

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Center Frequency	Supply Voltage	EFC	Frequency vs. Temperature	Operating Temperature	Output Type
10MHz to 52MHz	C: 3.0V D: 3.3V E: 5.0V G: 2.8V	N: N/A F: ±5ppm G: ±10ppm	A: ±0.28ppm[1] B: ±0.5ppm K: ±0.14ppm[1]	B: -20 to 70°C C: -40 to 85°C N: -55 to 105°C[2]	B: Clipped Sine C: CMOS/TTL

*Not all combinations of options may be possible
**Other options may be available 1: Not available for temp range N 2: -55 to -40 has wider stability

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Performance Specifications

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Frequency Range	Fundamental	10		52	MHz
Initial Frequency Tolerance[1]	Tested at +25°C			±2	ppm
Frequency Stability	Overall			±4.6	ppm
vs. Temperature	See Options (Max) (Max+Min)/2		±0.28, ±0.5, ±0.14		ppm
	-55°C to -40°C[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	Option G	2.66	2.8	2.94	Vdc
	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
Current Consumption	CMOS			5	mA
Current Consumption	Clipped Sine			10	mA
Tristate	Enable High Disable Low				
Start-up Time			2.5	5	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 2: Applies to operating range N

Performance Specifications

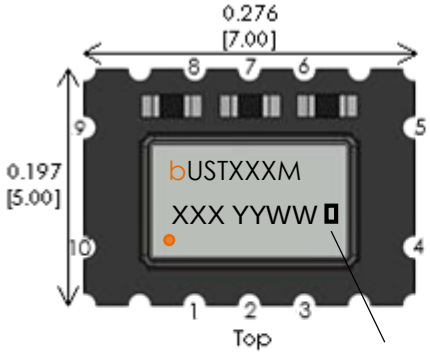
Parameter	Conditions	Values			Unit
Output Characteristics (CMOS/TTL)		MIN	TYP	MAX	
High Output Level	Logic "1"	90% Vdd			Vdc
Low Output Level	Logic "0"			10% Vdd	Vdc
Rise/Fall Time				10	mSec
Duty Cycle		45	50	55	%
Load			15		pF
Output Characteristics (Clipped-Sine)		MIN	TYP	MAX	
Output Level		0.8		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

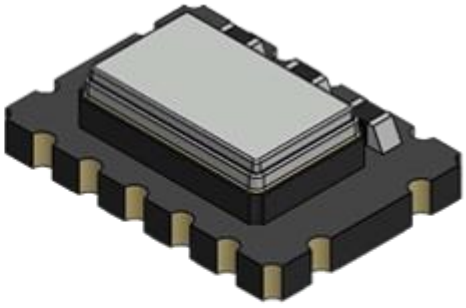
Parameter	Conditions	Values	Unit
Phase Noise		TYP	
Phase Noise (10 MHz)	Tested at +25°C		
	10Hz	-80	dBc/Hz
	100Hz	-110	dBc/Hz
	1kHz	-130	dBc/Hz
	10kHz	-145	dBc/Hz
	100kHz	-145	dBc/Hz

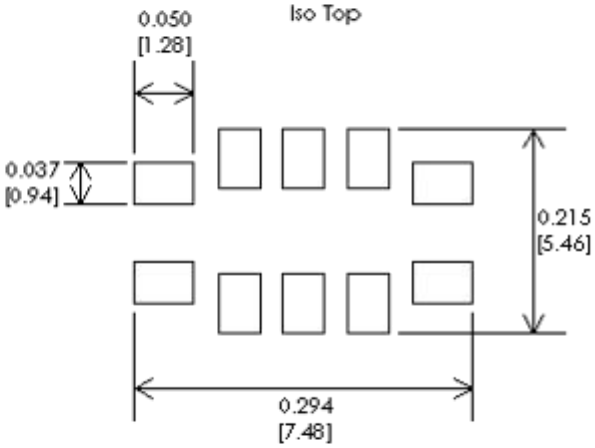
Environmental Compliance

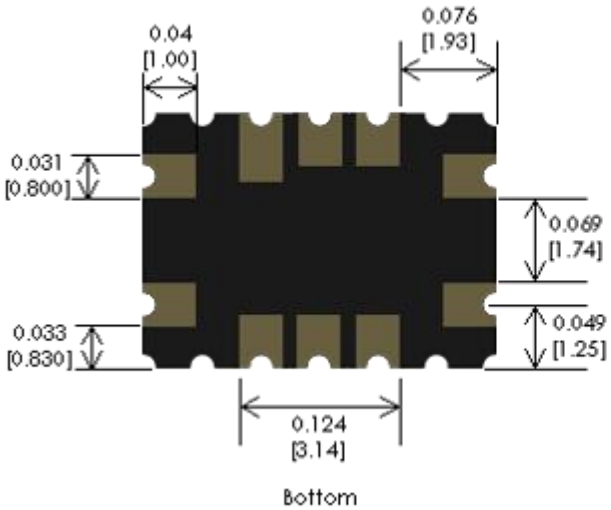
Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Operating Temperature	Option B	-20		+70	°C
	Option C	-40		+85	°C
	Option N	-55		+105	°C
Storage Temperature		-55		+125	°C
Solderability	MIL-STD-202 Method 208				
Solvent Resistance	MIL-STD-202 Method 215				
Shock	MIL-STD-202 Method 213 Test Condition 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









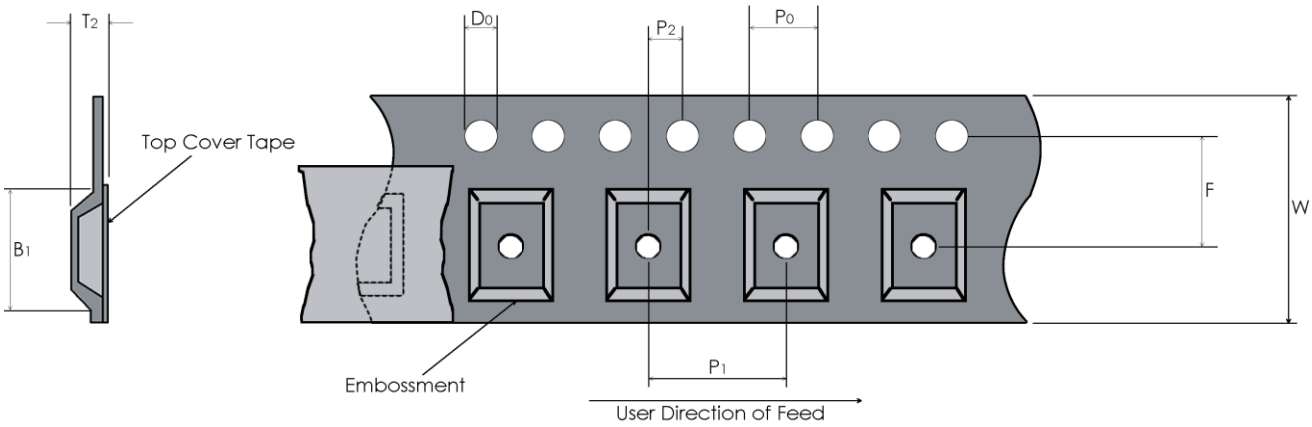
PIN	FUNCTION
1,2,3,6,7	N.C.
4	Ground
5	RF Output
8	Tri-state/N.C.
9	Supply Voltage
10	EFC/N.C./Ground

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 twice

Packaging

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