

FEATURES

- ✓ Analog Temperature Compensation
- ✓ SMD Construction
- ✓ Standard 9x14mm Package
- ✓ Tape and Reel Compatibility

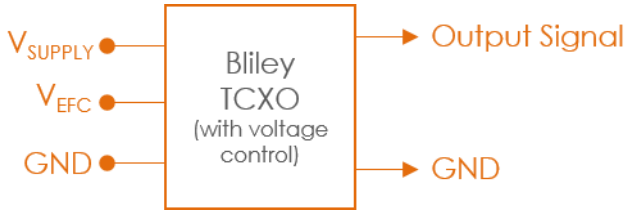
Temperature Controlled Oscillator

#blileytakesyoufurther

Description

Bliley TCXO'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

BTCS - M - T

<u>Footprint</u>	<u>Center Frequency</u>	<u>Supply Voltage</u>	<u>EFC</u>	<u>Frequency vs. Temperature</u>	<u>Operating Temperature</u>	<u>Output Type</u>
H: 9x14mm(6pad) J: 9x14mm(4pad)	10MHz to 200MHz	D: 3.3V E: 5.0V	N: N/A F: ± 5ppm G: ± 10ppm H: ± 20ppm	C: ± 1ppm D: ± 5ppm G: ± 10ppm J: ± 2ppm	B: -20 to +70°C C: -40 to +85°C D: -55 to +125°C	B: Clipped Sine C: CMOS/TTL D: HCMOS F: LVPECL

*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		200	MHz
Initial Frequency Tolerance ¹	Tested at +25°C			±2	ppm
Frequency Stability					
vs. Temperature	See Options (Max) Referenced to +25°C		±1, ±5, ±10		ppm
vs. Load	5% Change			±0.2	ppm
vs. Supply Voltage	5% Change			±0.2	Ppm
Perturbation	Per °C			±0.2	ppm
Aging	1 st Year			±1	ppm
	10 Years			±2	ppm
Supply Voltage (Vdd)	Option D	3.13	3.3	3.47	Vdc
	Option E	4.75	5	5.25	Vdc
Current Consumption	10MHz			10	mA
	50MHz			30	mA
	100MHz			65	mA
Electronic Frequency Control					
Voltage Range		0		Vdd	Vdc
Center Voltage			Vdd/2		
Frequency Range	See Options (Min)		±5, ±10, ±20		ppm
Slope			positive		
Input Impedance			100		kΩ
Linearity			10		%

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

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Performance Specifications

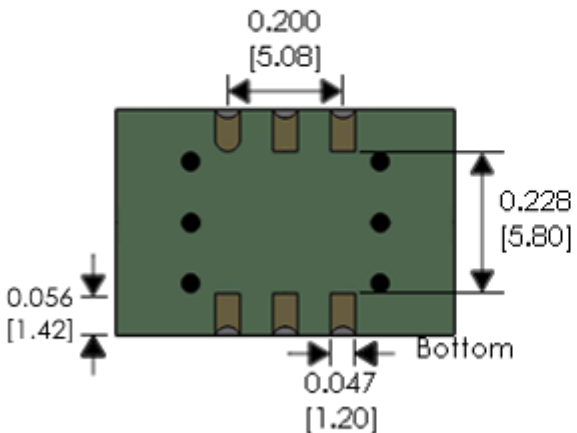
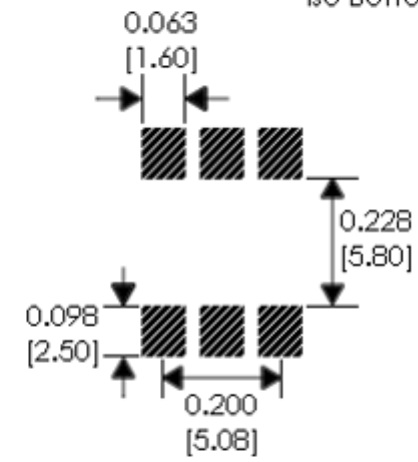
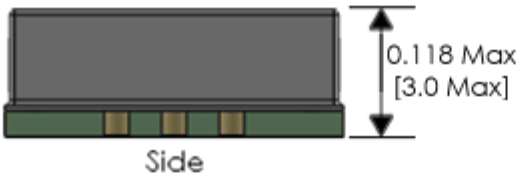
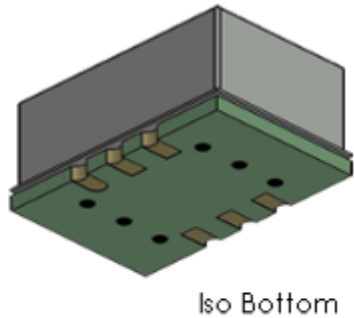
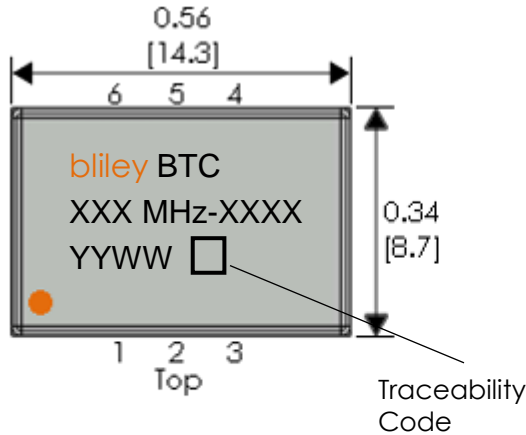
Parameter	Conditions	Values			Unit
Output Characteristics (LVPECL)		MIN	TYP	MAX	
Output Level		0	2	6	dB
Differential Output Voltage		595	750	930	mV
Load Impedance		47.5	50	52.5	Ω
Output Characteristics (CMOS/TTL/HCMOS)		MIN	TYP	MAX	
High Output Level	Logic "1"	90% Vdd			Vdc
Low Output Level	Logic "0"	10% Vdd			Vdc
Rise/Fall Time		10			nSec
Duty Cycle		40	50	60	%
Load Impedance		15			pF
Output Characteristics (Clipped-Sine)		MIN	TYP	MAX	
Output Level		0.8			Vp-p
Load	$\pm 10\%$	10 K Ω //10 pF			

Parameter	Conditions	Values			Unit
Phase Noise		TYP	TYP	TYP	
Phase Noise (@ 25°C)	Offset	(10MHz)	(50MHz)	(100MHz)	
	10Hz	-85	-75	-70	dBc/Hz
	100Hz	-120	-110	-90	dBc/Hz
	1kHz	-135	-125	-115	dBc/Hz
	10kHz	-145	-135	-125	dBc/Hz
	100kHz	-155	-140	-130	dBc/Hz
	1MHz	-160	-150	-140	dBc/Hz

Environmental Compliance

Parameter	Conditions	Values			Unit
Phase Noise		TYP	TYP	TYP	
Operating Temperature	Option B	-20		+70	°C
	Option C	-40		+85	°C
	Option D	-55		+125	°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 (6 Pad)

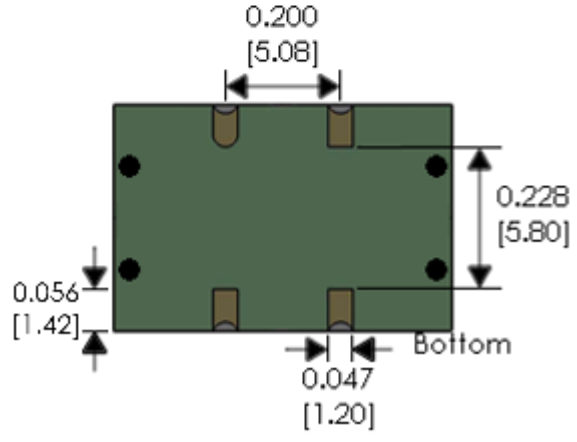
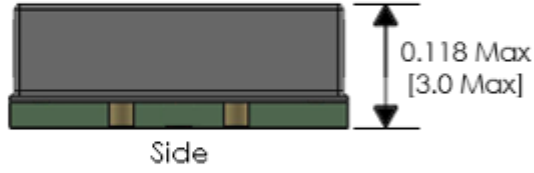
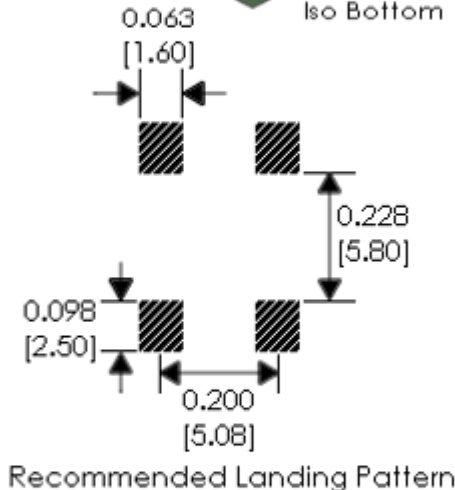
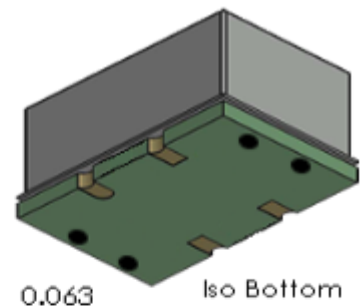
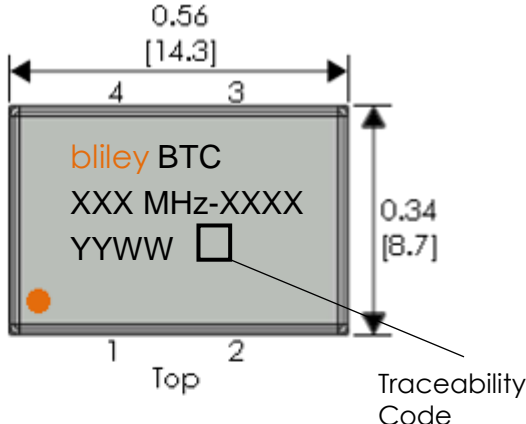


PIN	FUNCTION
1	EFC/N.C.
2	Output Control/N.C.
3	Ground
4	RF Output
5	Differential Output/N.C.
6	Supply Voltage

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

Notes:
 • Board thickness = 0.8mm

Physical Specifications (4 Pad)



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

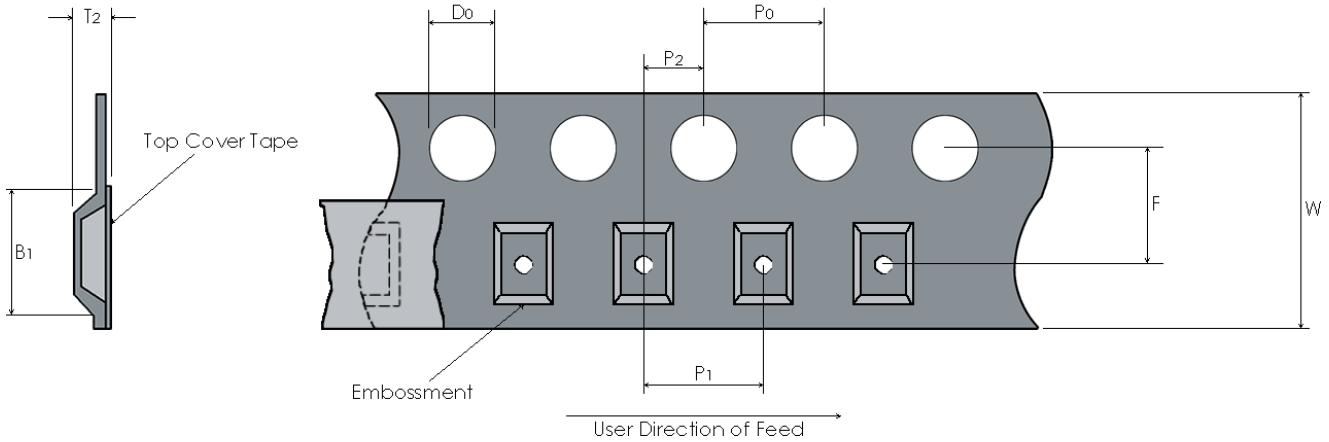
Tolerances (mm) .X = ± 0.5, .XX = ±0.2 unless otherwise specified

Notes:
 • Board thickness = 0.8mm

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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
24	11.5	1.5	4.0	12	2.0	15.0	8.8	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 twice
- 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)