BVCB-XXXMXX-XXXXTX – 5x7 Non-PLL VCXO

bliley technologies

FEATURES

- ✓ Wide Operating Temperature Range
- ✓ Standard 5x7mm Package
- ✓ Rugged Hermetically Sealed Package
- ✓ Mil-Std-202 Compliant

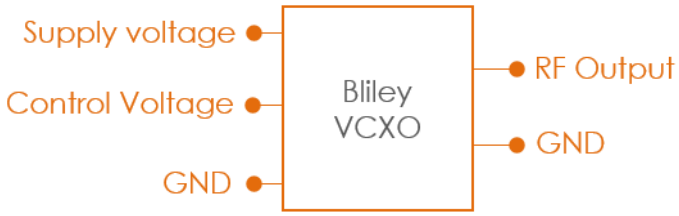
Voltage Controlled Oscillator

#blileytakesyoufurther

Description

Voltage Controlled Oscillators are designed to meet the rigorous demands of Military Standards as well as provide long life to OEM equipment manufacturers. Bliley Engineers Concurrent Design philosophy provides robust designs which are economical as well as reliable for long-term life. Applications consist of SATCOM, TELECOM, Military and Instrumentation.

Block Diagram



Part Number Configuration

BVCB – ___ M ___ – ___ ___ ___ T ___

Center Frequency	Supply Voltage	Output Control	Frequency vs. Temperature	Operating Temperature	Output Type	EFC	Option	PLL
10MHz to 170MHz	D: 3.3V E: 5V G: 2.5V	N: N/A E: Enable T: Tri-state	A: ±25ppm B: ±50ppm C: ±100ppm	B: -20°C to 70°C C: -40°C to 85°C	C: CMOS/TTL D: HCMOS	B: ±50ppm C: ±100ppm	T: Tape & Reel	Blank: PLL N: Non-PLL

*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		170	MHz
Frequency Stability					
vs. Temperature	See Options (Max) Referenced to +25°C		±25, ±50, ±100		ppm
vs. Load	5% Change			±1	ppm
vs. Supply Voltage	5% Change			±1	ppm
Perturbation	Per 1°C			±3	ppm
Aging	1st Year			±3	ppm
Supply Voltage	Option G	2.37	2.5	2.63	Vdc
	Option D	3.13	3.3	3.47	Vdc
	Option E	4.75	5	5.25	Vdc
Current Consumption			15	40	mA
Output Control	Enable – High, Open Disable - Low	30% Vdd		70% Vdd	Vdc
Electronic Frequency Control					
Voltage Range	3.3Vdc	0.3	1.65	3.0	Vdc
	5.0Vdc	0.5	2.5	4.5	Vdc
	2.5Vdc	0.2	1.25	2.3	Vdc
Frequency Range	See Options (Min)		±50, ±100		ppm
Slope			positive		
Input Impedance		2			MΩ
Linearity			10		%
Start Up Time				10	mSec

Performance Specifications

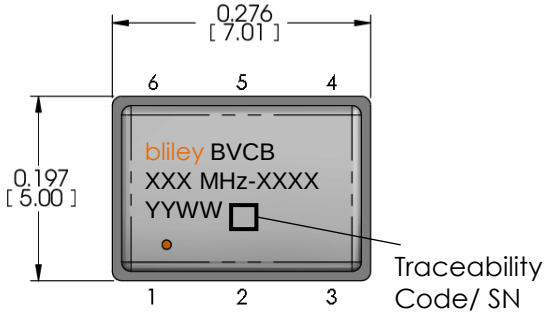
Parameter	Conditions	Values			Unit
Output Characteristics		MIN	TYP	MAX	
High Output Level	Logic "1"	90% Vdd			Vdc
Low Output Level	Logic "0"			10% Vdd	Vdc
Rise/Fall Time				5	nSec
Duty Cycle		45	50	55	%
Load			15		pF

Parameter	Conditions	Values		Unit
Phase Noise		TYP	TYP	
Phase Noise (100MHz @ 25°C)	Offset	PLL	Non-PLL	
	10Hz	-55	-70	dBc/Hz
	100Hz	-85	-98	dBc/Hz
	1kHz	-113	-130	dBc/Hz
	10kHz	-125	-145	dBc/Hz
	100kHz	-130	-155	dBc/Hz
	1MHz	-140	-160	dBc/Hz
Phase Jitter	12KHz-20MHz RMS	1.0	0.5	pSec

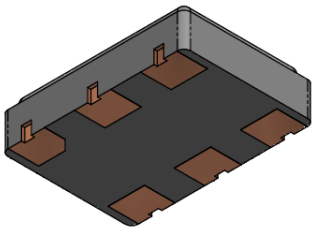
Environmental Compliance

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Operating Temperature	Option B	-20		+70	°C
	Option C	-40		+85	°C
Storage Temperature		-45		+90	°C
Solderability	MIL-STD-202 Method 208				
Shock	MIL-STD-202 Method 213 Test Condition A				
Vibration	MIL-STD-202 Method 204 Test Condition C				
Seal	MIL-STD-202 Method 112 Test Condition C & D				

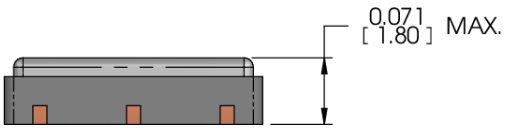
Physical Specifications



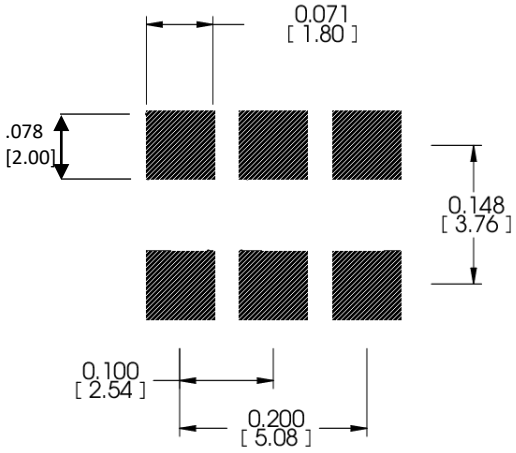
Top



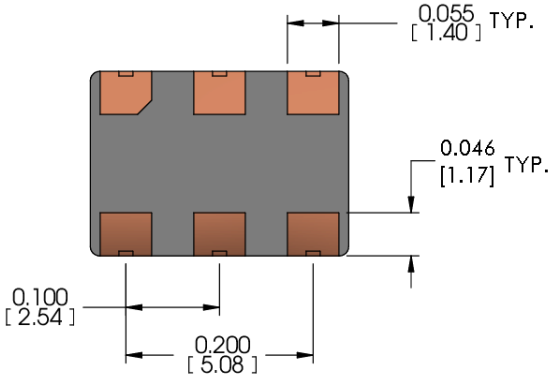
Iso Bottom



Side



Recommended Landing Pattern



Bottom

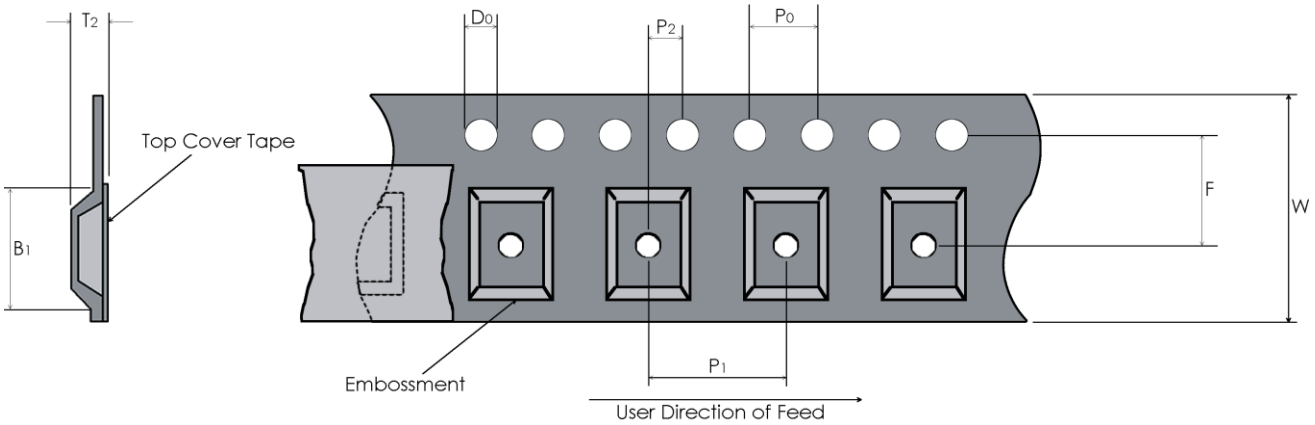
Tolerances (mm) .X = ± 0.5, .XX = ±0.2 unless otherwise specified

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

Notes
1) None

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	1000

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)