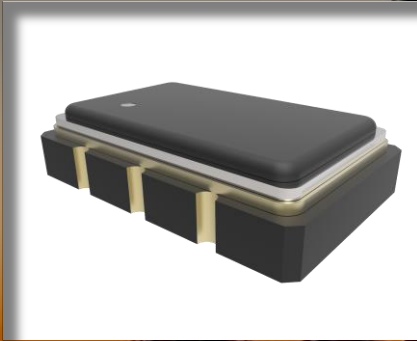


BOCS5-XXXMXX-XXXT – Crystal Oscillator



FEATURES

- ✓ Low Jitter
- ✓ SMD Construction
- ✓ Standard 5X3.2 mm Package Size
- ✓ Mil-Std-202 Compliant

Avionics Grade Crystal Oscillator

#blileytakesyoufurther

Description

Bliley Crystal Oscillators are designed to meet the rigorous demands of QPL 55310. Bliley's single vertically integrated factory of Crystal and Oscillator Engineering allows quick-turn samples of custom frequencies to support short-term design cycle-times. Applications consisting of: Military, Instrumentation, SATCOM, and Telecommunications.

Block Diagram



Part Number Configuration

BOCS5 - M - T

<u>Center Frequency</u>	<u>Supply Voltage</u>	<u>Output Control</u>	<u>Frequency vs. Temperature</u>	<u>Operating Temperature</u>	<u>Output Type</u>
HCMOS: 10MHz to 245MHz LVPECL: 13.5MHz to 200MHz	D: 3.3V G: 2.5V	N: N/A E: Enable T: Tri-state	A: ±25ppm B: ±50ppm	B: -20°C to +70°C C: -40°C to +85°C	D: HCMOS G: LVPECL

*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	
General					
Frequency Range (LVPECL)	Fundamental	13.5		60	MHz
	3 rd Overtone	60		200	MHz
Frequency Range (HCMOS)		10.0		245.0	MHz
Frequency Stability (1°C Steps)	Over Temp, Load, Setting, & Supply		±25, ±50		ppm
Perturbation				±3	ppm
Age Stability	1 st Year			±3	ppm
Supply Voltage (Vdd)	Option G	2.38	2.50	2.63	Vdc
	Option D	3.13	3.30	3.47	Vdc
Current Consumption			25	50	mA
Output Control	Enabled-High Disabled-Low				
Start Up Time			3	10	mSec
Moisture Sensitivity Level	1				

Performance Specifications

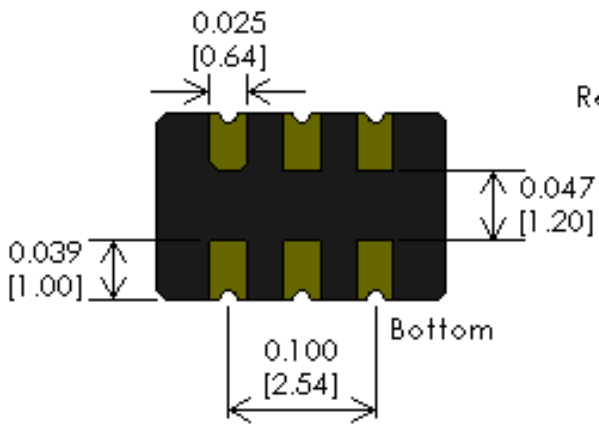
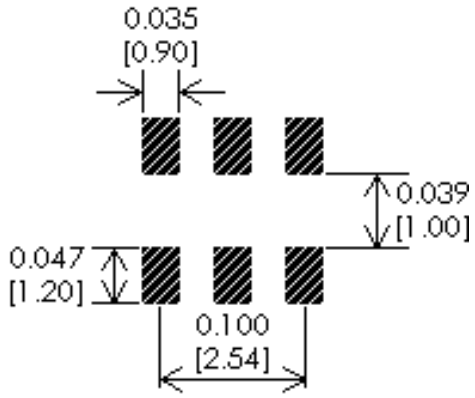
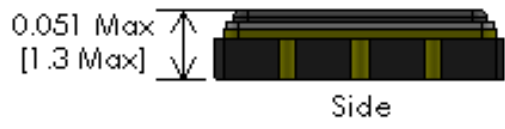
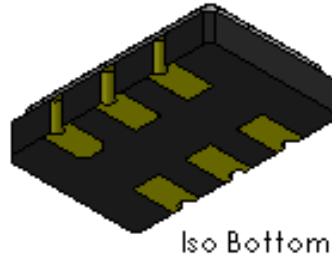
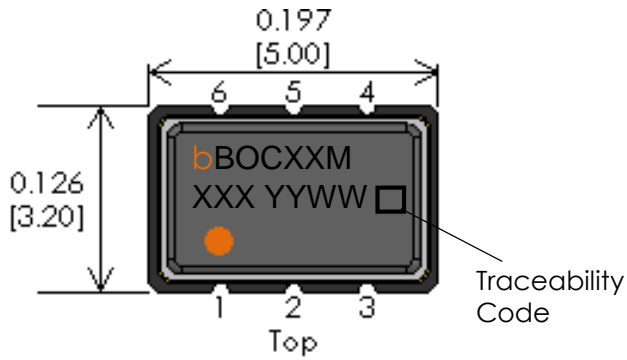
Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Output Characteristics (LVPECL)		MIN	TYP	MAX	
High Output Level	Logic 1	Vdd - 1.05		Vdd - 0.6	Vdc
Low Output Level	Logic 0	Vdd - 1.85		Vdd - 1.6	Vdc
Rise/Fall Time	20% ↔ 80%		0.3	0.5	nSec
Duty Cycle		45	50	55	%
Load			50		Ω
Output Characteristics (HCMOS)		MIN	TYP	MAX	
High Output Level	Logic 1	90% Vdd			Vdc
Low Output Level	Logic 0			10% Vdd	Vdc
Rise/Fall Time	10% ↔ 90%		1.5	3	nSec
Duty Cycle		45	50	55	%
Load			15		pF

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Phase Noise (LVPECL)		MIN	TYP	MAX	
Phase Noise (@156.25MHz)	Tested at +25°C				
	100Hz		-80		dBc/Hz
	1kHz		-115		dBc/Hz
	10kHz		-135		dBc/Hz
	100kHz		-142		dBc/Hz
	1Mhz		-147		dBc/Hz
Phase Jitter					
LVPECL 156.25MHz reference	12kHz - 20MHz, RMS		0.2	0.5	pSec
HCMOS 125MHz reference	12kHz - 20MHz, RMS		1.0	1.1	pSec

Environmental Compliance

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Operating Temperature	Option B	-20		+70	°C
Operating Temperature	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



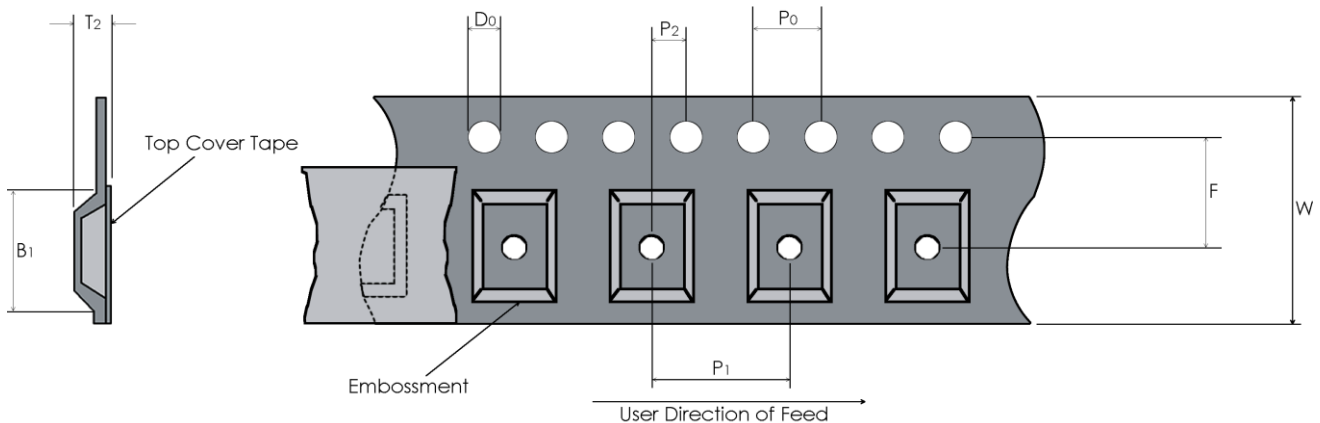
PIN	LVPECL	HCMOS
1	Output Control	Output Control
2	N.C.	N.C.
3	Ground	Ground
4	RF Output: Differential	RF Output
5	RF Output: Complimentary	N.C.
6	Supply Voltage	Supply Voltage

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

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
12	5.5	1.5	4.0	8	2.0	5.5	1.7	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)