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

Center Frequency	Supply Voltage	Output Control	Frequency vs. Temperature	Operating Temperature	Output Type
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

Bliley Technologies, Inc. • 2545 W. Grandview Blvd, Erie, PA 16506 • 1-814-838-3571 • bliley.com • info@bliley.com

Performance Specifications

Parameter	Conditions	Values			Unit
General		MIN	TYP	MAX	
Frequency Range (LVPECL)	Fundamental	13.5		60	MHz
	3rd 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	1st 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

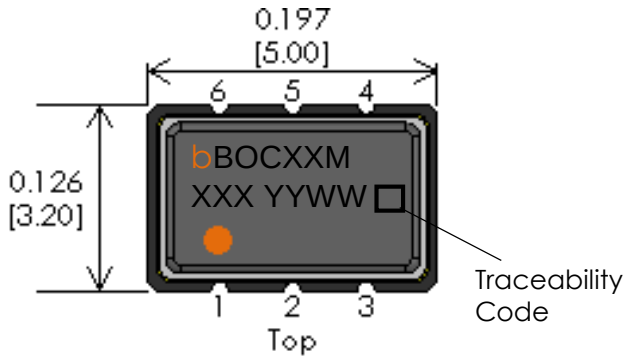
Parameter	Conditions	Values			Unit
Output Characteristics (LVPECL)		MIN	TYP	MAX	
High Output Level	Logic 1	Vdd - 1.05		Vdd - 0.6	Vdc
Low Output Level	Logic 0	Vdd - 1.85		Vdd - 1.6	Vdc
Rise/Fall Time	20% ↔ 80%		0.3	0.5	nSec
Duty Cycle		45	50	55	%
Load			50		Ω
Output Characteristics (HCMOS)		MIN	TYP	MAX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

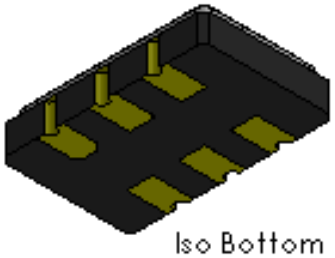
Parameter	Conditions	Values			Unit
Phase Noise (LVPECL)		MIN	TYP	MAX	
Phase Noise (@156.25MHz)	Tested at +25°C				
	100Hz		-80		dBc/Hz
	1kHz		-115		dBc/Hz
	10kHz		-135		dBc/Hz
	100kHz		-142		dBc/Hz
	1Mhz		-147		dBc/Hz
Phase Jitter					
LVPECL 156.25MHz reference	12kHz - 20MHz, RMS		0.2	0.5	pSec
HCMOS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

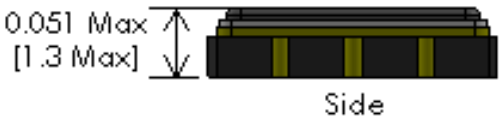
Environmental Compliance

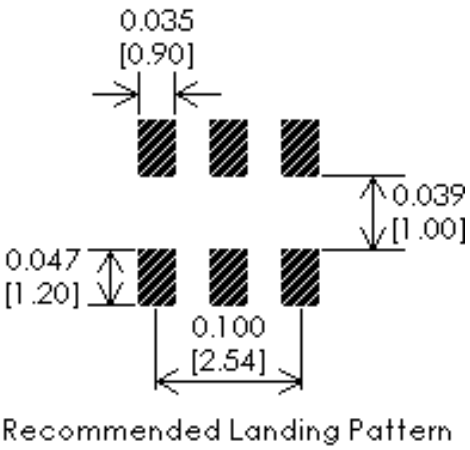
Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Operating Temperature	Option B	-20		+70	°C
Operating Temperature	Option C	-40		+85	°C
Storage Temperature		-55		+125	°C
Solderability	MIL-STD-202 Method 208				
Solvent Resistance	MIL-STD-202 Method 215				
Shock	MIL-STD-202 Method 213 Test Condition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

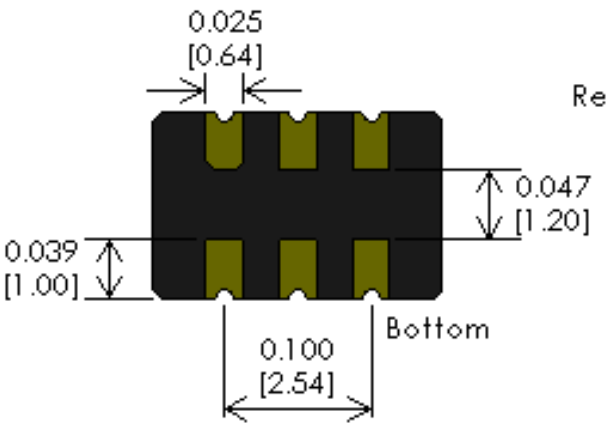
Physical Specifications











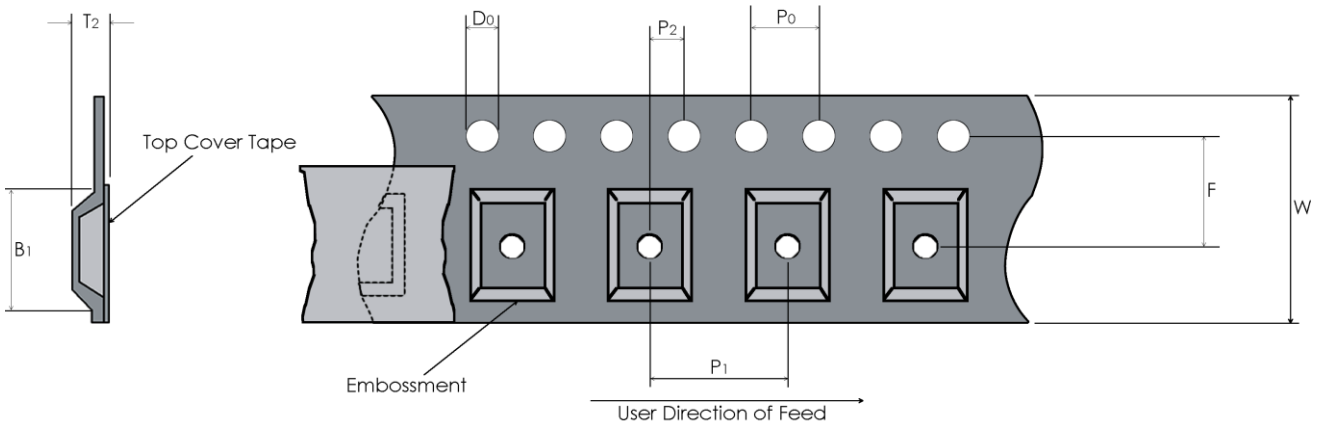
PIN	LVPECL	HCMOS
1	Output Control	Output Control
2	N.C.	N.C.
3	Ground	Ground
4	RF Output: Differential	RF Output
5	RF Output: Complimentary	N.C.
6	Supply Voltage	Supply Voltage

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

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
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)