

FEATURES

- ✓ SMD Construction
- ✓ Standard 2.5 x 2.0mm Package Size
- ✓ Mil-Std-202 Compliant

Avionics Grade Crystal Oscillator

#blileytakesyoufurther

Description

Bliley Crystal Oscillator 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

BOCS2 – M – – – – –

Center Frequency 1.5MHz to 170MHz	Supply Voltage B: 1.8V D: 3.3V G: 2.5V	Output Control N: N/A E: Enable T: Tristate	Frequency vs. Temperature A: ±25ppm B: ±50ppm C: ±100ppm	Operating Temperature B: -20°C to +70°C C: -40°C to +85°C D: -55°C to +125°C	Output Type C: CMOS/TTL D: HCMOS	Option T: Tape & Reel Y: T&R solder dipped	PLL P: PLL N: Non-PLL
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*Not all combinations of options may be possible

**Other options may be available

Performance Specifications

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
General					
Frequency Range	Fundamental	1.5		60	MHz
	3 rd Overtone(Non-PLL)	50		170	MHz
Frequency Stability					
Vs. Temperature(1°C Steps)	See Options (Max) Referenced to +25°C	±25, ±50, ±100			ppm
Perturbation				±3	ppm
Aging	1 st Year			±3	ppm
	5 Years			±5	ppm
Supply Voltage(Vdd)	Option B	1.62	1.8	1.98	Vdc
	Option G	2.25	2.5	2.75	Vdc
	Option D	2.97	3.3	3.63	Vdc
Current Consumption	1.5 – 19MHz			6	mA
	20 – 39MHz			8	mA
	40 – 60MHz			10	mA
	60 – 100MHz			12	mA
Output Control	Enabled-High Disabled-Low				
Startup Time				5	mSec
Moisture Sensitivity Level	1				

Performance Specifications

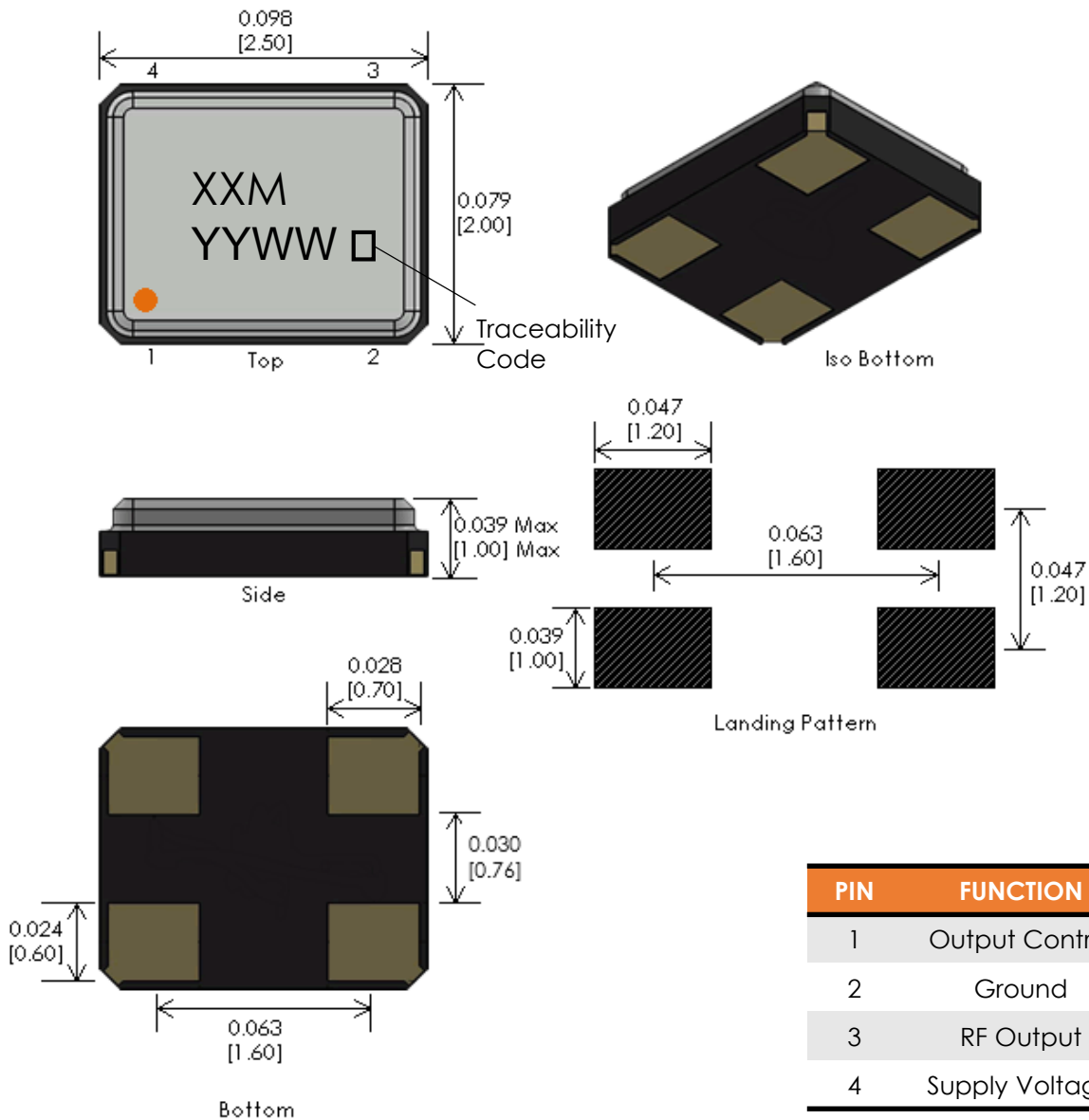
Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
Output Characteristics (HCMOS)					
High Output Level	Logic "1"	90% Vdd			Vdc
Low Output Level	Logic "0"	10% Vdd			Vdc
Rise/Fall Time		4			nSec
Duty Cycle		45	50	55	%
Load		15			pF

Parameter	Conditions	Values		Unit
		PLL	Non-PLL	
Phase Noise (100MHz)				
Phase Noise	Tested at +25°C	(TYP)	(TYP)	
	10Hz	-60	-60	dBc/Hz
	100Hz	-95	-95	dBc/Hz
	1KHz	-114	-125	dBc/Hz
	10kHz	-120	-135	dBc/Hz
	100kHz	-140	-144	dBc/Hz
Phase Jitter (RMS)	12KHz-20MHz	1	0.2	pSec

Environmental Compliance

Parameter	Conditions	Values			Unit
		MIN	TYP	MAX	
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				
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	Output Control
2	Ground
3	RF Output
4	Supply Voltage

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



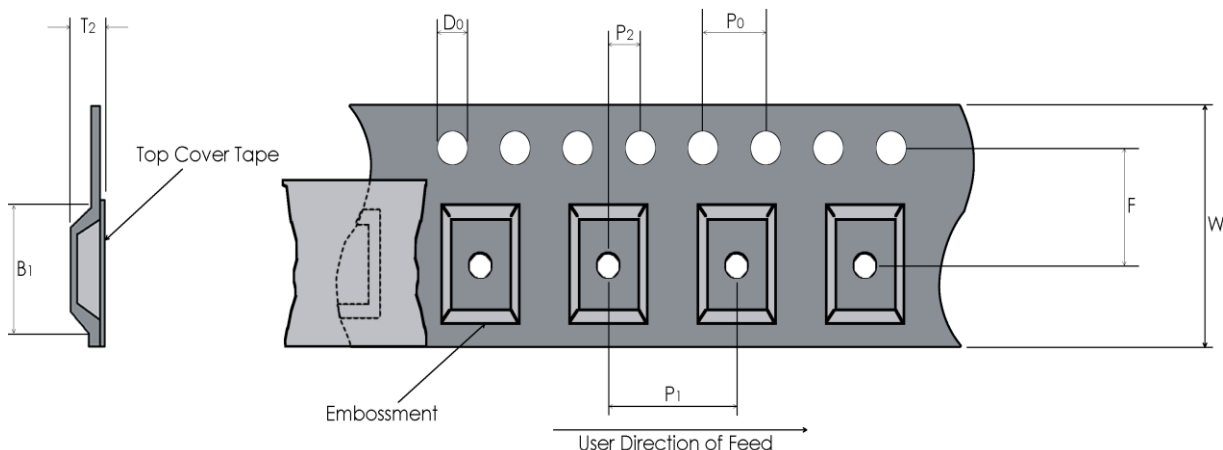
Notes

Connection Pads:

- Gold (10-40 μ in.) over Nickel (100-250 μ in.)
- Solder dipped (Sn60/Pb40 3% lead min) upon request

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
8	3.5	1.5	4.0	4.0	2.0	3.5	1.0	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

Packaging

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