

XO5166 and XO5167 Series

14 DIP, 3.3 or 5.0 Volt, HCMOS Compatible Output, OCXO



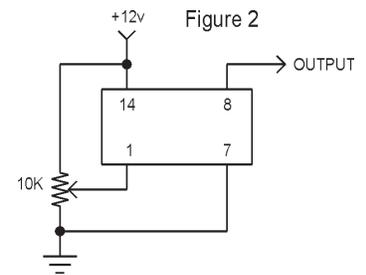
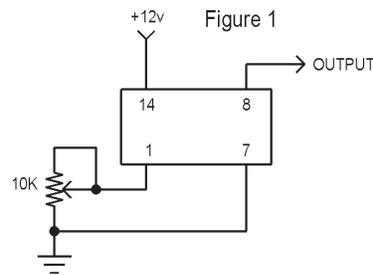
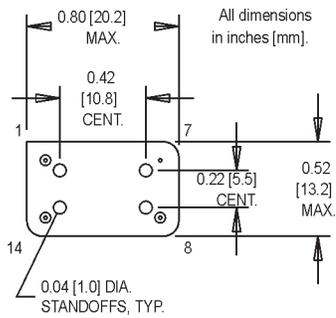
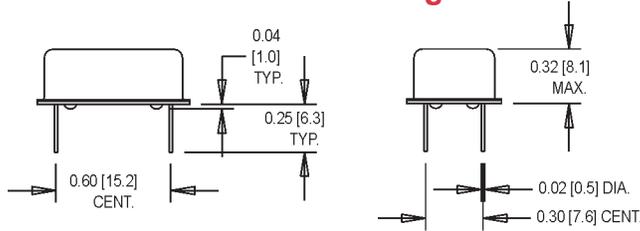
Features:

- 3.3 V or 5.0 V Supply
- Wide Frequency Range of 10 to 100 MHz
- Vectron EX-380 Alternative
- RoHS Compliant
- Full Stratum 3 Compliance (including short term hold-over stability)
- SMT Surfboard Option

Ordering Information

	XO516x	C	1	D	00.0000 MHz
Product Series					
	XO5166 = 3.3 V XO5167 = 5.0 V				
Temperature Range					
	A: 0°C to +70°C B: -20°C to +70°C C: -40°C to +85°C				
Stability					
	A: ±0.1 ppm F: ±0.2 ppm 1: Stratum 3				
Package Configuration					
	D: 14 pin DIP S: Surfboard				
Frequency (Customer Specified)					

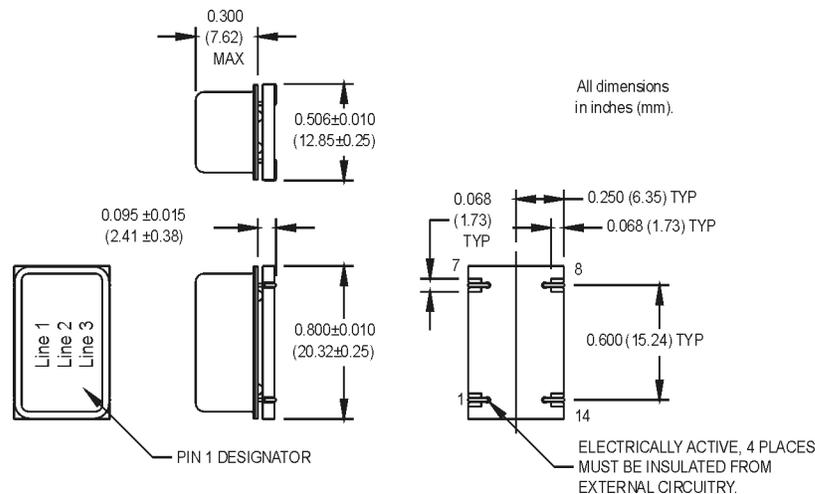
PTH Package



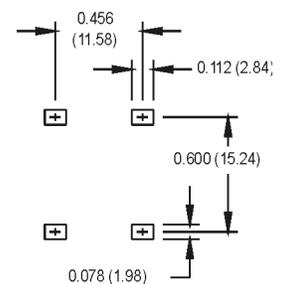
Pin Connections

PIN	FUNCTION
1	Frequency Adjust
7	Case ground & supply return
8	R.F. Output
14	Supply (+)

SMT Package



SUGGESTED SOLDER PAD LAYOUT



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PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition		
Frequency Range	Fo	10		100	MHz			
Operating Temperature	T _A	(See ordering information)			°C			
Frequency Stability		(See ordering information)						
Stratum 3 Free Run Stability				±4.6	ppm	All causes for 20 years		
Stratum 3 Holdover Stability				±0.280	ppm	For 24 hours (temperature only)		
Short-Term Stability				5 x 10 ⁻¹⁰		Tau = 0.1 to 30 seconds		
Frequency vs. Supply				2 x 10 ⁻⁸		Per percentage of voltage change		
Frequency vs. Aging				7 x 10 ⁻⁷		First year		
Frequency vs. Load				±0.01	ppm			
Supply Voltage	V _{dd}	3.15	3.3	3.45	V	XO5166 only		
	V _{dd}	4.75	5	5.25	V	XO5167 only		
Supply Current	I _{dd}			110	mA	3.3 VDC at +30°C (XO5166)		
	I _{dd}			160	mA	3.3 VDC at -20°C (XO5166)		
	I _{dd}			70	mA	5.0 VDC at +30°C (XO5167)		
	I _{dd}			110	mA	5.0 VDC at -20°C (XO5167)		
Turn-On Current				250	mA	3.3 VDC (XO5166)		
				250	mA	5.0 VDC (XO5167)		
Warm-Up Time				±0.1	ppm	2 min after power up following 24 hour off time – reference to frequency after 1 hour of operation		
Tuning Voltage	V _T	0	1.65	3.3	V	XO5166 (See Figure 1)		
	V _T	0.5	2.25	5.0	V	XO5167 (See Figure 1)		
Frequency Adjustment		±4.0			ppm	Over tuning voltage range		
Output Logic Type		HCMOS Compatible						
Symmetry	Sym	45	50	55	%	Ref. To ½ V _{dd}		
Output Load				15	pF			
Rise/Fall Time (10% to 90%)	T _r /T _f			6	nS	1-50 MHz		
	T _r /T _f			3	nS	>50 MHz		
Logic Level "0"	V _{OL}			0.4	V			
Logic Level "1"	V _{OH}	V _{dd} -0.5			V			
Phase Noise (Typical)	1 Hz	10 Hz	100 Hz	1kHz	1 kHz	10 kHz	Units	
	10 MHz	-70	-100	-130	-140	-145	-150	dBc/Hz
	80 MHz	-50	-80	-110	-130	-140	-140	dBc/Hz
Mechanical Shock	2000 g, 0.3 mS, ½ sine							
Vibration	20 Hz – 2 kHz, 10 g max							
Storage Temperature	-55°C to +125°C							
Hermeticity	Per MIL-STD-202, Method 112							
Solderability	Per EIAJ-STD-002							
Max Soldering Conditions	+245°C for 10 seconds max (DIP version only)							
Max Soldering Conditions	+220°C for 10 seconds max (SMT version only)							

HCMOS Load – see load circuit diagram #2.

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