

XO5160 - XO5164 Series

14 pin DIP, 3.3, 5.0 or 12.0 Volt, HCMOS/TTL/Sinewave, OCXO



- Standard DIP/DIL package offering tight stabilities, fast warm-up, and low current
- Ideal for PCS base stations, cellular base stations, phase locking, and SAR/SAT applications
- SMT Surfboard Option

Ordering Information

XO51xx A C V5 D -R 00-0000 MHz

Product Series
 XO5160 = 5V HCMOS/TTL
 XO5161 = 12V HCMOS/TTL
 XO5162 = 5V Sinewave
 XO5163 = 12V Sinewave
 XO5164 = 3.3V HCMOS

Operating Temperature
 A = 0°C to +60°C
 B = -20°C to +70°C
 C = -40°C to +85°C

Frequency Stability
 H: ±0.05 ppm (0.10 ppm pk-pk) G: ±0.075 ppm (0.15 ppm pk-pk)
 A: ±0.1 ppm (0.20 ppm pk-pk) B: ±0.15 ppm (0.30 ppm pk-pk)
 C: ±0.2 ppm (0.40 ppm pk-pk) D: ±0.25 ppm (0.50 ppm pk-pk)
 E: ±0.3 ppm (0.60 ppm pk-pk) F: ±0.5 ppm (1.00 ppm pk-pk)

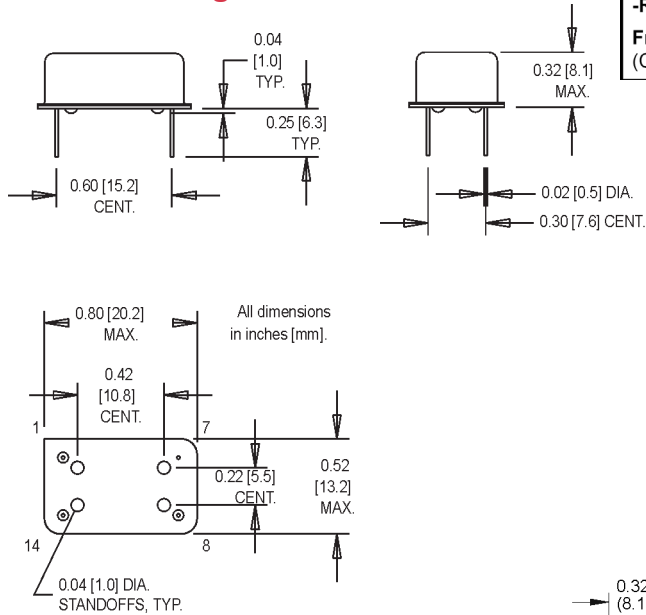
Frequency Adjustment
 R1 = Internal voltage with external potentiometer (Fig. 1)
 V5 = External voltage with external potentiometer (Fig. 2)

Package Configuration
 D: 14 pin DIP
 S: Surfboard

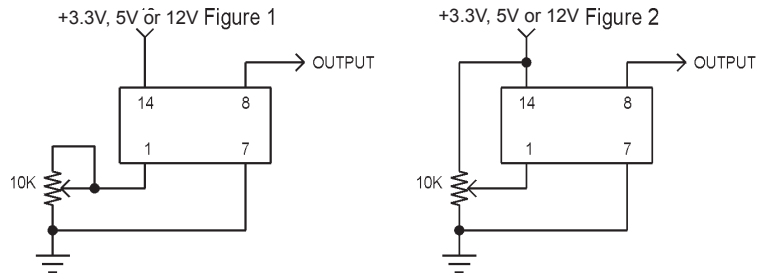
RoHS Compliance
 Blank: non RoHS compliant part
 -R: RoHS compliant part

Frequency of Operation
 (Customer Specified)

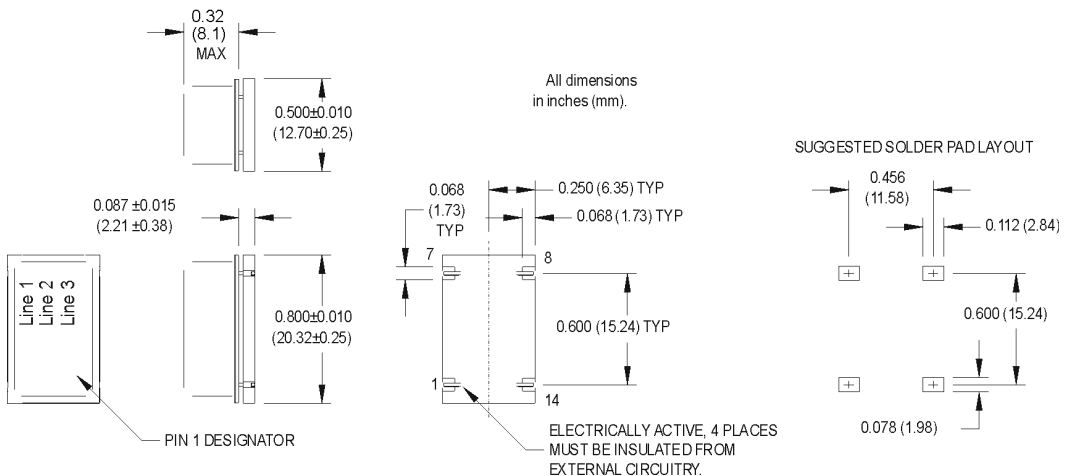
PTH Package D



M7003Sxxx, M7006Sxxx, M7007Sxxx, M7008Sxxx & M7009Sxxx - Contact factory for datasheets.



SMT Package S



Pin Connections

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

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Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions/Notes	
Frequency Range	F _O	10.0000		40.0000	MHz		
Operating Temperature	T _A	-40		+85	°C	See Ordering Information & Table 1	
Frequency Stability		±0.05		±0.5	ppm	See Ordering Information & Table 1	
Short-Term Stability				5x10 ⁻¹⁰		Tau = 0.1 to 30 secs.	
Frequency Vs. Aging				0.7	ppm	First year	
				±4.0	ppm	For 10 years	
Frequency Vs. Supply				±0.1	ppm	For ±0.2 volt supply variation	
Frequency Vs. Load				±0.01	ppm		
Supply Voltage	XO5160 XO5161 XO5162 XO5163 XO5164	V _{dd} V _{dd} V _{dd} V _{dd} V _{dd}	4.75 11.5 4.75 11.5 3.15	5.0 12.0 5.0 12.0 3.3	5.25 12.5 5.25 12.5 3.45	V V V V V	
Supply Current	XO5160 XO5161 XO5162 XO5163 XO5164	I _{dd} I _{dd} I _{dd} I _{dd} I _{dd}			70 30 70 30 110	mA mA mA mA mA	At +30°C At +30°C At +30°C At +30°C At +30°C
Turn-On Current				250	mA	After 10 secs.	
Warm-Up Time				2x10 ⁻⁷		2 min after power up following 4 hour off time – reference to frequency after 1 hour of operation	
Tuning Voltage	XO5160 XO5161 XO5162 XO5163 XO5164	V _T V _T V _T V _T V _T	0.5 0 0.5 0 0		5.0 5.0 5.0 5.0 3.3	V V V V V	
Frequency Adjustment		±4.0			ppm	Over tuning voltage range	
Output Level		1		2	V _{pk-pk}	Sinewave 50 Ohm load	
Symmetry	Sym	45/55		55/45	%	Ref. To ½ V _{dd} HCMOS output logic	
Output Load				15	pF	XO5160, XO5161, XO5164 only	
				10	LSTTL	XO5160, XO5161, XO5164 only	
			50		Ohms	XO5162, XO5163 only	
Rise/Fall Time (10% to 90%)	Tr/Tf			7	nS	1-40 MHz (Frequency dependent) HCMOS output logic	
Logic Level "0"	V _{OL}			10% V _{dd}	V	HCMOS output logic	
Logic Level "1"	V _{OH}	90% V _{dd}			V	HCMOS output logic	
Phase Noise (Typical) 10 MHz							
1 Hz			-70			dBc/Hz Offset from carrier	
10 Hz			-100			dBc/Hz Offset from carrier	
100 Hz			-130			dBc/Hz Offset from carrier	
1 kHz			-140			dBc/Hz Offset from carrier	
10 kHz			-145			dBc/Hz Offset from carrier	
100 kHz			-150			dBc/Hz Offset from carrier	
Environmental	Vibration	2000 Hz, 10 g					
	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 secs. Max. (DIP version only)					
	Max Soldering Conditions	+220°C for 10 secs. Max. (SMT version only)					

XO5160-XO5162: TTL Load – see load circuit diagram #1. HCMOS Load – see load circuit diagram #2.

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