

VFXO301

XO Low Jitter 2.5V, 3.3V

5x7mm SMD, LVPECL / LVDS

Features

- 38MHz to 800 MHz frequency range
- Ultra low phase noise
- <0.5 ps RMS jitter over 12kHz - 20MHz



RoHS Status



Applications

- Optical Networking, SONET / SDH
- 10 Gigabit Ethernet
- Broadband Access

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		38 38		800 640	MHz	3..3V 2.5V
Frequency Stability	$\Delta F/F$	Vs. Operating Temperature			± 50 ± 25 ± 20	ppm	Order Code B Order Code C Order Code D
		Vs. Supply Voltage			± 3	ppm/V	
		Vs. Aging / Year		± 3 ± 1		ppm ppm/y	First Year After first year
Operating Temperature	T		0° -40°		+70° +85°	°C	Order Code B Order Code G
Output		LVPECL LVDS			Available up to 800MHz Available up to 640MHz		Order Code L Order Code D
Supply Voltage	V _{CC}		3.15 2.375	3.3 2.5	3.45 2.625	V	Order Code E Order Code G
Period RMS Jitter		77.76MHz 155.52MHz 311.08MHz 622.08MHz		2.5 3 3 6	4 4 5 8	ps	
Integrated RMS Jitter 12kHz to 20MHz		155.52MHz 311.04MHz 622.08MHz		0.4 0.4 0.4	0.5 0.5 0.5	ps	
Period Jitter Peak-to-Peak		77.76MHz 155.52MHz 311.08MHz 622.08MHz		18 20 25 42	30 30 30 55	ps	
Symmetry		(V _{DD} -1.3) V _{DC} 1.25V _{DC}	45 45		55 55	%	PECL LVDS

VFXO301
XO Low Jitter 2.5V, 3.3V
5x7mm SMD, LVPECL / LVDS



Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Phase Noise		10Hz		-66			@77.76MHz
		100Hz		-96			
		1kHz		-124		dBc/Hz	
		10kHz		-136			
		100kHz		-132			
		1MHz		-145			
		10Hz		-62			@155.52MHz
		100Hz		-92			
		1kHz		-120		dBc/Hz	
		10kHz		-132			
		100kHz		-128			
		1MHz		-144			
		10Hz		-59			@311.04MHz
		100Hz		-86			
		1kHz		-116		dBc/Hz	
		10kHz		-129			
		100kHz		-124			
		1MHz		-138			
		10Hz		-48			@622.08MHz
		100Hz		-80			
		1kHz		-108		dBc/Hz	
		10kHz		-118			
		100kHz		-114			
		1MHz		-130			
Supply Current	I _{CC}	38 – 100MHz			65	mA	PECL
		100 – 300MHz			80		
		300 – 800MHz			95		
		38 – 100MHz			45	mA	LVDS
		100 – 320MHz			60		
		320 – 640MHz			75		
Load	50 Ohms to V _{DD} -2V (PECL) 100 Ohms (LVDS)						
Output High Voltage	V _{OH}		V _{DD} -1.025 1.4		1.6	V	PECL LVDS
Output Low Voltage	V _{OL}		0.9	1.1	V _{DD} -1.620	V	PECL LVDS
Output Differential Voltage	V _{OD}		247	355	454	mV	LVDS
Offset Voltage	V _{OS}		1.125	1.2	1.375	V	LVDS
Rise / Fall Time	T _R /T _F	20% to 80%		0.6 0.7	1.5 1.0	ns	PECL LVDS
Tristate	"1": Output Enable – Pin 1 may float or 2.8V min (3.3V V _{DD}) or 2.25V min (2.5V V _{DD}) "0": Tristate – Pin 1 requires 0.4V max (3.3V or 2.5V V _{DD})						

VFXO301
XO Low Jitter 2.5V, 3.3V
5x7mm SMD, LVPECL / LVDS



Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Lead Temperature		Soldering, 10s max			260	°C	
Storage Temperature	T _s		-55		+125°	°C	
Junction Temperature	T _J				+125°	°C	
ESD Protection		Human Body Model			2	kV	

Environmental and Mechanical Conditions

Parameter	Conditions
Shock	1000 Gs, 0.35ms, ½ sine wave, 3 shocks in each plane
Humidity	Resistant to 85 °R.H. at 85 °C
Vibration	10-2000 Hz of 0.06" d.a. or 20 Gs, whichever is less
Leak	Leak rate less than 5x10 ⁻⁸ atm.cc/s of helium (crystal only)
Case	Ceramic with hermetic resistance-welded metal lid
Pads	Solderable gold over nickel
Marking	Epoxy ink or laser engraved
Resistance to Solvents	MIL STD 202, Method 215

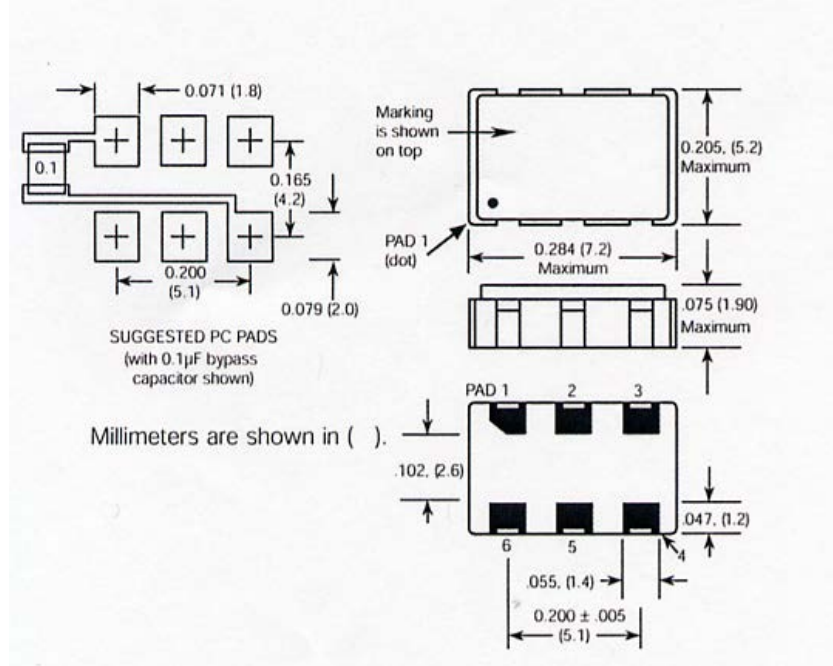
VFXO301

XO Low Jitter 2.5V, 3.3V

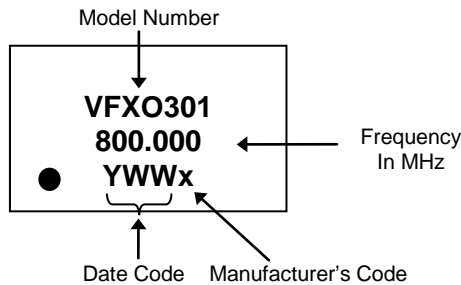
5x7mm SMD, LVPECL / LVDS

Pin Assignments

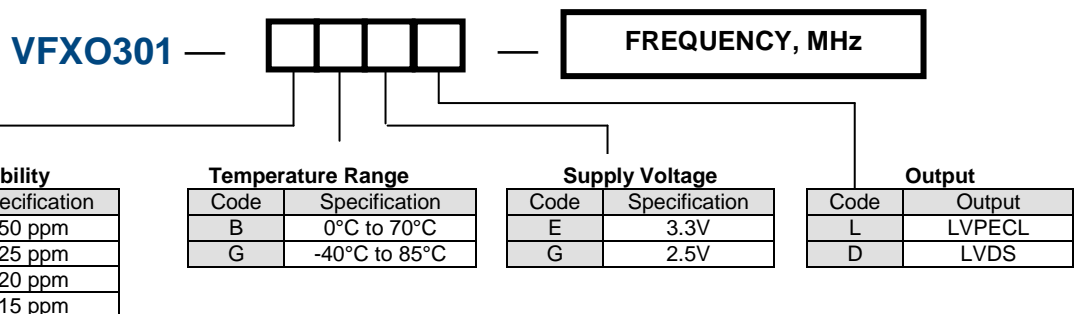
Pin #	Connection
1	Tristate
2	N/C
3	Case, GND
4	Output
5	Output
6	Supply Voltage



Marking Specification



How to Order



**not available for all frequencies.
Please consult the factory