

# VFVX301

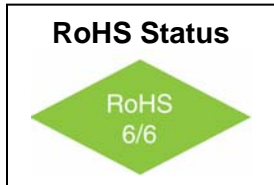
## VCXO Low Jitter

### 5x7mm SMD, LVPECL / LVDS



#### Features

- 38MHz to 640MHz Frequency Range
- Ultra Low Jitter and Phase Noise: 0.5 ps typical
- Wide pull  $\pm 150$ ppm



#### Applications

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

#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		38		640	MHz	
Frequency Stability	$\Delta F/F$	Vs. Operating Temp. B: 0°C to +70°C C: -10°C to +60°C G: -40°C to +85°C			$\pm 50$ $\pm 25$ $\pm 20$	ppm	Order Code B Order Code C Order Code D
		Vs. Supply Voltage Vs. Aging / Year		$\pm 3$ $\pm 3$ $\pm 1$		ppm/V ppm ppm	First Year per year
Operating Temperature	T		0° -40°		+70° +85°	°C	Order Code B Order Code G
Output		LVPECL LVDS					Order Code L Order Code D
Supply Voltage	V <sub>cc</sub>		3.15	3.30	3.45	V	
Voltage Control	V <sub>c</sub>		0		3.3	V	
APR				100	150	ppm	
Jitter	1 $\sigma$	12KHz to 20MHz		0.4	0.5	ps	@622.08MHz
SSB Phase Noise		10Hz 100Hz 1KHz 10KHz 100KHz		-48 -80 -108 -118 -114			@622.08MHz



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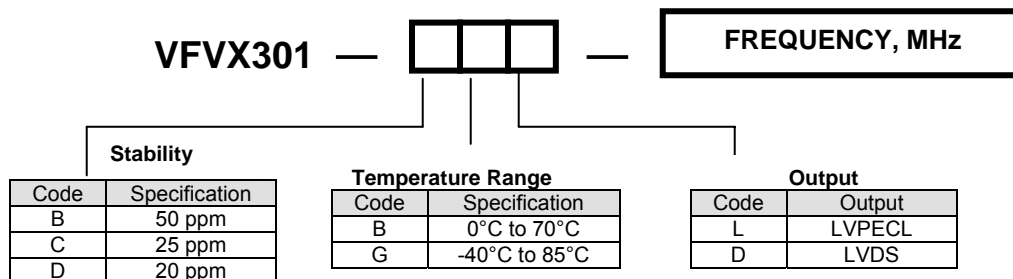
### 5x7mm SMD, LVPECL / LVDS



#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Current	I <sub>cc</sub>	50 Ohm Load			75	mA	
Load	50 Ohm to V <sub>cc</sub> -2V or Thevenin Equivalent Bias Required						
Duty Cycle		@ 50%	45	50	55	%	
Rise / Fall Time	T <sub>r</sub> /T <sub>f</sub>	20% to 80%		0.3	0.4	ns	
Logic "1" Level	V <sub>oh</sub>		1.4		1.6	V	
Logic "0" Level	V <sub>ol</sub>		0.9		1.1	V	
Start up time				2	10	ms	
Tristate	Active Input HIGH >2.8V or floating Tristate Input LOW <0.4V			-50	-40	dBc	
Input Impedance		F <sub>m</sub> < 10Khz	50K			Ω	
Deviation slope		Monotonic positive					
Linearity				5	15	%	
Modulation			10			KHz	3dB BW

#### How to Order



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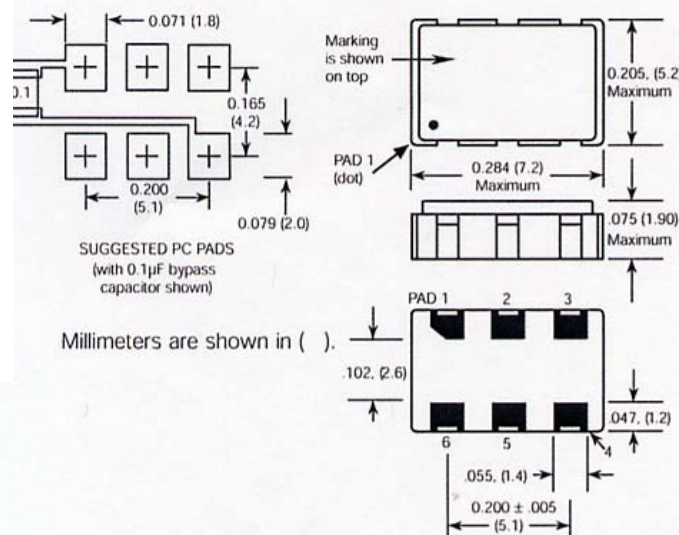
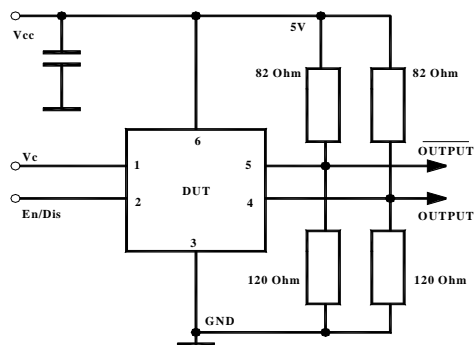


#### Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	Vcc		-0.5		4.6	V	
Storage Temperature	Ts		-55		+125°	°C	
Junction Temperature	Tj				+125°	°C	
Control Voltage	Vc		-1		9	V	

#### Environmental and Mechanical

Parameter	Specification
Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Vibration	Per MIL-STD-883, Method 2007, Condition A
Soldering Conditions	230°C for 90s max
Hermetic Seal	Leak rate less than $5 \times 10^{-8}$ atm.cc/s of helium (crystal only)



Pin #	Connection
1	Vc
2	Tristate
3	Case, GND
4	Output
5	Comp. Output
6	Vcc

