

# 3.3V SMD Stratum III HCMOS TCXO/VCTCXO



Model: FOX331 Series

RoHS Compliant / Preliminary

Rev. 4/21/2008

Page 1 of 2

[http://www.foxonline.com/need\\_a\\_sample.htm](http://www.foxonline.com/need_a_sample.htm)

Need a  
Sample®

## • PART NUMBER SELECTION [Learn More](#)

Part Number	Model Number	Frequency Stability	Operating Temperature (°C)
822-Frequency-xxxxx	FOX331	TCXO	-20 ~ +70
822R-Frequency-xxxxx	FOX331R	TCXO	-40 ~ +85
822E-Frequency-xxxxx	FOX331E	VCTCXO	-20 ~ +70
822ER-Frequency-xxxxx	FOX331ER	VCTCXO	-40 ~ +85

## • Available Frequencies

10.000MHz	12.800MHz	16.384MHz
19.200MHz	19.440MHz	20.000MHz
26.000MHz		

## • ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Storage Temperature Range	-55°C ~ +125°C
Frequency Stability	
Overall (including 20 years aging) <sup>1</sup>	±4.6PPM
Over Temp Range (-20°C ~ +70°C)	±0.28PPM
Over Temp Range (-40°C ~ +85°C)	±0.37PPM
Supply Voltage (V <sub>DD</sub> )	3.3V±5%
Input Current (I <sub>DD</sub> )	6mA
Rise Time (10% ~ 90% V <sub>DD</sub> ) (T <sub>R</sub> )	5nS
Fall Time (90% ~ 10% V <sub>DD</sub> ) (T <sub>F</sub> )	5nS
Output Symmetry ( 50% V <sub>DD</sub> )	45% ~ 55%
Output Voltage (HCMOS)	
Output Low (V <sub>OL</sub> )	10%V <sub>DD</sub>
Output High (V <sub>OH</sub> )	90%V <sub>DD</sub>
Output Current (I <sub>OL</sub> )	6mA Min
(I <sub>OH</sub> )	-6mA Min
Output Load	15pF
Startup Time	2mS
Pullability (VCTCXO) (V <sub>c</sub> = 1.65±1.65V) <sup>2</sup>	±5PPM Min
Phase Noise	
@100Hz	-120dBc
@1kHz	-140dBc
@10kHz	-148dBc
Maximum Soldering Temp / Time	260°C / 10 Seconds
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au

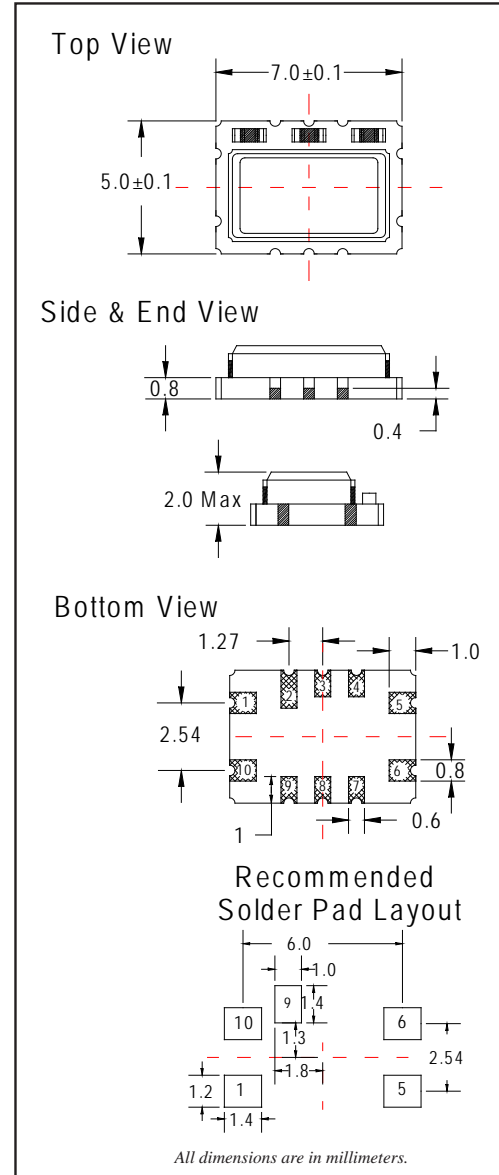
<sup>1</sup> Inclusive of initial frequency tolerance, operating temperature range, 20 years aging, input voltage change, load change, shock and vibration.

<sup>2</sup> For proper operation, a control voltage (V<sub>c</sub>) must be applied to pin 1 on VCTCXOs.

<sup>3</sup> An internal pullup resistor from pin 9 to pin 10 allows active output if pin 9 is left open.

Note: The above specifications, having been carefully prepared and checked, is believed to be accurate at the time of publication; however, no responsibility is assumed by Fox Electronics for inaccuracies.

Dimensional drawing is for reference to critical specifications defined by size measurements. Certain non-critical visual attributes, such as side castellations, etc. may vary.



### Pin Connections

#### FOX331/331R (TCXO)

#1 NC  
#2 NC  
#3 NC  
#4 NC  
#5 GND  
#6 Output  
#7 NC  
#8 NC  
#9 E/D  
#10 V<sub>DD</sub>

#### FOX331E/331ER (VCTCXO)

#1 V<sub>c</sub>  
#2 NC  
#3 NC  
#4 NC  
#5 GND  
#6 Output  
#7 NC  
#8 NC  
#9 E/D  
#10 V<sub>DD</sub>

### • ENABLE / DISABLE FUNCTION

(Pin 9)	OUTPUT (Pin 6)
OPEN <sup>3</sup>	ACTIVE
'1' Level V <sub>IH</sub> ≥ 70%V <sub>DD</sub>	ACTIVE
'0' Level V <sub>IL</sub> ≤ 30%V <sub>DD</sub>	High Z

# 3.3V SMD Stratum III HCMOS TCXO/VCTCXO



Model: FOX331 Series

RoHS Compliant / Preliminary

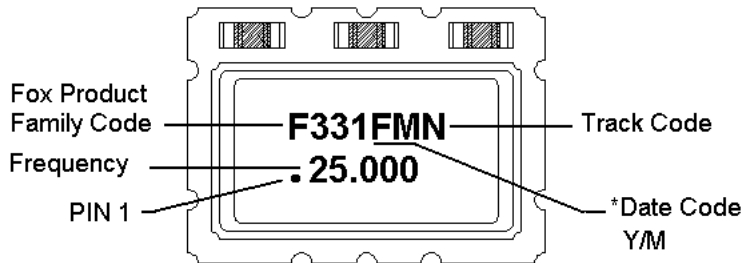
Rev. 4/21/2008

Page 2 of 2

[http://www.foxonline.com/need\\_a\\_sample.htm](http://www.foxonline.com/need_a_sample.htm)

Need a Sample®

## FOX331 Series Marking Identification



\* Year / Month Date Codes

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Code	A	B	C	D	E	F	G	H	J	K	L	M
Month	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Code	A	B	C	D	E	F	G	H	J	K	L	M

### • TAPE SPECIFICATIONS (millimeters)

MODEL	A	B	C	D	E	F	STD Reel QTY
FOX331	∅1.5	4.0	8.0	7.5	16.0	2.16	3,000

### • REEL SPECIFICATIONS (millimeters)

MODEL	G	H	I	J	K	L	M
FOX331	1.5	∅13.5	∅20.2	100.0	∅330	16.4	2.0

