

3.3V SMD Stratum III HCMOS TCXO/VCTCXO



Model: FOX331 Series

RoHS Compliant

Rev. 11/8/2013

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• PART NUMBER SELECTION

Part Number	Model Number	Frequency Stability (vs Temperature)	Operating Temperature (°C)
822-Frequency-xxxxx	FOX331	±0.28 PPM	-20 ~ +70
822R-Frequency-xxxxx	FOX331R	±0.37 PPM	-40 ~ +85
822AR-Frequency-xxxxx	FOX331AR	±0.28 PPM	-40 ~ +85
822E-Frequency-xxxxx	FOX331E	±0.28 PPM	-20 ~ +70
822ER-Frequency-xxxxx	FOX331ER	±0.37 PPM	-40 ~ +85

• Available Frequencies

10.000MHz	12.800MHz	16.384MHz
19.200MHz	19.440MHz	20.000MHz
26.000MHz	27.000MHz	40.000MHz

• ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Storage Temperature Range	-55°C ~ +125°C
Frequency Stability	
Overall (including 20 years aging) ¹	±4.6PPM
Supply Voltage (V _{DD})	3.3V±5%
Input Current (I _{DD})	6mA
Rise Time (10% ~ 90% V _{DD}) (T _r)	5nS
Fall Time (90% ~ 10% V _{DD}) (T _f)	5nS
Output Symmetry (50% V _{DD})	45% ~ 55%
Output Voltage (HCMOS)	
Output Low (V _{OL})	10% V _{DD}
Output High (V _{OH})	90% V _{DD}
Output Current (I _{OL})	6mA Min
(I _{OH})	-6mA Min
Output Load	15pF
Startup Time	2mS
Pullability (VCTCXO) (V _c = 1.65±1.65V) ²	±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

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

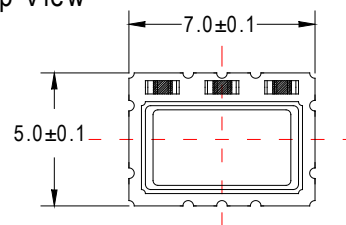
² For proper operation, a control voltage (V_c) must be applied to pin 1 on VCTCXOs.

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

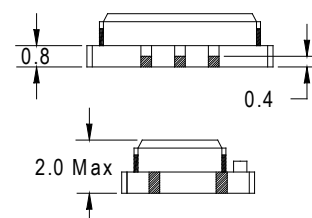
Note: The above specifications, having been carefully prepared and checked, is believed to be accurate at the time of publication; however, no responsibility is assumed by Fox Electronics for inaccuracies.

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

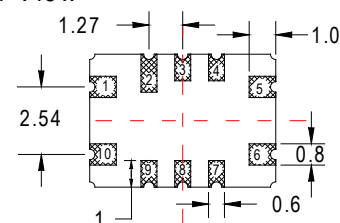
Top View



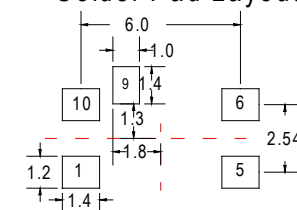
Side & End View



Bottom View



Recommended
Solder Pad Layout



All dimensions are in millimeters.

Pin Connections

FOX331/331R/331AR (TCXO)

#1 NC	#6 Output
#2 NC	#7 NC
#3 NC	#8 NC
#4 NC	#9 E/D
#5 GND	#10 V _{DD}

FOX331E/331ER (VCTCXO)

#1 V _c	#6 Output
#2 NC	#7 NC
#3 NC	#8 NC
#4 NC	#9 E/D
#5 GND	#10 V _{DD}

• ENABLE / DISABLE FUNCTION

(Pin 9)	OUTPUT (Pin 6)
OPEN ³	ACTIVE
'1' Level V _{IH} ≥ 70% V _{DD}	ACTIVE
'0' Level V _{IL} ≤ 30% V _{DD}	High Z

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• TAPE SPECIFICATIONS (millimeters)

MODEL	A	B	C	D	E	F	STD Reel QTY
FOX331	Ø1.5	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	Ø13.5	Ø20.2	100.0	Ø330	16.4	2.0

