3.3V SMD Stratum III HCMOS TCXO/VCTCXO

Model: FOX331 Series | **RoHS Compliant / Preliminary** | **Rev. 4/21/2008**

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• PART NUMBER SELECTION

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Part Number	Model Number	Frequency Stability	Operating Temperature (ºC)
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		

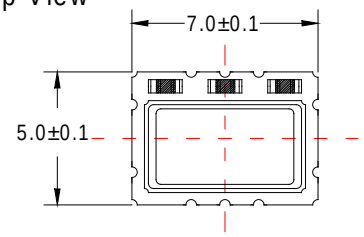
• ELECTRICAL CHARACTERISTICS

PARAMETERS	MAX (unless otherwise noted)
Storage Temperature Range	-55ºC ~ +125ºC
Frequency Stability	
Overall (including 20 years aging)[1]	±4.6PPM
Over Temp Range (-20ºC ~ +70ºC)	±0.28PPM
Over Temp Range (-40ºC ~ +85ºC)	±0.37PPM
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	260ºC / 10 Seconds
Moisture Sensitivity Level (MSL)	1
Termination Finish	Au

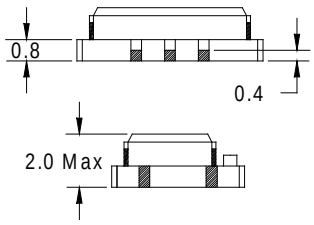
[1] Inclusive of initial frequency tolerance, operating temperature range, 20 years aging, input voltage change, load change, shock and vibration.
[2] For proper operation, a control voltage (Vc) must be applied to pin 1 on VCTCXOs.
[3] An internal pullup resistor from pin 9 to pin 10 allows active output 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.

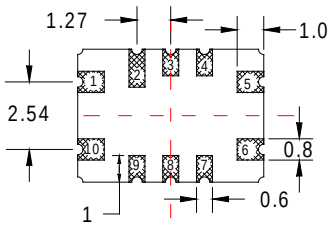
Top View



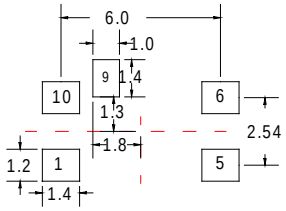
Side & End View



Bottom View



Recommended Solder Pad Layout



All dimensions are in millimeters.

Pin Connections

FOX331/331R (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 Vc	**#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 $V_{IH} \geq 70\%V_{DD}$	ACTIVE
'0' Level $V_{IL} \leq 30\%V_{DD}$	High Z

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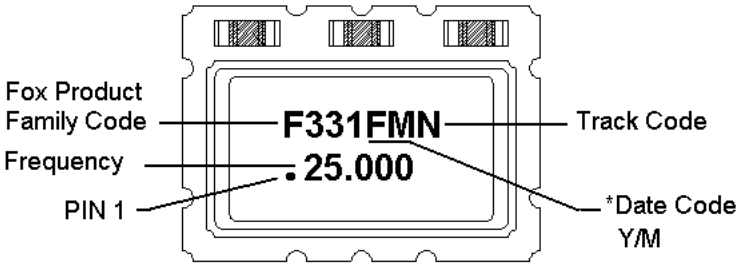
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FOX331 Series Marking Identification



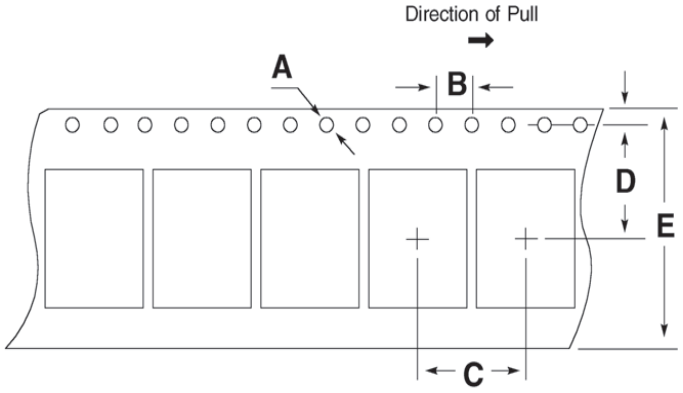
* Year / Month Date Codes												
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Code	A	B	C	D	E	F	G	H	J	K	L	M
Month	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Code	A	B	C	D	E	F	G	H	J	K	L	M

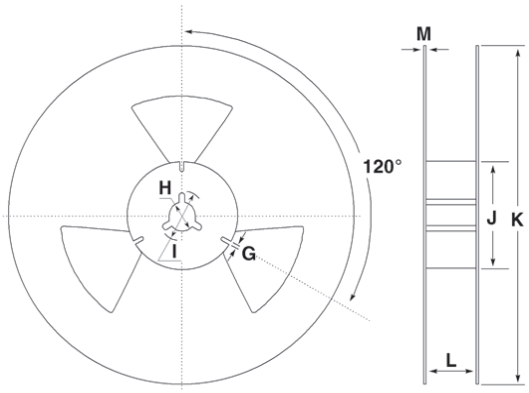
• TAPE SPECIFICATIONS (millimeters)

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





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