

Helping Customers Innovate, Improve & Grow



TX-321

Description

The TX-321 Series TCXO combines Vectrons lowest phase noise TCXO option with good g-sensitivity in a 23x18 mm package.

Features

- Low Phase Noise, Low g-sensitivity 0.2ppb/g
- Fully RoHS Compliant 
- Surface Mount, Low Profile
- Shock Survival up to 10k g
- Frequency Range: 5 MHz to 50 MHz
- Common Frequencies: 5, 10, 16.368, 20, 25, 32.736, 38.4, 40, & 50 MHz

Applications

- Military Portable Radios
- GPS Telemetry
- Test and Measurement Equipment

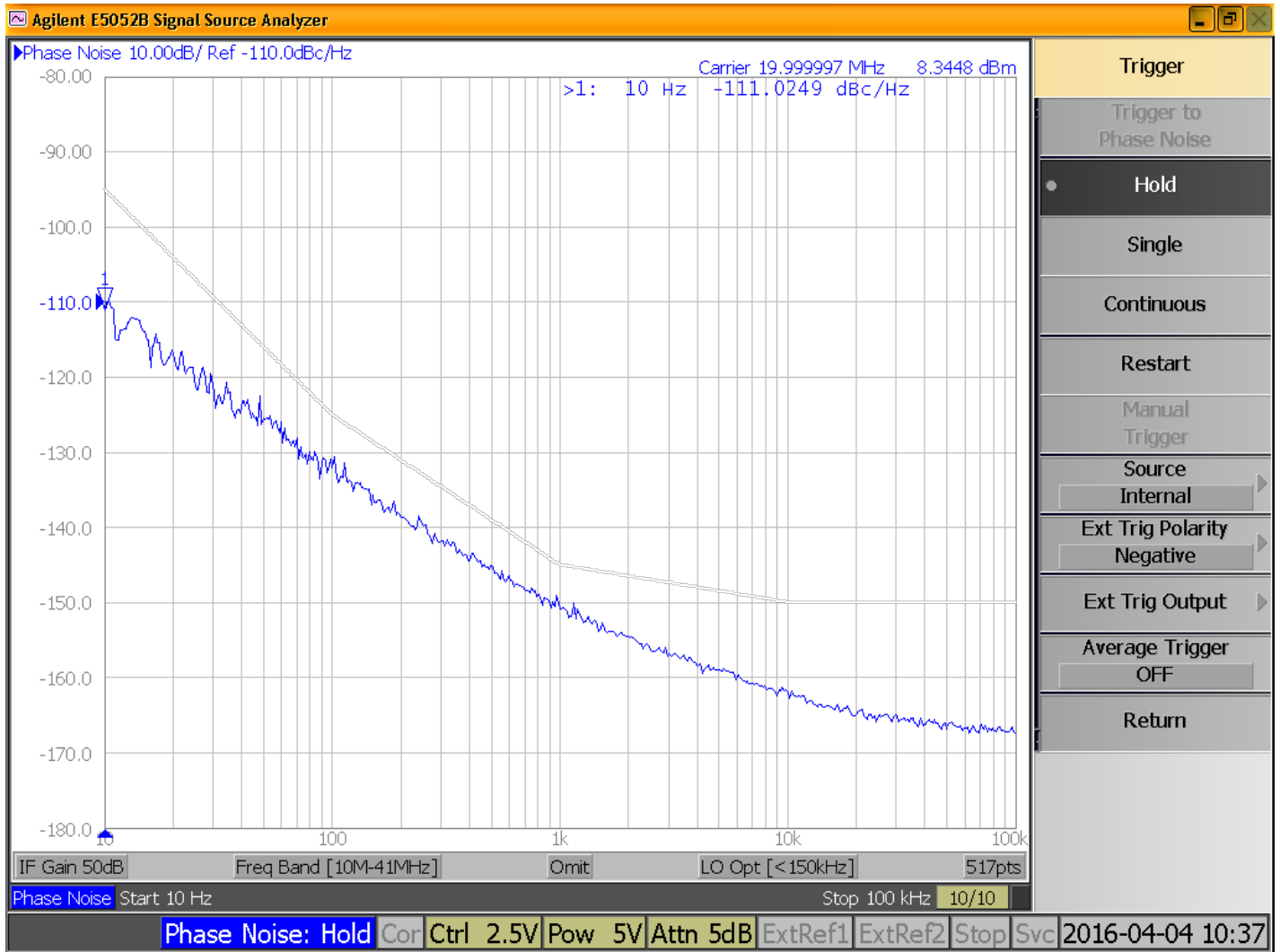
Performance Specifications^{1,2}

Parameter	Min	Typ	Max	Units	Condition
Frequency Stabilities ¹					
vs. operating temperature range (referenced to +25°C)	-1.0		+1.0	ppm	-40... +85°C (for tighter stabilities contact factory)
Initial Tolerance	-1.0		+1.0	ppm	at time of shipment, nominal EFC Vs ± 5% Load ± 10% @ +40°C for 15 years
vs. supply voltage change	-0.1		+0.1	ppm	
vs. load change	-0.1		+0.1	ppm	
vs. aging / 1 year		±1		ppm	
vs. aging			4.0	ppm	
Supply Voltage (Vs)					
Supply voltage	4.75	5.0	5.25	VDC	
Supply voltage	3.135	3.3	3.465	VDC	
Current consumption			25	mA	Increases with output frequency

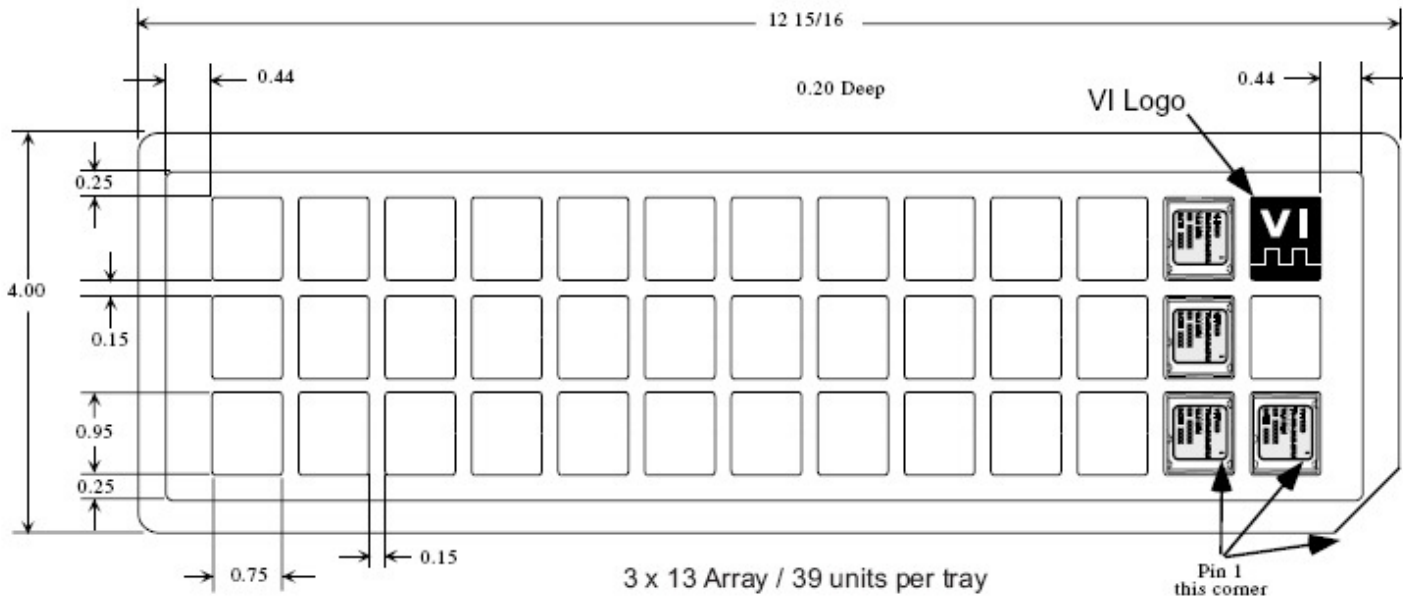
Performance Specifications

Parameter	Min	Typ	Max	Units	Condition
RF Output					
Signal	HCMOS				
Load		15		pF	
Signal Level (Vol)			0.1*Vs	V	
Signal Level (Voh)	0.9*Vs			V	
Rise/Fall Time			5	ns	@ nominal Load and 10% to 90% of waveform
Duty cycle	40	50	60	%	@ nominal Load and @ 50% level
Signal	Sine				
Load		50		Ohm	
Output Power	0		6	dBm	into 50 Ohms
Harmonics			-30	dBc	
Electronic Frequency Control (EFC)					
Tuning Range (optionsA)	Fixed; No adjust				
Tuning Range (options B)	±5.0		±12	ppm	
Tuning Slope	Positive				
Control Voltage Range	0.0		Vs	VDC	
Freq. control input impedance	100			kohm	
Additional Parameters²					
Phase Noise ³ (@ 10 MHz - no vibration)		-116 -138 -150 -162 -165		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz
Phase Noise ³ (@ 40 MHz - no vibration)		-104 -126 -144 -160 -165		dBc/Hz dBc/Hz dBc/Hz dBc/Hz dBc/Hz	10 Hz 100 Hz 1 kHz 10 kHz 100 kHz
g-sensitivity		0.2		ppb/g	per axis
Shock					MIL-STD-883G; Method 2002; Condition B
Vibration Sine					MIL-STD-202G, METHOD 204D, Test Condition D
Thermal Cycling					MIL-STD-202, METHOD 107, Test Condition A
Absolute Maximum Ratings					
Supply voltage (Vs)			6.0	V	Damage will occur beyond this level
Control Voltage	0		Vs	V	
Operable temperature range	-45		+90	°C	
Storage temperature range	-55		+125	°C	

Phase Noise Plot at 20 MHz



Standard Shipping Method



The Standard ship method for volume production of the TX-321 series is in a matrix tray. These trays are 100% recyclable. The trays also offer the added feature that they can be continuously feed into a pick-n-place machine eliminating the down time required with tape-n-reel.

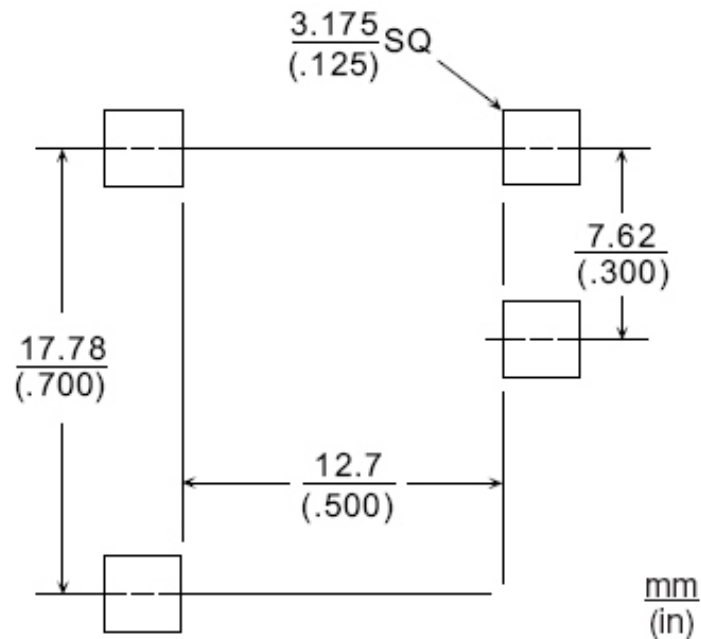
Recommended Reflow Profile

IPC/JEDEC J-STD-020 (latest revision)

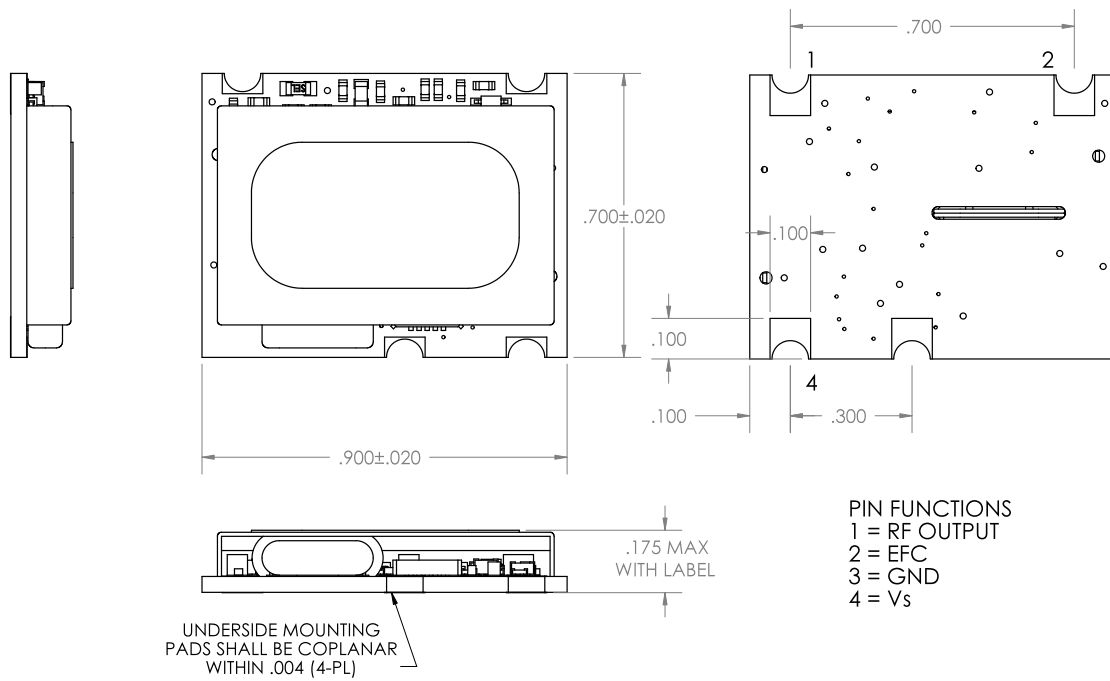
Additional Information:

This SMD oscillator has been designed for pick and place reflow soldering.

Recommended Pad Layout

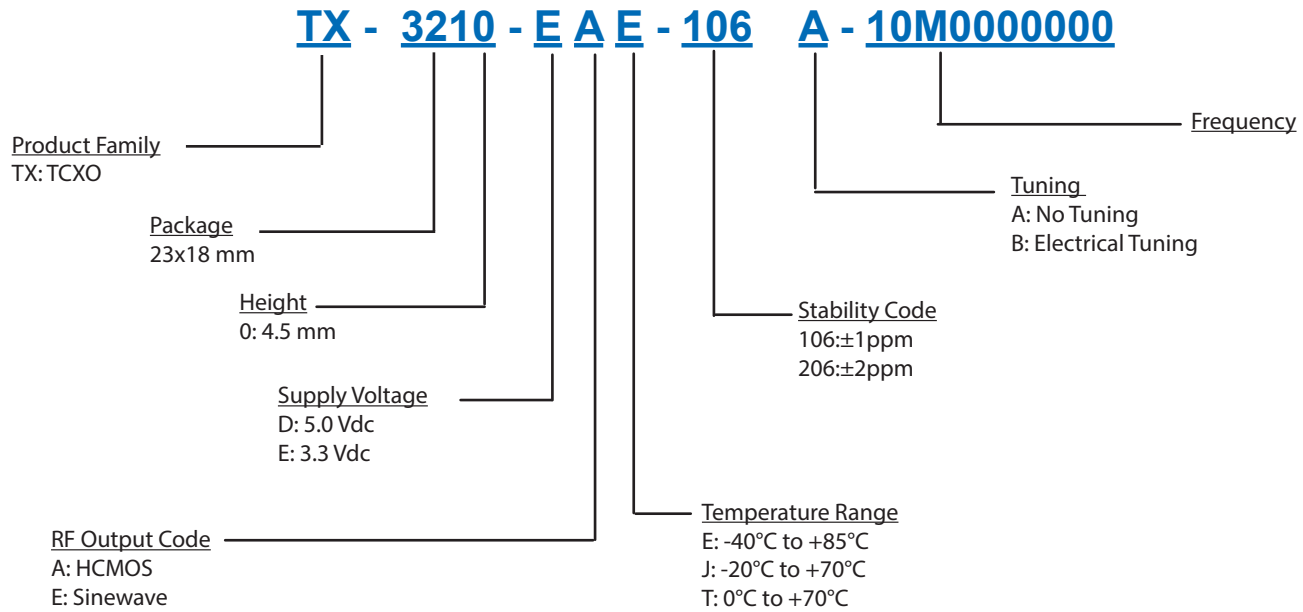


Outline Drawing / Enclosure



All dimensions in inches

Ordering Information



Available Frequencies (MHz) ⁵			
5.000	6.250	8.184	9.600
10.000	12.500	16.368	19.200
20.000	25.00	32.736	38.400
40.000	50.000		

Notes:

1. Contact factory for improved stabilities or additional product options. Not all options and codes are available at all frequencies.
2. Unless otherwise stated, all values are valid after warm-up time and refer to typical conditions for supply voltage, frequency control voltage, load, and temperature (25°C).
3. Phase noise degrades with increasing output frequency.
4. Subject to technical modification.
5. Frequencies not listed above will require NRE charges and additional lead times.

For Additional Information, Please Contact

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