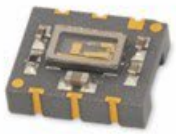
GREENRAY
frequency control solutions

T1308

ULTRA-LOW ACCELERATION SENSITIVITY

tcxo



Product Description

Greenray Industries' T1308 Low Phase Noise TCXO offers ultra-low acceleration sensitivity for vibration and shock sensitive applications. When operating under random vibration, the T1308 can offer phase noise improvements of more than -40dBc/Hz compared to conventional XOs.

Features

- Low Phase Noise
- Frequency: 10 - 52MHz
- SMD Package 9.1 x 7.5mm
- +3.3Vdc Supply
- CMOS or Clipped Sine output
- Low G-Sensitivity options
- Patented Compensation technique to reduce vibration effect
- 100% screened for g-Sensitivity performance

Applications

- Telecommunications
- High-shock resistant
- Mobile radio
- Mobile instrumentation
- Airborne communications
- Wireless communications
- Microwave receivers

REV: A

Greenray Industries, Inc., 840 West Church Road, Mechanicsburg, PA 17055
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www.greenrayindustries.com

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T1308 SERIES
10 MHz to 52 MHz

tcxo

Electrical Characteristics

Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	@ +25°C	10		52	MHz	(FREQ.)
Frequency Stability	-20°C to +70°C		± 0.3		ppm	N37
	-40°C to +85°C		± 0.5		ppm	T57
Aging	1st year			1.0	ppm	
	10 years			3.0	ppm	
Acceleration Sensitivity	Worst axis tested @ 90 Hz, 10 g			0.7	ppb/g	SG
				0.1	ppb/g	LG
				0.07	ppb/g	ULG
Frequency vs Reflow	After 24 hrs recovery			1	ppm	
Frequency vs Voltage	± 5%			0.2	ppm	
Voltage Control (EFC)	0 to Supply, Positive Slope		± 8.0		ppm	

Phase Noise Performance

Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	Ordering Code
Static @ 10 MHz Nom. Freq.	10		-98		dBc/Hz	
	100		-128		dBc/Hz	
	1 k		-140		dBc/Hz	
	10 k		-150		dBc/Hz	
	100 k		-157		dBc/Hz	
	Floor		-160		dBc/Hz	

DC Supply

Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Supply Voltage	± 5%	3.0	3.3	3.6	Vdc	B
Supply Current	CMOS			3	mA	
	Clipped Sine			6	mA	

RF Output

Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS						C
Load			15		pF	
Level		0.8 Vdd "1" Level		0.2 Vdd "0" Level	V	
Symmetry		40	50	60	%	
Clipped Sine						CS
Load			10 pF // 10 kΩ			
Output Power		+ 0.8			V p-p	

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Environmental and Mechanical Specifications				
Test	Standard	Method	Condition	Description
Vibration	MIL-STD-202G	204	C	Cond I-F
Shock	MIL-STD-202G	213	I	Custom Requirement

Recommendations and General Information	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +105°C
Terminal Finish	Au (RoHS), SnAg 96.5/3.5(Lead-free) (SnPb 63/37 (non-RoHS) Available upon request)
Package Weight	3 grams
Soldering Instruction	Reflow
Shipping	Tray Pack, Tape & Reel

Ordering Example

T1308 - T 58 - CS - SG - 10.0 MHz - E

Model	Temp. Range	Stability	Output	G-Sensitivity	Freq. (MHz)	Term. Finish
	J: -45 to +105°C T: -40 to +85°C	58: ±0.05ppm 17: ±0.1ppm	C: CMOS CS: Clipped Sine	SG: < 0.7 ppb/g LG: < 0.1 ppb/g ULG: < 0.07 ppb/g HG: Customer-specific	10 to 52	E: Au (RoHS) LF: SnAg 96.5/3.5(Lead-free)

The Order ID (T1308-T58-CS-SG-10.0MHz-E) is only used to issue the preliminary quote. The Part Number (T1308-1) for the quoted Electrical Characteristics, Screenings, and other options, will be provided with the Greenray Sales Order.

Other specification options are available, please use the contact information below for more information.

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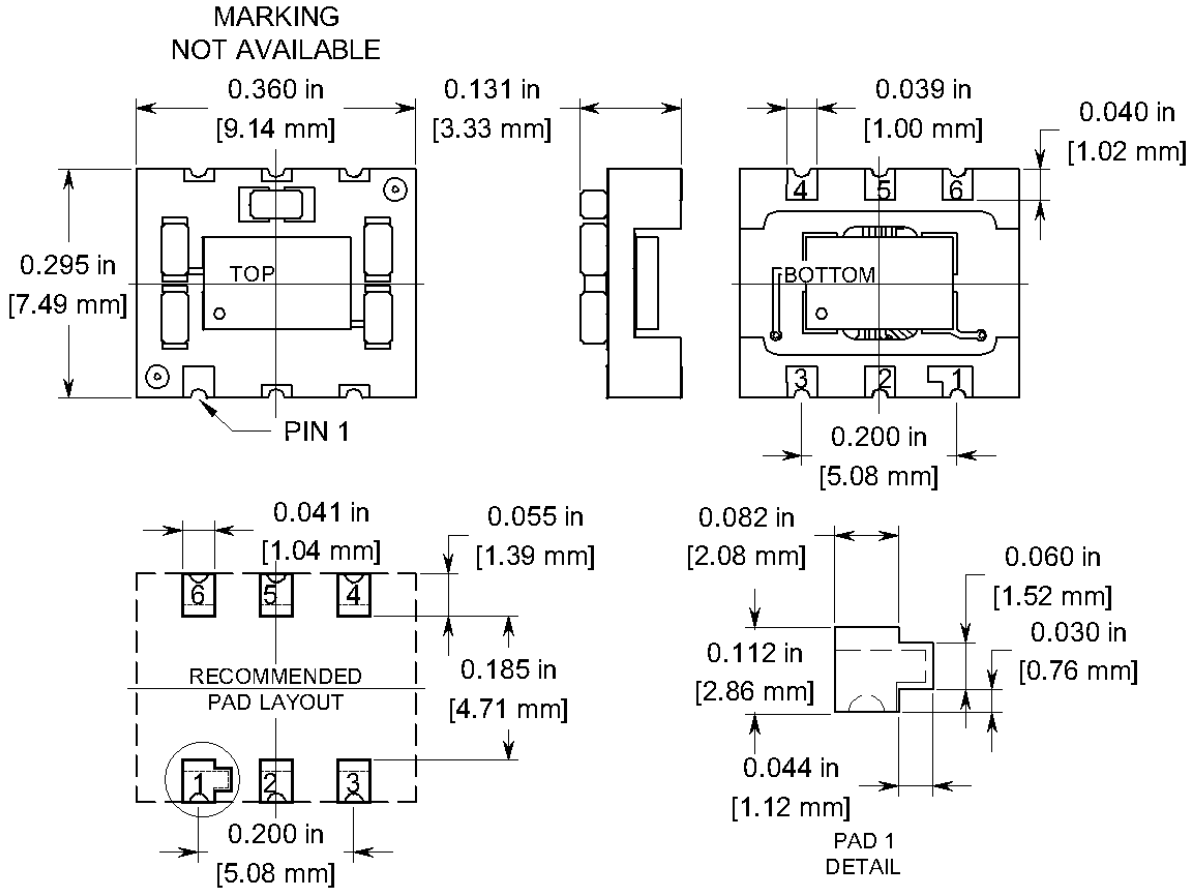
Package Information



PAD CONNECTIONS	
1	CONTROL VOLTAGE (EFC)
2	NO CONNECT (NC)
3	GND
4	OUTPUT
5	NO CONNECT (NC)
6	SUPPLY VOLTAGE (Vdd)

(NC Pads may have internal connections and should be isolated)

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