



frequency control solutions

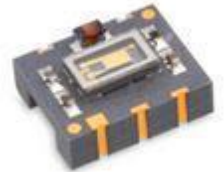
T1308

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 40dB compared to conventional XO's.



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



Greenray Industries, Inc., 840 West Church Road, Mechanicsburg, PA 17055
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T1308 SERIES
10 MHz to 52 MHz



Electrical Characteristics

Frequency Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	+25°C	10		52	MHz	
Frequency Stability (Other stabilities available)	-20°C to +70°C		± 0.3		ppm	N20
	-40°C to +85°C		± 0.5		ppm	T255
Electronic Freq. Control	EFC=0 to V _{dd} , Positive Slope		±8		ppm	
Aging	1 st year			<1	ppm	
	10 years		<3		ppm	
Acceleration Sensitivity	(Note 1)			7	ppb/g	SD
				1	ppb/g	LG
				7	ppb/g	ULG
Frequency vs Reflow	After 24hrs recovery			1	ppm	
Frequency vs Voltage	± 5%			0.2	ppm	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	
Phase Noise (static) +25°C	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 (V _{dd})	±5%	3.0	3.3	3.6	Vdc	
Input Current	CMOS			3	mA	
	Clipped Sinewave			6	mA	
RF Outputs available: CMOS and Clipped Sine						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS Output						C
Load			15		pF	
Level		V _{dd} =0.2V		0.2	V	
Symmetry		45	50	55	%	
Clipped Sine Output						S
Load			10 pF // 10k Ω			
Level		+0.8			V p-p	

(1) Acceleration Sensitivity is worst axis tested at 90 Hz, 10 g



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Environmental Screenings

Environmental			
Screening	Conditions	Method, Condition	Notes
Vibration	MIL-STD-202G	204, C	Cond I-F
Shock	MIL-STD-202G	213, I	Custom Requirement

Recommendation and General Information

Conditions	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +105°C
Terminal Finish	Gold (RoHS)
Package Weight	3 grams
Soldering Instruction	Reflow
Shipping	Type of package, Tray pack and Tape & Reel
Marking (on Packaging)	Greenray logo + Model Frequency Date Code (XXXX)

Ordering Example

T1308	-	T255	-	C	-	3.3	-	LG	-	20 MHz
Model		Stability		Output		Supply Voltage		G-Sensitivity		Frequency (MHz)
		Refer to Electrical Specs Table* T255 N20		C: CMOS S: Clipped Sinewave		3.3: 3.3V		SD: 7×10^{-10}/g LG: 1×10^{-10}/g ULG: 7×10^{-11}/g		From 10 to 52 MHz

*other frequency stabilities available, for further information please contact factory.



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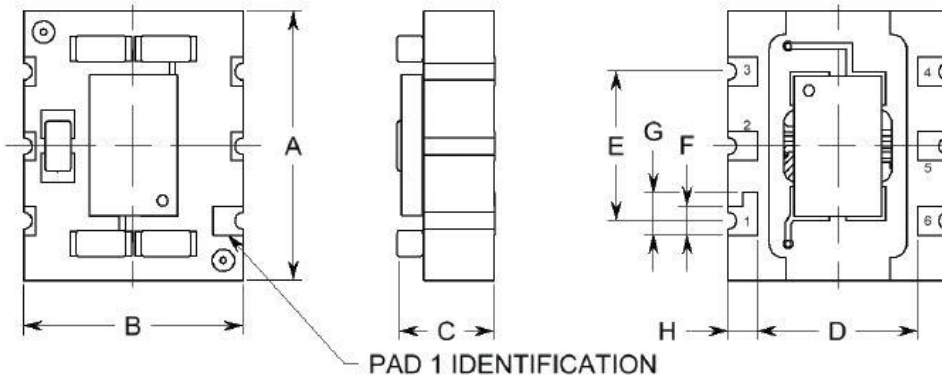


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Package Dimensions and Pad Connections

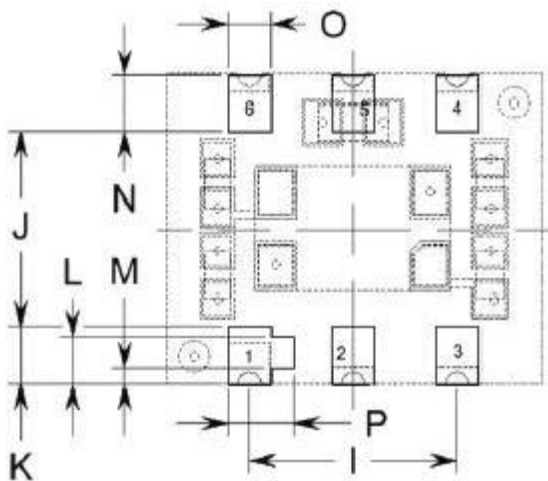


DIM	TYP		MAX	
	in.	mm	in.	mm
A	0.360	9.14	0.370	9.40
B	0.295	7.49	0.305	7.75
C	0.146	3.71	0.157	4.00
D	0.215	5.46	0.225	5.72
E	0.200	5.08	0.210	5.33
F	0.039	1.00	NA	NA
G	0.058	1.46	NA	NA
H	0.040	1.02	NA	NA

Pad Connections

- 1 – EFC
- 2 – NC
- 3 – GND
- 4 – Output A
- 5 – NC
- 6 – V_{dd}

Recommended Land Pattern



DIM	TYP		MAX	
	in.	mm	in.	mm
I	0.200	5.08	0.210	5.33
J	0.185	4.70	0.195	4.95
K	0.055	1.40	NA	NA
L	0.045	1.14	NA	NA
M	0.015	0.38	NA	NA
N	0.055	1.40	NA	NA
O	0.041	1.04	NA	NA
P	0.063	1.60	NA	NA



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