



frequency control solutions

texo

T1237

LOW PHASE NOISE
TIGHT STABILITY



Product Description

Greenray Industries' T1237 TCXO is a low phase noise super stable frequency reference for high shock and high vibration environments.

Features

- Available from 76.8 MHz to 120 MHz
- Rugged 17.3 mm sq. package
- +5 VDC Supply
- Dual output available: Sine and CMOS
- Temperature Stability to ± 0.5 ppm (-40 to +85°C)
- Low phase noise
- Low power consumption
- Vibration sensitivity of 0.7 ppb/g or better
- Ideal for Wireless and Mobile applications

Applications

- Telecommunications
- Mobile radio
- Mobile instrumentation
- Airborne communications
- Wireless communications
- Microwave receiver

Rev. A



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T1237 SERIES
75 MHz to 120 MHz



Electrical Characteristics

Frequency Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	Sinewave	76.8		120	MHz	
Frequency Stability (other stability available, please contact factory)	-40°C to +85°C		± 0.5		ppm	T57
	-40°C to +85°C		± 1		ppm	T16
	-55°C to +95°C		± 3		ppm	V36
Total Stability	From nominal over 10 years (including temp stability, load, aging, supply V)			± 5	ppm	
Aging	1 st year			± 1	ppm	
Acceleration Sensitivity	(note 1)			1.5	ppb/g	
Frequency vs Voltage	For a 5% change			± 0.3	ppm	
Frequency vs Load	For a 5% change			± 0.1	ppm	
Electronic Frequency Control	EFC = 0 to SUP. Positive slope,		± 5		ppm	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	Ordering Code
Static @ 100 MHz nominal Frequency	10		-70		dBc/Hz	
	100		-100		dBc/Hz	
	1k		-140		dBc/Hz	
	10 k		-155		dBc/Hz	
	100 k		-162		dBc/Hz	
	Floor		-165		dBc/Hz	
DC Supply						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Supply Voltage		4.75	5.0	5.25	VDC	
Supply Current				30	mA	
RF Output: Sinewave and CMOS						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Sinewave						
Harmonic & Subs				- 20	dBc	
Load			50		Ω	
Level	50 Ω load	+ 2	+ 5	+ 7	dBm	
CMOS						
Load			15		pF	
Level	SUP. = 3.3V	+2.8V "1" Level		+0.2 "0" Level		
Symmetry		40	50	60	%	

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



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Environmental and Mechanical Specifications

Screening	Standard	Screenings	
		Method, Condition	Description
Vibration	MIL-STD-202F	214, I.F	0.3 PSD, 20.71 g RMS, 3min/axis
Shock	MIL-STD-202F	213, F	1,500 g peak, half sine, 0.5 ms

Recommendation and General Information

Parameter	Notes	Conditions
Operating Temperature	-55°C to +95°C	
Storage Temperature	-55°C to +105°C	
Terminal Finish	Gold plated is standard. SnPb 63/37 (non-RoHS) and SnAg (RoHS) are available	
Package Weight	< 3 grams	
Soldering Instruction	Hand or reflow soldering	
Shipping	Tray pack	
Marking	Line 1: Greenray logo + Model Line 2: Frequency Line 3: Serial Number Line 4: Data Code (YYWW)	

Ordering Example

T1237	-	T16	-	100.0 MHz	-	E
Model		Stability		Frequency in MHz		Termination finish
		<u>Refer to Electrical Specs Table*</u> T57 (-40 to +85°C) T16 (-40 to +85°C) V36 (-55 to +95°C)		From 76.8 to 120 MHz		<u>Code: Pads finish</u> E: Gold plated (RoHS), standard PB: SnPb 63/37 (non-RoHS) LF: SnAg 96.5/3.5 (Lead-free)

*Other frequency stabilities available, please contact factory



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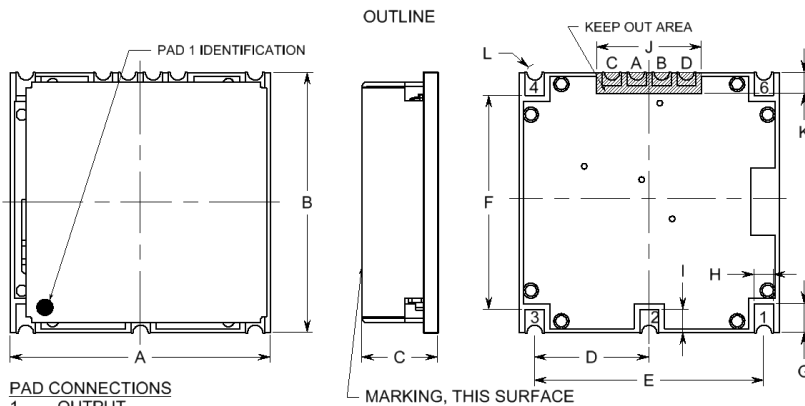


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Package dimensions and Pad Connections

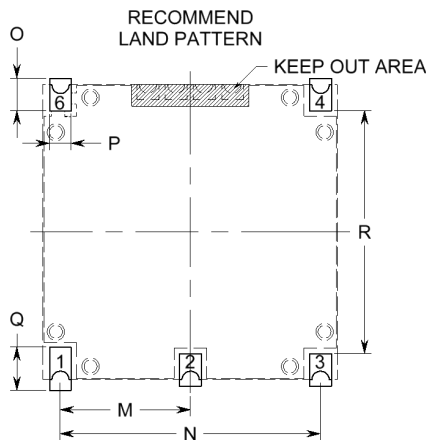


PAD CONNECTIONS

- 1. OUTPUT
- 2. NC
- 3. SUPPLY
- 4. NC
- 6. 0V & CASE GND
- A. DIO (INTERNAL USE ONLY)
- B. CS (INTERNAL USE ONLY)
- C. SCLK (INTERNAL USE ONLY)
- D. ENABLE (INTERNAL USE ONLY)

PART DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
A	0.680	17.27	0.690	17.53
B	0.680	17.27	0.690	17.53
C	0.200	5.08	0.210	5.33
D	0.300	7.62	0.310	7.87
E	0.600	15.24	0.610	15.49
F	0.560	14.22	0.570	14.48
G	0.075	1.91	0.085	2.16
H	0.050	1.27	0.060	1.52
I	0.060	1.52	0.070	1.78
J	0.275	6.99	0.285	7.24
K	0.060	1.52	0.070	1.78
L	R0.020	R0.51	NA	NA



LAND PATTERN DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
M	0.300	7.62	NA	NA
N	0.600	15.24	NA	NA
O	0.075	1.91	NA	NA
P	0.050	1.27	NA	NA
Q	0.100	2.54	NA	NA
R	0.560	14.22	NA	NA



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