



frequency control solutions

tcxo

## T1282

RADIATION TOLERANT  
LOW PHASE NOISE  
VIBRATION COMPENSATED

### Product Description

Greenray Industries' T1282 TCXO offers ultra low acceleration sensitivity for reliable phase noise performance in high vibration and shock sensitive applications. Precision analog temperature compensation provides a tight stability insensitive to radiation. Under high shock and vibration conditions the T1282 offers superior phase noise performance and features a rugged, go-anywhere package.



### Features

- 50 krad (Si) total ionizing dose
- Excellent phase noise performance under high shock/high vibration conditions
- Rugged package for high reliability; ideally suited for mobile applications
- g-Sensitivity down to a typical 0.07 pp/g
- Frequency: 20 – 100 MHz
- Voltage Control for precise tuning or phase locking apps
- 17.3 mm sq. package
- +3.3 or +5 Vdc Supply
- CMOS output

### Applications

- High orbit transponders
- Low orbit satellites (nano/micro satellites)
- RF telemetry systems
- Multiband terminal
- Upconverter

REV: E



Greenray Industries, Inc., 840 West Church Road, Mechanicsburg, PA 17055  
TEL: 717-766-0223 FAX: 717-790-9509 e-mail: sales@greenrayindustries.com  
www.greenrayindustries.com

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**T1282 SERIES**  
20 MHz to 100 MHz



Electrical Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	@ +25°C	20		100	MHz	(FREQ.)
Frequency Stability	-20°C to +70°C		± 3.0		ppm	N36
	-40°C to +85°C		± 5.0		ppm	T56
Aging	1 <sup>st</sup> year			± 1.0	ppm	
Acceleration Sensitivity	Worst axis tested @ 90 Hz, 10 g			0.8	ppb/g	SG
				0.3	ppb/g	LG
			0.07	0.08	ppb/g	ULG (1)
Frequency vs Voltage	For a 5% Change			± 0.3	ppm	
Frequency vs Load	For a 5% Change			± 0.1	ppm	
Voltage Control (EFC)	0 to Supply, Positive Slope		± 5.0		ppm	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	Ordering Code
Static @ 10 MHz Nom. Freq.	10		-80		dBc/Hz	
	100		-110		dBc/Hz	
	1 k		-135		dBc/Hz	
	10 k		-150		dBc/Hz	
	100 k		-160		dBc/Hz	
DC Supply						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Supply Voltage		3.0	3.3	3.6	Vdc	B
		4.75	5.0	5.25	Vdc	E
Supply Current				30	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	%	
Rise / Fall Time				10	nSec	

(1) < 65 MHz ONLY



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Environmental and Mechanical Specifications				
Test	Standard	Method	Condition	Description
Vibration	MIL-STD-202F	214	I.F	0.3 PSD, 20.71 g RMS, 3min/axis
Shock	MIL-STD-202F	213	K	30 g peak, sawtooth, 11 ms

Recommendations and General Information	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +105°C
Terminal Finish	ENIG (RoHS) (SnPb 63/37 (non-RoHS) Available upon request)
Package Weight	3 grams
Soldering Instruction	Reflow
Shipping	Tray Pack, Tape & Reel
Marking	GRI Logo, Model #, Frequency, Serial #, Date Code Addition marking upon request if space is available

Ordering Example					
T1282 - T 56 - B - SG - 40.0 MHz					
Model	Temp. Range	Stability	Supply Voltage	G-Sensitivity	Freq. (MHz)
	N: -20 to +70°C T: -40 to +85°C	36: ±3ppm 56: ±5ppm	B: 3.3V E: 5V	SG: ≤ 0.8 ppb/g LG: ≤ 0.3 ppb/g ULG: ≤ 0.07 ppb/g (<65 MHz only) HG: Customer-specific	20 to 100

The Order ID (T1282-T56-B-SG-40.0MHz) is only used to issue the preliminary quote. The Part Number (T1282-1) 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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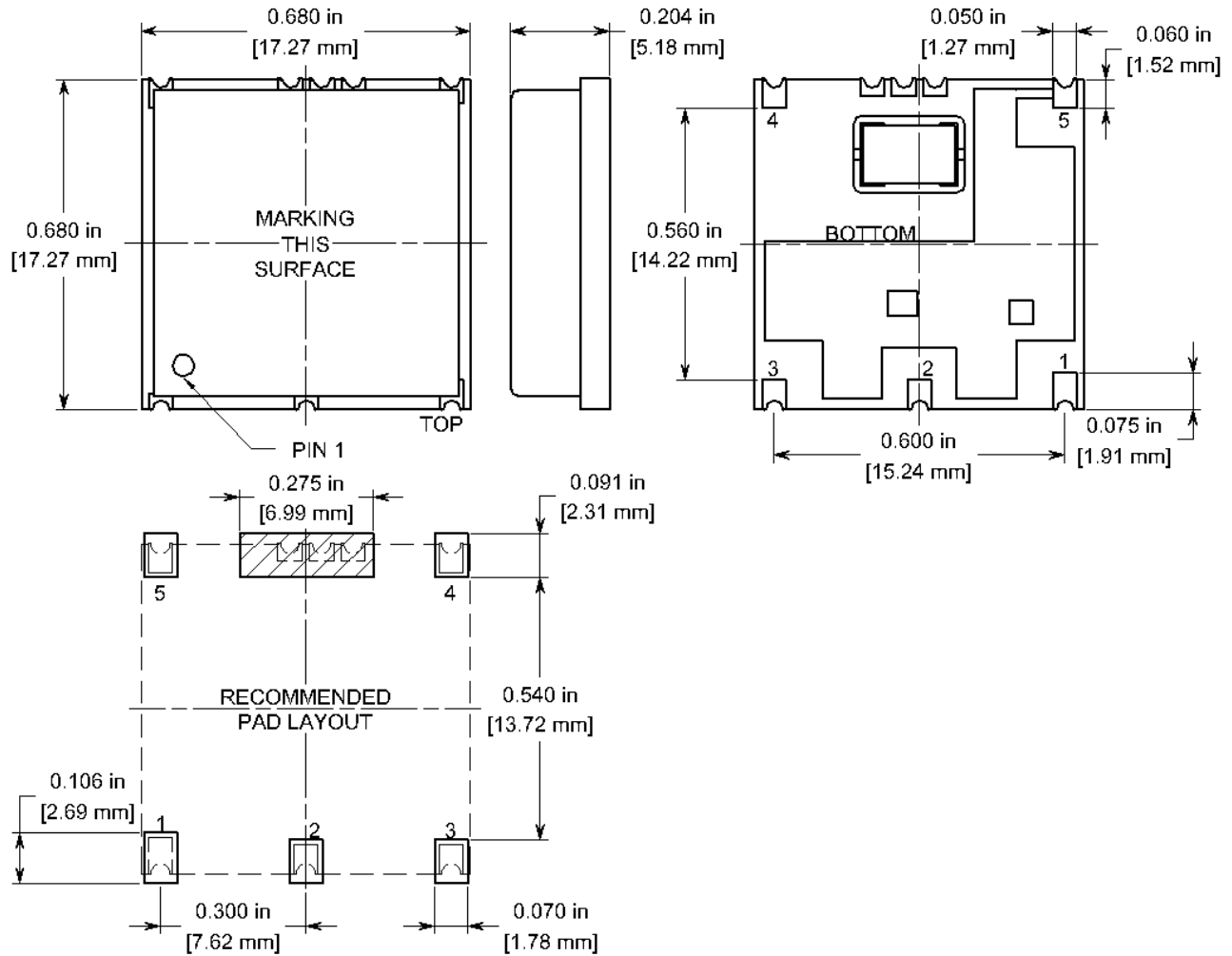


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**Package Information**



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

NC Pads/Pins may have internal connections and should be isolated  
 Hatched areas are keep out zones and should be isolated



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