



frequency control solutions

T124

LOW FREQUENCY TCXO
TIGHT TEMPERATURE STABILITY

texo

Product Description

Greenray Industries' T124 TCXO features Ultra-low frequency & rugged SMT package.

Features

- Available from 650 Hz to 5 MHz
- 17.3 mm sq. package
- 3.3 VDC Supply
- CMOS output
- Temperature Stability to ± 0.5 ppm over -40 to +85°C
- Low Power consumption
- Extended, long-term stability performance
- Ideal for mobile, RF applications



Applications

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

Rev. F



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Electrical Characteristics

Frequency Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency		650		5.0 M	Hz	
	-20°C to +70°C		± 0.3		ppm	N37
	-40°C to +85°C		± 0.5		ppm	T57
	-40°C to +85°C		± 1		ppm	T16
Total Stability	From nominal over 10 years (including temp stability, load, aging, supply V)			± 5	ppm	
Aging	1 st year			± 0.5	ppm	
Acceleration Sensitivity	(note 1)			2.5	ppb/g	
Frequency vs Voltage	For a 5% change			± 0.3	ppm	
Frequency vs Load	For a 5% change			± 0.3	ppm	
Electronic Frequency Control	EFC = 0 to SUP. Positive slope		± 7		ppm	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	Ordering Code
Static @ 1 MHz nominal Frequency	10		-75		dBc/Hz	
	100		-102		dBc/Hz	
	1k		-125		dBc/Hz	
	10 k		-140		dBc/Hz	
	100 k		-145		dBc/Hz	
DC Supply						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Supply Voltage		4.75	5.0	5.25	VDC	5.0
		3.0	3.3	3.6	VDC	3.3
Supply Current				20	mA	
RF Output						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS						
Symmetry		45	50	55	%	
Load			15		pF	
Level	15 pF	SUP.-0.2 "1" level		+0.2 "0" level	V	

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



Environmental and Mechanical Specifications

Screenings			
Screening	Standard	Method, Condition	Description
Vibration	MIL-STD-202G	214, II. F	0.3 PSD, 24.06 g RMS, 3min/axis
Shock	MIL-STD-202G	213	90 g peak, half sine, 5 ms

Recommendation and General Information

Conditions	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-54°C to +105°C
Terminal Finish	Gold plating is the standard. SnPb 63/37 (non-RoHS) and SnAg (RoHS) are available
Package Weight	3 grams
Soldering Instruction	Hand and solder reflow
Shipping	Type of package (tray pack)
Marking	Line 1: Greenray logo Line 2: Model Line 3: Frequency Line 4: Serial Number Line 5: Data code (YYWW)

Ordering (Example)

T124	-	T16	-	3.3	-	32.768 kHz	-	E
Model		Stability		Supply Voltage		Frequency in Hz, kHz, or MHz		Termination finish
		Refer to Electrical Specs Table*		3.3: 3.3 VDC 5.0: 5.0 VDC		From 650 Hz to 5 MHz		Code: Pads finish E: Gold plated (RoHS), standard PB: SnPb 63/37 (non-RoHS) LF: SnAg 96.5/3.5 (RoHS)
		N37 (-20 to +70°C) T57 (-40 to +85°C) T16 (-40 to +85°C)						

*Other frequency stabilities available, please contact factory



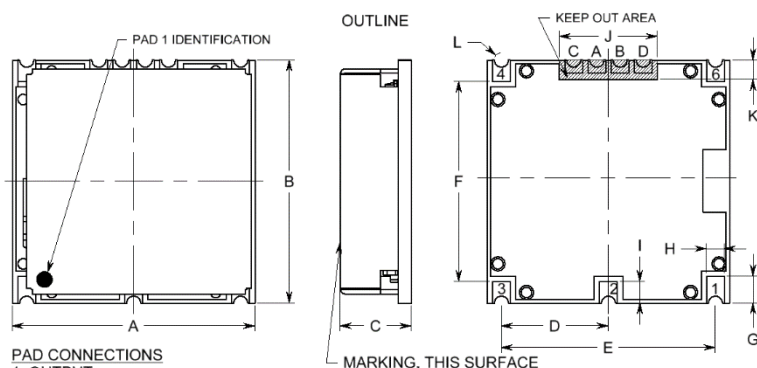
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T124 SERIES

650 Hz to 5.0 MHz



Package dimensions and Pad Connections

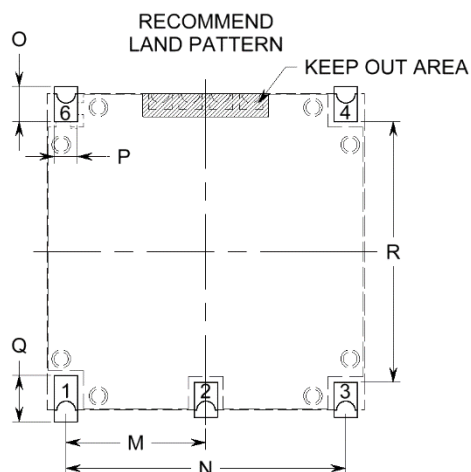


PAD CONNECTIONS

1. OUTPUT
2. NC
3. SUPPLY
4. EFC
6. 0V & CASE GND
- A. DIO (INTERNAL USE ONLY)
- B. CS (INTERNAL USE ONLY)
- C. SCLK (INTERNAL USE ONLY)
- D. NC (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	NA	NA	0.200	5.08
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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