



frequency control solutions

tcxo

T1247

DUAL COMPENSATION
TIGHT STABILITY

Product Description

Greenray Industries' T1247 TCXO offers OCXO-like frequency vs. temperature stability performance in a compact, rugged package. In addition, the T1247 performs over a wide temperature range with low power consumption.



Features

- 36.1 x 26.9 mm Euro Package, 6-pin
- 3.3 or 5 VDC supply
- CMOS output
- Temperature Stability to ± 0.03 ppm
- Extended, long-term stability performance

Applications

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

Rev. C



ISO 9001
Quality

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AS9100
Aerospace



frequency control solutions

T1247 SERIES
10 MHz to 50 MHz



Electrical Characteristics

Frequency Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	CMOS Squarewave	10		50	MHz	
Frequency Stability (other stability available)	-20°C to +70°C		± 30		ppb	N38
	-40°C to +85°C		± 50		ppb	T58
Aging	1 st year, after 14 days of operation			± 1	ppm	
Acceleration Sensitivity (note 1)				2.5	ppb/g	SD
				0.7	ppb/g	LG
Frequency vs Voltage	For a 5% change			± 0.3	ppm	
Electronic Frequency Control	EFC = 0 to V _{DD} Positive slope		± 7		ppm	
Warm-up time	Within ± 1 ppm			10	msec	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	Ordering Code
Phase Noise (static) @ 10 MHz nominal Frequency	10		-90		dBc/Hz	
	100		-120		dBc/Hz	
	1k		-140		dBc/Hz	
	10 k		-150		dBc/Hz	
	100 k		-155		dBc/Hz	
DC Supply						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Supply Voltage (V _{DD})		3.0	3.3	3.6	VDC	3.3
		4.75	5.0	5.25	VDC	5.0
Supply Current				35	mA	
RF Outputs CMOS						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS Output						
Load	CMOS		15		pF	
Level	15 pF load, 3.3V	+2.8		+0.2	V	
		"1" level		"0" level		
Level	15 pF load, 5.0V	+4.5		+0.2	V	
		"1" level		"0" level		
Symmetry	CMOS	40	50	60	%	

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



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Environmental and Mechanical Specifications

Screenings			
Screening	Standard	Method, Condition	Description
Random Vibration	MIL-STD-202	214, Cond I-J	1 PSD, 37.80 rms G
Sine Vibration	MIL-STD-202	204, Cond D	20 g, 20 to 2,000 Hz,
Shock	MIL-STD-202	213, Cond F	1,500 g, 0.5 ms half-sine

Recommendation and General Information

Conditions	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +95°C
Terminal Finish	Gold is standard. SnPb (non-RoHS) and AgCu (RoHS) are available
Package Weight	3 grams
Soldering Instruction	Solder by hand
Shipping	Tray package
Marking	Line 1: Greenray logo + Model Line 2: Frequency Line 3: Serial number + Data code (YYWW)

Ordering Example

T1247	-	T58	-	3.3	-	LG	-	10.0MHz	-	E
Model		Stability Code		Supply Voltage		G-Sensitivity Code		Frequency in MHz		Termination finish
		Refer to Electrical Specs Table* N38 (-20 to +70°C) T58 (-40 to +85°C)		3.3: 3.3V 5.0: 5.0V		SD: < 2.5 ppb/g LG: < 0.7 ppb/g HG: Customer-specific		From 10 to 50 MHz		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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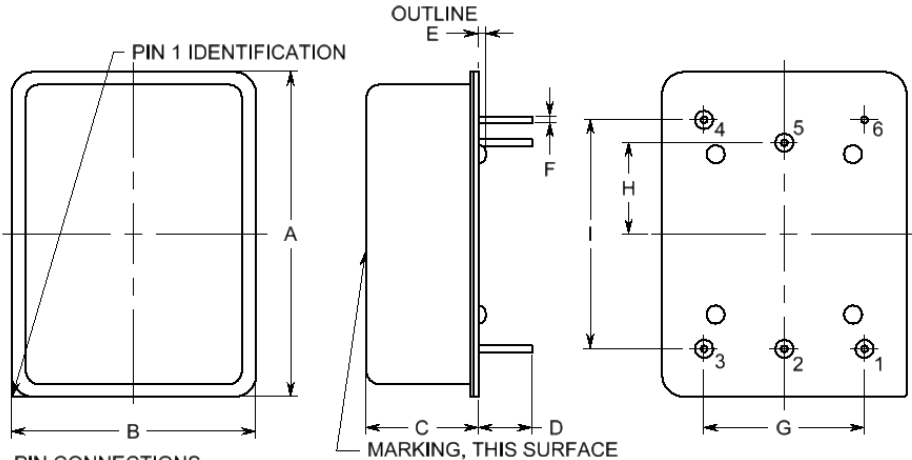


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Package dimensions and Pad Connections



PIN CONNECTIONS

1. EFC (GND THRU 10 kΩ resistor when EFC is disabled)
2. EFC ENABLED (SEE BELOW)*
3. SUPPLY
4. OUTPUT
5. NC/0V (INTERNAL USE ONLY)
6. 0V & CASE GND

*PIN 2 FUNCTION

3 to 4.5V INPUT:-EXTERNAL EFC IS ENABLED;
(STABILITY WILL DEPEND ON EXTERNAL REF. OR VOLTAGE)

0V/GND INPUT:-COMPENSATED/FREE RUN MODE,
NOTE: INTERNAL PULL DOWN

PART DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
A	1.420	36.10	1.430	36.32
B	1.060	26.92	1.070	27.18
C	0.490	12.45	0.500	12.70
D	0.230	5.84	0.240	6.10
E	0.026	0.66	0.032	0.81
F	Ø0.032	Ø0.081	Ø0.034	Ø0.86
G	0.700	17.78	0.710	18.03
H	0.400	10.16	0.410	10.41
I	1.000	25.40	1.010	25.65



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