



frequency control solutions

texo

T56

**WIDE TEMPERATURE RANGE
LOW ACCELERATION SENSITIVITY**



Product Description

Greenray Industries' T56 Series TCXO has been developed as a reference oscillator for timing applications requiring low power draw, tight stability over military temperature range, and a compact footprint.

Features

- **Wide temperature range –55 °C to +125 °C**
- Small and rugged 5.0 x 3.2 mm package
- Tight temperature stability as low as ± 1 ppm over –55 °C to +125°C
- Excellent long-term aging < 4 ppm over 10 years
- Acceleration sensitivity as low as 0.5 ppb/g
- Low power consumption

Applications

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

Other specification options are available, please use the contact the factory for more information regarding your specific requirements.

REV: E



intertek

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T56 SERIES
10 MHz to 52 MHz



Electrical Characteristics

Electrical Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	+25°C	10		52	MHz	
Frequency Stability	-45°C to +105°C		± 0.5	± 2.0	ppm	J26
	-55°C to +125°C		± 1.0	± 5.0	ppm	X56
Aging	1 st year			± 1.0	ppm	
	10 years			± 4.0	ppm	
Acceleration Sensitivity	Worst axis tested @ 90 Hz, 10 g			2	ppb/g	SG
				0.7	ppb/g	LG
Frequency vs Reflow	After 24 hrs recovery			1.0	ppm	
Frequency vs Voltage	± 5%			0.2	ppm	
Frequency vs Load	± 10%			0.1	ppm	
Voltage Control	VC=0 to Supply, Positive Slope		± 8.0		ppm	
Start-up Time			10	16	ms	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	
Static @ 20 MHz Nom. Freq.	10		-80		dBc/Hz	
	100		-112		dBc/Hz	
	1 k		-133		dBc/Hz	
	10 k		-145		dBc/Hz	
	100 k		-149		dBc/Hz	
	Floor		-150		dBc/Hz	
DC Supply						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Supply Voltage		3.0	3.3	3.6	Vdc	3.3
Supply Current	CMOS			6	mA	
	Clipped Sine			3	mA	
RF Output						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS						C
Load			15		pF	
Level	Supply Voltage=3.3 V	80% "1" Level		20% "0" Level		
Symmetry		40	50	60	%	
Clipped Sine						CS
Load			10 pF// 10 kΩ			
Output Voltage		+ 0.8	+ 1.9	+ 3.0	V p-p	



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Environmental and Mechanical Specifications

Screenings			
Screening	Standard	Method, Condition	Description
Vibration	MIL-STD-202G	204, D	20 g, 20 Hz to 2000 Hz, swept sine
Shock	MIL-STD-202G	213, I	100 g, 11 ms, half-sine

Recommendations and General Information

Information	
Parameter	Notes
Operating Temperature	-55°C to +125°C
Storage Temperature	-60°C to +125°C
Terminal Finish	ENIG STD., SnPb 63/37 (non-RoHS) available
Package Weight	<0.1 gram
Soldering Instruction	Reflow
Shipping	Tray Pack, Tape & Reel
Marking	None

Ordering Example

T56	-	X	-	56	-	CS	-	3.3	-	SG	-	10 MHz	-	E
Model		Temperature Range		Stability		Output		Supply Voltage		G-Sensitivity		Freq. (MHz)		Term. Finish
		J: -45°C to +105°C X: -55°C to +125°C		16: ±1ppm 26: ±2ppm 56: ±5.0ppm		CS: Clipped Sine C: CMOS		3.3: 3.3V		SG: < 2 ppb/g LG: < 0.7 ppb/g		10 MHz to 52 MHz		E: Au PB: SnPb, <97% Sn

The Order ID (T56-X56-CS-3.3-SG-10MHz-E) is only used to issue the preliminary quote. The Part Number (T56-X) for the quoted Electrical Characteristics, Screenings, and other options, will be provided with the Greenray Sales Order.



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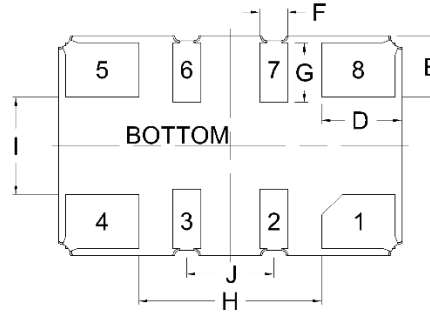
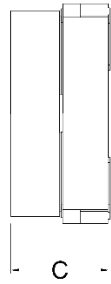
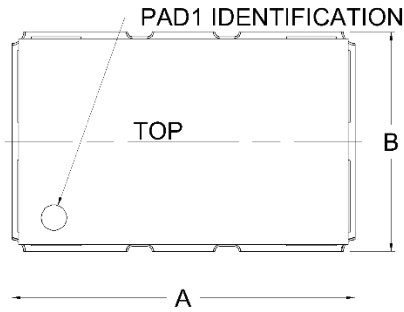


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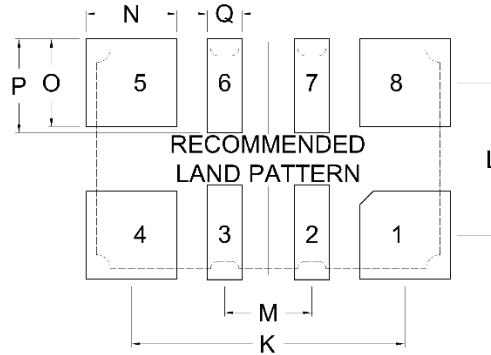
Package Information



Part Dimensions				
DIM	Typical		MAX	
	Inches	MM	Inches	MM
A	0.197	5.00	0.207	5.25
B	0.126	3.20	0.136	3.45
C	NA	NA	0.079	2.00
D	0.046	1.17	NA	NA
E	0.035	0.89	NA	NA
F	0.016	0.41	NA	NA
G	0.038	0.97	NA	NA
H	0.105	2.67	0.115	2.92
I	0.056	1.42	0.066	1.68
J	0.050	1.27	0.060	1.52

PAD CONNECTIONS	
1	CONTROL VOLTAGE
2	NO CONNECT
3	NO CONNECT
4	GND
5	OUTPUT
6	NO CONNECT
7	NO CONNECT
8	SUPPLY VOLTAGE

(NC Pads may have internal connections and should be isolated)



Land Pattern Dimensions				
DIM	Typical		MAX	
	Inches	MM	Inches	MM
K	0.147	3.73	0.157	3.99
L	0.126	3.20	0.136	3.45
M	0.047	1.19	NA	NA
N	0.049	1.25	NA	NA
O	0.47	1.19	NA	NA
P	0.051	1.30	NA	NA
Q	0.019	0.48	NA	NA



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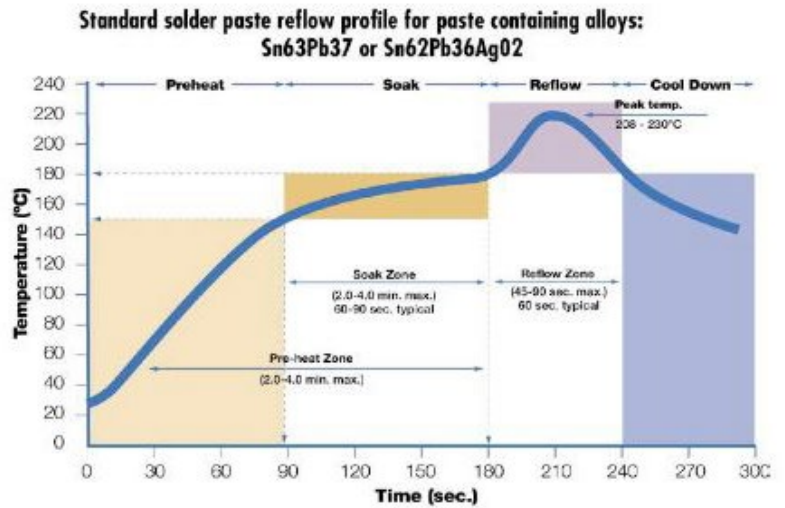
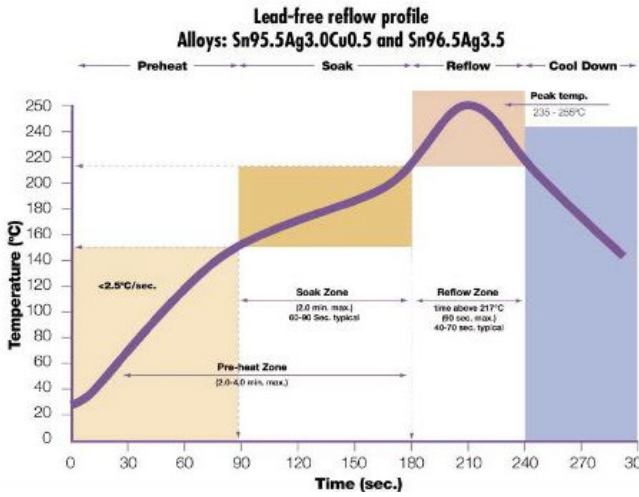


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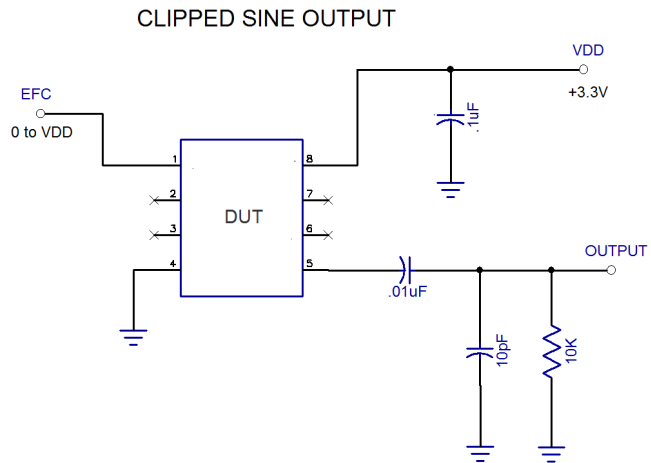
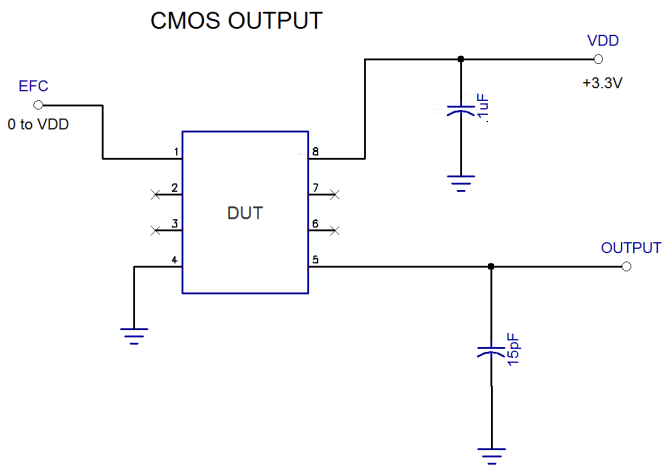
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Recommended Solder Reflow Profiles



Recommended Configuration



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