



frequency control solutions

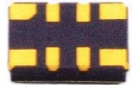
texo

## T58

TIGHT STABILITY

### Product Description

Greenray Industries' T58 Series TCXO has been developed as a reference oscillator for timing applications requiring very low g-Sensitivity performance and tight temperature stability.



### Features

- Frequency Range: 10 to 52MHz
- g-Sensitivity to  $<3 \times 10^{-10}/g$
- Shock to 30,000g
- Temperature Stability to  $\pm 50$  ppb ( $-40$  to  $+85^{\circ}\text{C}$ )
- Rugged 5.0 x 3.2mm package
- Low g-Sensitivity and Tight Stability in a compact, SMT package

### Applications

- Telecommunications
- High-shock electronics
- Mobile radio
- Mobile instrumentation
- Airborne communications
- Wireless communications
- Microwave receivers
- Telecom Stratum 3
- Smart munitions

Rev. D



intertek

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**T58 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 (other stability available, please contact factory)	-40°C to +85°C		± 0.05		ppm	T58
	-40°C to +105°C		± 0.1		ppm	J17
Aging	1 <sup>ST</sup> years			± 1.0	ppm	
	10 years			± 4.0	ppm	
Acceleration Sensitivity	Worst axis tested @ 90 Hz, 10 g			NA	x10 <sup>-10</sup> /g	SD
				5.0	x10 <sup>-10</sup> /g	LG
				3.0	x10 <sup>-10</sup> /g	ULG
Freq. vs Reflow	After 24 hrs recovery			1.0	ppm	
Voltage Control	VC=0 to Supply, Positive Slope		± 8.0		ppm	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	Ordering Code
Static @ 20 MHz Nom. Freq.	10		-100		dBc/Hz	
	100		-124		dBc/Hz	
	1 k		-144		dBc/Hz	
	10 k		-155		dBc/Hz	
	100 k		-159		dBc/Hz	
	Floor		-160		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 Sinewave			3	mA	
RF Output						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS						C
Load			15		pF	
Levels	Supply Voltage=3.3V	+ 2.8 "1" Level		+ 0.2 "0" Level	V	
Symmetry		40	50	60	%	
Clipped Sine						CS
Load			10 pF// 10 kΩ			
Level		+ 0.8			V p-p	



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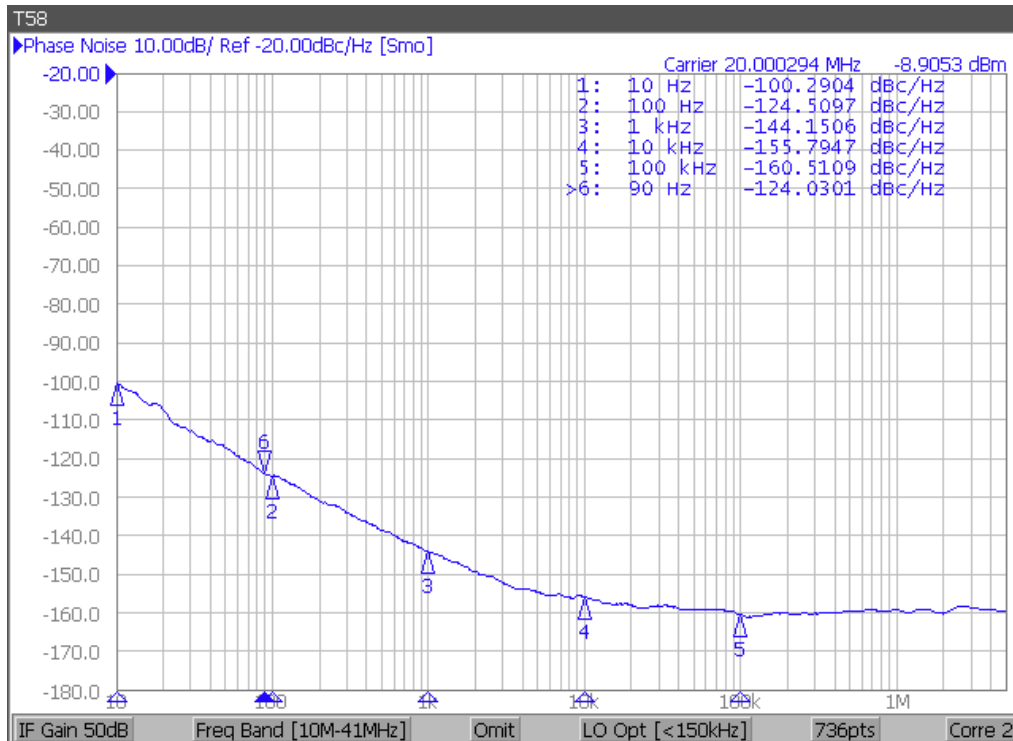
## Environmental and Mechanical Specifications

Screenings				
Screening	Standard	Method, Condition	Description	Ordering Code
Vibration	MIL-STD-202G	214, I-F	20 g, 20 Hz to 2000 Hz, swept sine	
Shock	MIL-STD-202G	213	Customer Requirements	HG

## Ordering Example

T58	T58	CS	LG	10 MHz	HG	E
-Model	Stability	Output	G-Sensitivity	Frequency in MHz	Shock	Termination Finish
	T58: -40°C to +85°C J17: -40°C to +105°C	CS: Clipped Sine C: CMOS	SD: STD LG: Low G UL: Ultra-Low G HG: Customer Specific	10 MHz to 52 MHz	Blank: STD HG: Customer Req.	E: Au Plated (ROHS) STD PB: 63Sn37Pb (non-ROHS) LF: 96.5Sn3.5Ag

## Typical Phase Noise



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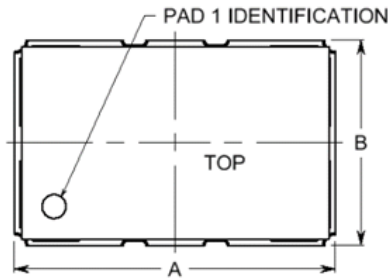


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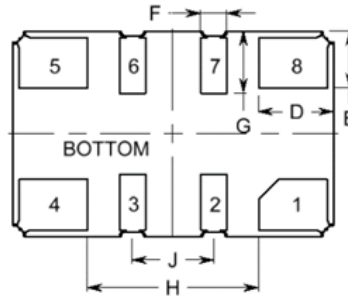
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10 MHz to 52 MHz



## Package Information



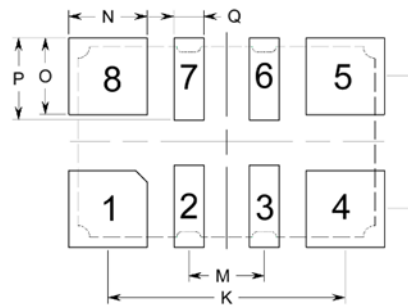
OUTLINE



PART DIMENSIONS

DIM	TYP.		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

RECOMMENDED  
LAND PATTERN



LAND PATTERN DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
K	0.147	3.73	0.157	3.99
L	0.088	2.24	0.098	2.49
M	0.047	1.19	NA	NA
N	0.049	1.25	NA	NA
O	0.047	1.19	NA	NA
P	0.051	1.30	NA	NA
Q	0.019	0.48	NA	NA

### Pad Connections

1. CONTROL VOLTAGE
  2. NC
  3. NC
  4. GROUND
  5. OUTPUT
  6. TRISTATE OR NC, SEE TABLE 1
  7. NC
  8. SUPPLY VOLTAGE
- (NC Pads may have internal Connections and should be Isolated)

### TRISTATE FUNCTION

PAD 6	ENABLE/DISABLE FUNCTION
HIGH (SUPPLY)	OUTPUT ENABLED
OPEN (NC)	OUTPUT ENABLED
LOW (GND)	HIGH IMPEDANCE DISABLED

### Preliminary Specification

The specifications on this datasheet pertain to a product which is under engineering development. Contact the factory to determine the current availability.



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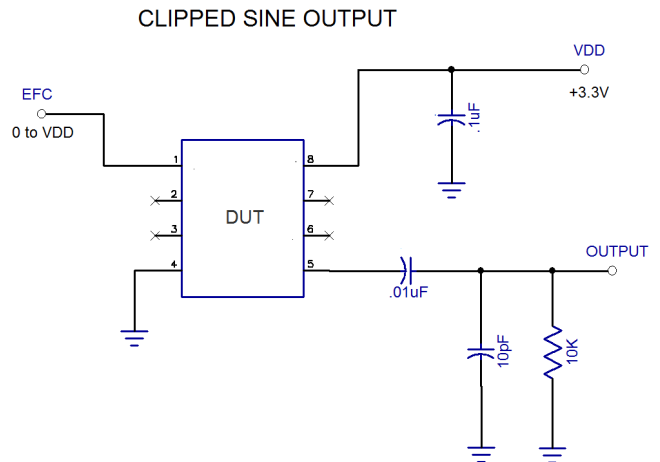
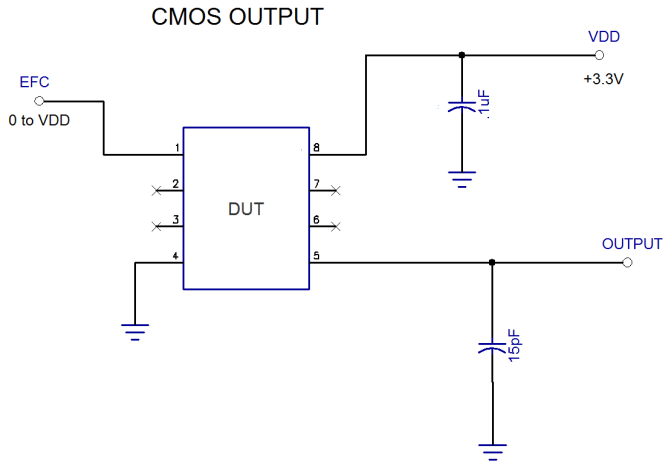


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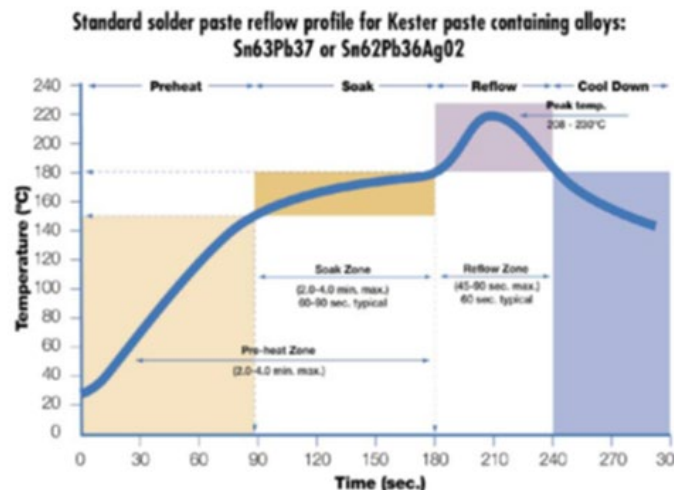
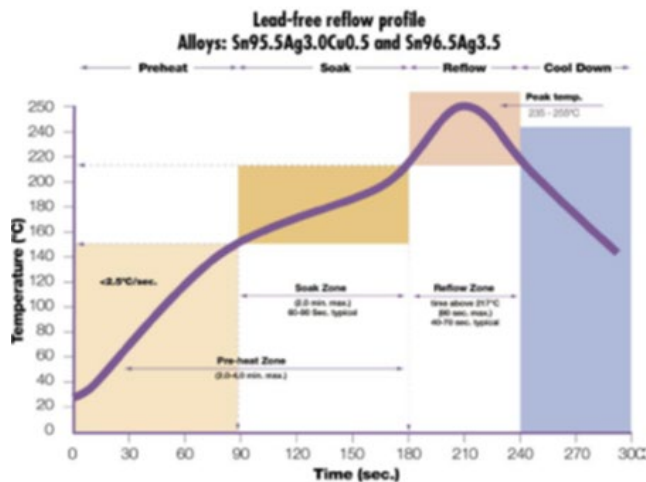
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## Recommended Configuration



## Recommended Solder Reflow Profile



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