GREENRAY
frequency control solutions

T58

TIGHT TEMPERATURE STABILITY

tcxo

Product Description

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

Features

- Temperature Stability down to ±100 ppb
- Frequency Range: 10 to 52MHz
- Low acceleration sensitivity as low as 0.5 ppb/g
- Excellent long-term aging < 4 ppm over 10 years
- 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
- Smart munitions

REV: E

Greenray Industries, Inc., 840 West Church Road, Mechanicsburg, PA 17055
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T58 SERIES
10 MHz to 52 MHz

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Electrical Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	@ +25°C	10		52	MHz	(FREQ.)
Frequency Stability	-40°C to +85°C		± 0.1	± 0.2	ppm	T27
	-20°C to +70°C		± 0.05	± 0.1	ppm	N17
Aging	1st year			± 1.0	ppm	
	10 years			± 4.0	ppm	
Acceleration Sensitivity	Worst axis tested @ 90 Hz, 10 g			2.5	ppb/g	SG
				1.0	ppb/g	LG
			0.5	0.7	ppb/g	ULG
Frequency vs Reflow	After 24 hrs recovery			1.0	ppm	
Voltage Control (EFC)	0 to Supply, Positive Slope		± 8.0		ppm	

Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	
Static @ 20 MHz Nom. Freq.	10		-95		dBc/Hz	
	100		-118		dBc/Hz	
	1 k		-142		dBc/Hz	
	10 k		-156		dBc/Hz	
	100 k		-157		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	B
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		0.8 Vdd "1" Level		0.2 Vdd "0" Level	V	
Symmetry		40	50	60	%	
Clipped Sine						CS
Load			10 pF// 10 kΩ			
Output Voltage		+ 0.8			V p-p	

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Environmental and Mechanical Specifications				
Test	Standard	Method	Condition	Description
Vibration	MIL-STD-202G	204	D	20 g, 20 to 2,000 Hz, swept sine
Shock	MIL-STD-202G	213	I	Or Customer Request

Recommendations and General Information	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-60°C to +105°C
Terminal Finish	Au (RoHS) (SnPb 63/37 (non-RoHS) Available upon request)
Package Weight	< 0.1 gram
Soldering Instruction	Reflow
Shipping	Tray Pack, Tape & Reel
Marking	NONE

Ordering Example

T58 - N 16 - CS - SG - 10.0 MHz

Model	Temp. Range	Stability	Output	G-Sensitivity	Freq. (MHz)
	N: -20 to +70°C T: -40 to +85°C	17: ±0.1ppm 27: ±0.2ppm 57: ±0.5ppm 16: ±1ppm	C: CMOS CS: Clipped Sine	SG: < 2.5 ppb/g LG: < 2.0 ppb/g ULG: < 0.7 ppb/g HG: Customer-specific	10 to 52

The Order ID (T58-N16-CS-SG-10.0MHz) is only used to issue the preliminary quote. The Part Number (T58-1) 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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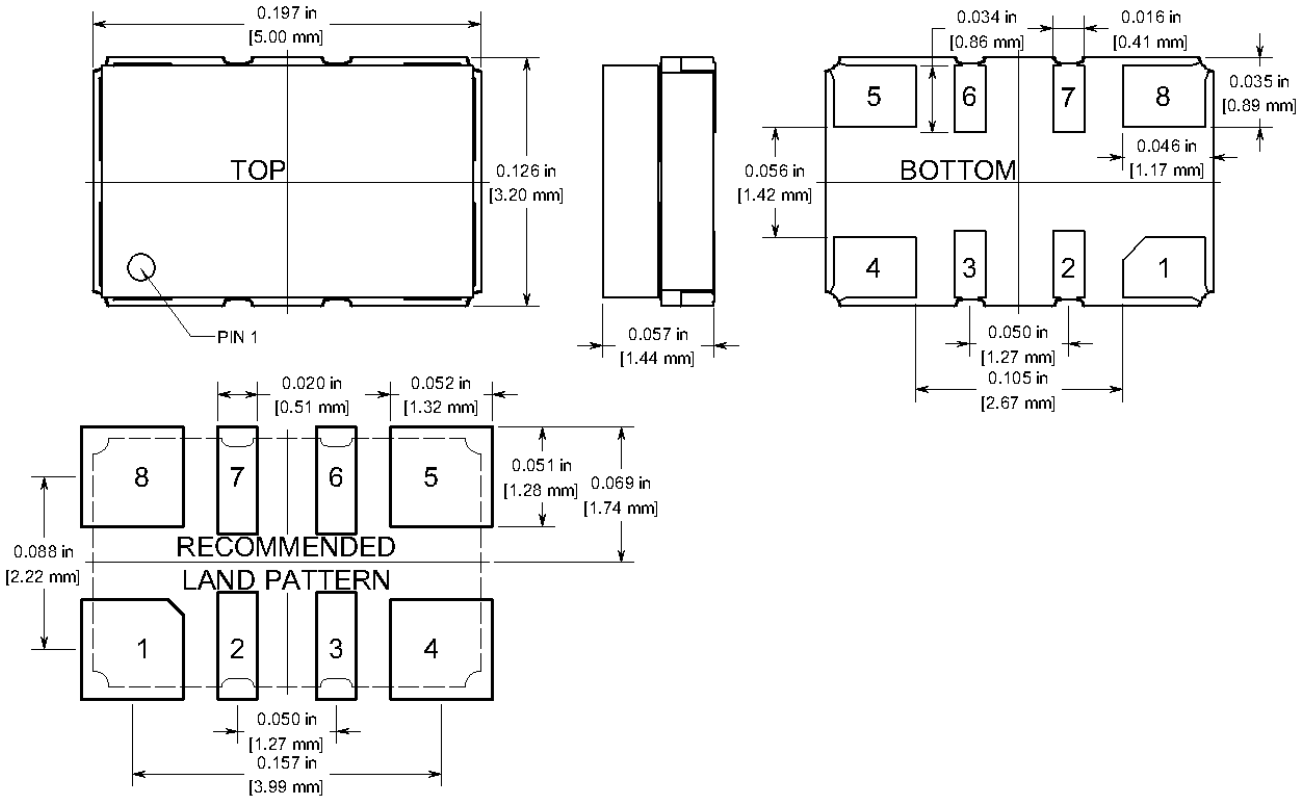
Package Information



PAD CONNECTIONS	
1	CONTROL VOLTAGE
2	NO CONNECT (NC)
3	NO CONNECT (NC)
4	GND
5	OUTPUT
6	TRISTATE OR NC (SEE TABLE 1)
7	NO CONNECT (NC)
8	SUPPLY VOLTAGE

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

TABLE 1: TRI-STATE FUNCTION	
PAD 6	ENABLE/DISABLE FUNCTION
HIGH (SUPPLY)	OUTPUT ENABLED
OPEN (NC)	OUTPUT ENABLED
LOW (GND)	HIGH IMPEDANCE DISABLED

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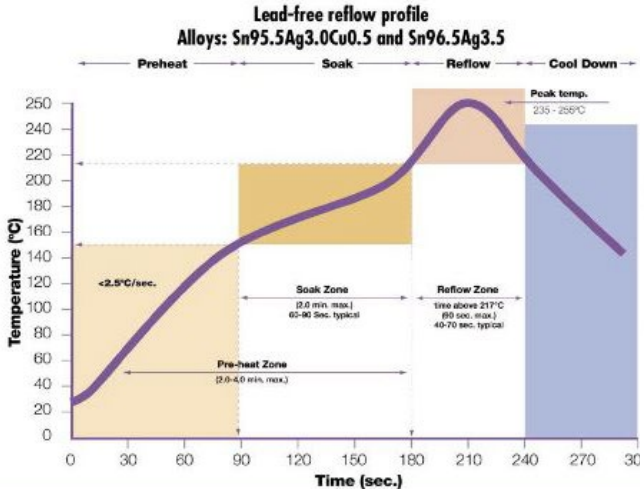
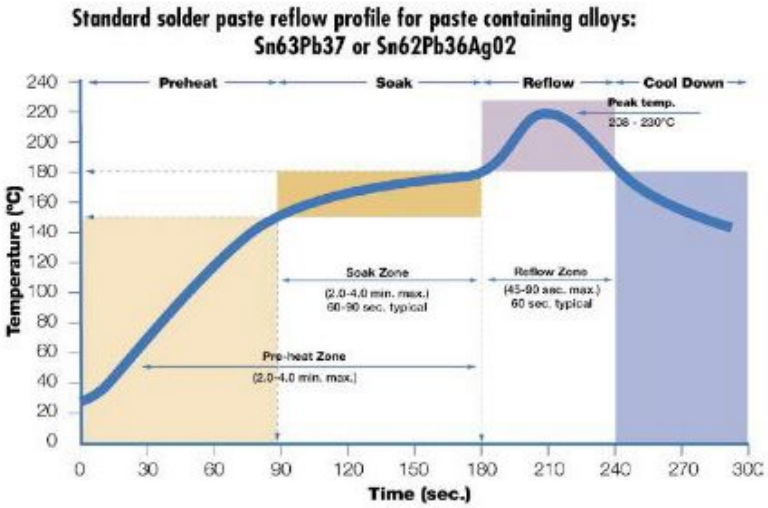
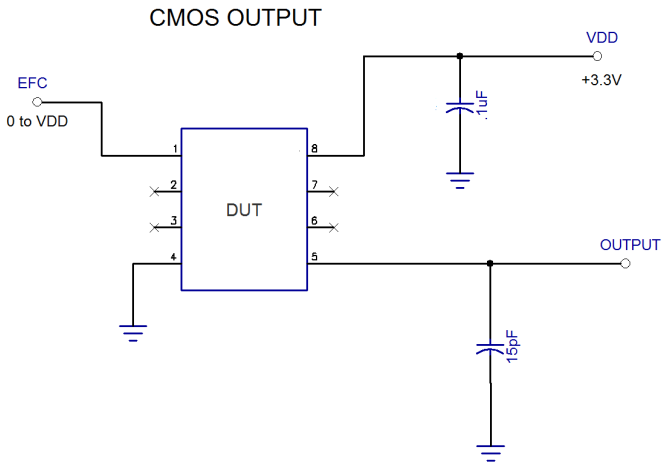
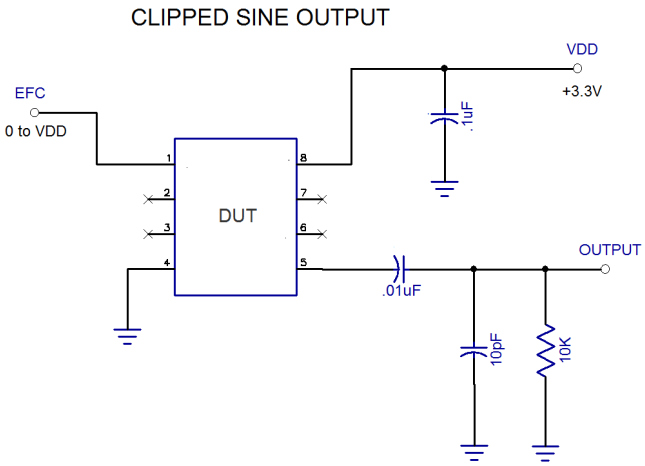
Recommended Solder Reflow Profiles





Recommended Configuration





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