



frequency control solutions

ZT600

SMT PACKAGE

TIGHT TEMPERATURE STABILITY

texo

Product Description

Greenray Industries' ZT600 TCXO features surface mount technology and tight temperature stability.



Features

- Temperature Stability as low as ± 0.5 ppm
- Available from 10.00 MHz to 500 MHz with either 3.3 V or 5.0 V supply
- 29.2 x 25.4 mm, SMT package
- CMOS or Sinewave (Model ZT601) Output
- Ideal for Communications applications that require low phase noise and tight stability performance

Applications

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

Rev. H



intertek

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Electrical Characteristics

Frequency Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	Sinewave	10		500	MHz	ZT601
	CMOS	10		125	MHz	ZT600
Frequency Stability (other stability available, please contact factory)	-10°C to +60°C		± 0.2		ppm	G27
	-20°C to +70°C		± 0.5		ppm	N57
	-40°C to +85°C		± 0.5		ppm	T57
	-40°C to +85°C		± 1		ppm	T16
Aging	1 st year		± 0.5	± 1	ppm	
Acceleration Sensitivity	(Note 1)			2.5	ppb/g	
Frequency vs Supply	±1% change			0.1	ppm	
Electronic Frequency Control	EFC = 0 to SUP. positive slope		± 5		ppm	
Phase Noise Performances						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	Ordering Code
Static @ 10 MHz nominal Frequency	10		-95		dBc/Hz	
	100		-125		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		3.0	3.3	3.6	VDC	3.3
		4.75	5.0	5.25	VDC	5.0
Input Current				35	mA	
RF Output						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS						ZT600
Load			15		pF	
Level		SUP.-0.5 "1" Level		+0.2 "0" level	V	
Rise/Fall Time				3	ns	
Symmetry		40	50	60	%	
Sine						ZT610
Load			50		Ω	
Power level	50Ω load	20			dBm	
Harmonics			-20		dBc	

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



Environmental Screenings

Environmental			
Screening	Conditions	Method, Condition	Notes
Vibration	MIL-STD-202G	214, I.A	0.2 PSD, 5.35 g RMS
Shock	MIL-STD-202G	213, C	100 g, 6ms, half-sine

Recommendation and General Information

Conditions	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-45°C to +90°C
Terminal Finish	Gold plated is standard (E), other options available (Sn63Pb37 or SnAg)
Package Weight	3 grams
Soldering Instruction	Hand or wave soldering
Shipping	Type of package (T&R, Tray pack)
Marking	Line 1: Greenray logo Line 2: Model Line 3: Frequency Line 4: Serial Number Line 5: Data code (YYWW)

Ordering Example

ZT600	-	T16	-	5.0	-	10.0 MHz	-	E
Model		Stability Code		Input Voltage Code		Frequency in MHz		Termination finish
ZT600: CMOS ZT601: Sine wave		Refer to Electrical Specs Table* G27 (-10 to +60°C) N57 (-20 to +70 °C) T57 (-40 to +85 °C) T16 (-40 to +85 °C)		3.3: 3.3 VDC 5.0: 5.0 VDC		-From 10 MHz to 125MHz: ZT600 -From 10 MHz to 500 MHz: ZT601		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

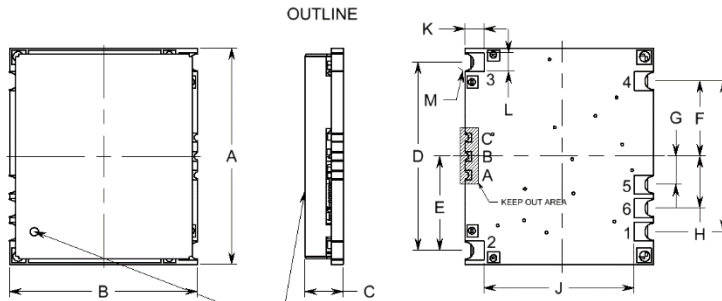


frequency control solutions

ZT600 SERIES
10 MHz to 500 MHz



Package information



PAD CONNECTIONS

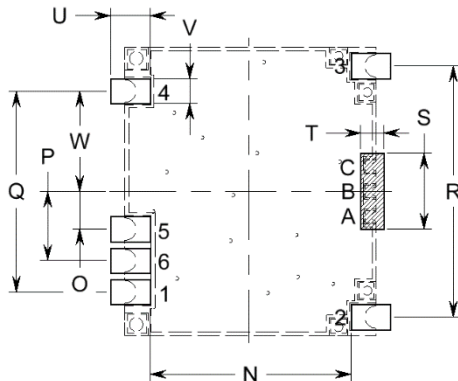
1. OUTPUT
2. SUPPLY
3. 0V & CASE GND
4. EFC
5. 0V & CASE GND
6. 0V & CASE GND
- A. SCLK (INTERNAL USE ONLY)
- B. DIO (INTERNAL USE ONLY)
- C. CS (INTERNAL USE ONLY)

MARKING, THIS SURFACE
PAD 1 IDENTIFICATION

PART DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
A	1.150	29.21	1.170	29.72
B	1.000	25.40	1.020	25.91
C	0.200	5.08	.220	5.59
D	1.000	25.40	1.020	25.91
E	0.500	12.70	0.520	13.21
F	0.400	10.16	0.420	10.67
G	0.150	3.81	0.170	4.32
H	0.275	6.99	0.295	7.49
I	0.800	20.32	0.820	20.83
J	0.800	20.32	0.820	20.83
K	0.100	2.54	NA	NA
L	0.100	2.54	NA	NA
M	Ø0.090	Ø2.29	NA	NA

**RECOMMEND
LAND PATTERN**



LAND PATTERN DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
N	0.800	20.32	0.820	20.83
O	0.150	3.81	0.170	4.32
P	0.275	6.99	0.295	7.49
Q	0.800	20.32	0.820	20.83
R	1.000	25.40	1.020	25.91
S	0.303	7.70	0.323	8.20
T	0.091	2.31	0.111	2.82
U	0.158	4.01	0.178	4.52
V	0.100	2.54	0.120	3.05

NOTES:

1. AREA WHICH IS SHADED AROUND PADS A, B, & C ARE NC AND SHOULD NOT HAVE ANY METALIZATION IN THIS AREA.
2. LANDING PADS SHOULD NOT EXTEND ANY FURTHER UNDERNEATH PCB THAN SHOWN.



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