



frequency control solutions

**Y1600**

GOOD PHASE NOISE PERFORMANCE  
RUGGED, COMPACT PACKAGE

**XO**

## Product Description

Greenray Industries' Y1600 XO offers good phase noise performance in a compact, rugged package



## Features

- 20.3 x 12.7 mm, rugged DIP package
- +5 VDC Supply
- Frequency Range: 10 MHz to 100 MHz
- CMOS output
- MIL Screening to MIL-PRF-55310 available
- Random Vibration per MIL-STD-202, Method 214
- Shock per space MIL-STD-202, Method 213
- RoHS compliant

## Applications

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

REV: F



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**Y1600 SERIES**  
10 MHz to 100 MHz

Electrical Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	@ +25°C	10		100	MHz	(FREQ.)
Frequency Stability	0°C to +50°C		± 5.0		ppm	B56
	-20°C to +70°C		± 10		ppm	N106
	-40°C to +85°C		± 15		ppm	T156
Aging	1 <sup>st</sup> year			± 1.0	ppm	
	10 years (10 MHz)			± 3.0	ppm	
Acceleration Sensitivity	Worst axis tested @ 90 Hz, 10 g			3.5	ppb/g	SG
				3.0	ppb/g	LG
				2.5	ppb/g	ULG
Frequency vs Voltage	For a 5% change			± 0.1	ppm	
Frequency vs Load	For a 10% change			± 0.1	ppm	
Voltage Control (EFC)	0 to Supply – 0.5, Positive Slope		± 10		ppm	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	Ordering Code
Static @ 10 MHz Nom. Freq.	10		-105		dBc/Hz	
	100		-135		dBc/Hz	
	1 k		-155		dBc/Hz	
	10 k		-160		dBc/Hz	
	100 k		-162		dBc/Hz	
DC Supply						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Supply Voltage		4.75	5.0	5.25	Vdc	E
Supply Current	10 MHz Freq.			15	mA	
RF Output						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS						C
Load		10	15		pF	
Level		0.8 Vdd "1" Level		0.2 Vdd "0" Level	V	
Symmetry		45	50	55	%	



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Environmental and Mechanical Specifications				
Test	Standard	Method	Condition	Description
Vibration (Random)	MIL-STD-202	214	I-A	0.2 PSD, 5.35 rms G
Vibration (Sine)	MIL-STD-202	204	D	20 g, 20 to 2,000 Hz
Shock	MIL-STD-202	213	C	100 g, 6 ms half-sine

Recommendations and General Information	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +85°C
Terminal Finish	Au (RoHS), Sn 100 (Lead-free), SnPb 63/37 (non-RoHS)
Package Weight	3 grams
Soldering Instruction	Hand Solder
Shipping	Tray Pack
Marking	GRI Logo, Model #, Frequency, Serial #, Date Code Addition marking upon request if space is available

#### Ordering Example

<b>Y1600</b>	<b>-</b>	<b>N</b>	<b>106</b>	<b>-</b>	<b>SG</b>	<b>-</b>	<b>10.0 MHz</b>	<b>-</b>	<b>E</b>
<b>Model</b>	<b>Temp. Range</b>		<b>Stability</b>		<b>G-Sensitivity</b>		<b>Freq. (MHz)</b>		<b>Term. Finish</b>
	B: 0 to +50°C N: -20 to +70°C T: -40 to +85°C		56: ±5ppm 106: ±10ppm 156: ±15ppm		SG: < 2.5 ppb/g HG: Customer-specific		10 to 100		E: Au (RoHS) LF: Sn 100 (Lead-free) PB: SnPb 63/37 (non-RoHS)

The Order ID (Y1600-N106-SG-10.0MHz-E) is only used to issue the preliminary quote. The Part Number (Y1600-1) 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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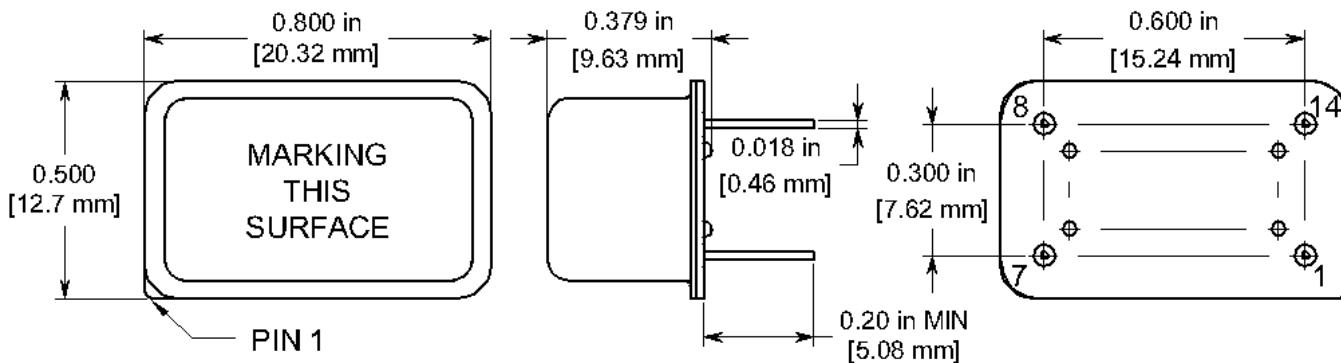


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### Package Information



PIN CONNECTIONS	
1	CONTROL VOLTAGE (EFC)
7	GND
8	OUTPUT
14	SUPPLY VOLTAGE (Vdd)

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



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