



frequency control solutions

## YH1300

LOW PHASE NOISE  
ULTRA-LOW ACCELERATION SENSITIVITY

# OCXO

## Product Description

Greenray Industries' YH1310 Series OCXOs offer superior stability in a compact, Euro package.

## Features

- 36.1 x 26.9mm Euro package
- Frequency Range: 10 - 100 MHz
- Excellent stability
- SC-cut Crystal
- Euro Package CO-8 OCXO
- Sinewave Output (YH1310); CMOS Output (YH1311)



## Applications

- Ground radar
- Air traffic control system
- Emergency wireless communications transceiver
- Clock reference for analyzers or synthesizers
- Ethernet synchronization
- Communication system
- Ground station RF telemetry systems
- Multiband terminal
- Upconverter

Rev. F



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**YH1300 SERIES**  
10 MHz to 50 MHz



## Electrical Characteristics

Frequency Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	Sinewave CMOS	10		100	MHz	YH1310 YH1311
Frequency Stability (other stability available)	0°C to +50°C		± 20		ppb	B28
	-20°C to +70°C		± 30		ppb	N38
	-40°C to +85°C		± 50		ppb	T58
Aging	1 <sup>st</sup> year			± 0.1	ppm	
	For 10 years			± 0.5	ppm	
Warm-up Time	Within ± 50 ppb		5		min	
Frequency vs Voltage	For a 5% change			± 5	ppb	
Frequency vs Load	For a 10% change			± 5	ppb	
Electronic Frequency Control	EFC = 0.5 to V <sub>DD</sub> Positive slope		± 1		ppm	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	
Phase Noise (static) @ 10 MHz nominal Frequency	10		-118		dBc/Hz	
	100		-140		dBc/Hz	
	1k		-150		dBc/Hz	
	10 k		-157		dBc/Hz	
	100 k		-158		dBc/Hz	
	1 M		-160		dBc/Hz	
DC Supply						
Parameter	Conditions	Min	Typical	Max	Units	
Supply Voltage (V <sub>DD</sub> )		4.75	5.0	5.25	VDC	
		11.4	12.0	12.6	VDC	
Supply Current				25	mA	
Input Power	Warm-up, 5 min			6	W	
	Idle, at +25°C			2	W	
RF Outputs available: Sinewave and CMOS						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS Output						YH1311
Load			15		pF	
Level	CMOS	V <sub>DD</sub> -0.2 "1" level		+0.2 "0" level	VDC	
Sine wave Output						YH1310
Harmonics				- 20	dBc	
Load			50		Ω	
Level	50Ω load	+ 8	+ 10	+ 12	dBm	



ISO 9001  
Quality

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AS9100  
Aerospace



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## Environmental and Mechanical Specifications

Screenings			
Screening	Standard	Method, Condition	Description
Vibration	MIL-STD-202	204, Cond A	50 g, 20 to 2,000 Hz, swept sine
Shock	MIL-STD-202	213, Cond C	1,500 g, 0.5 ms half-sine
	MIL-STD-810	541, Cond A	

## Recommendations and General Information

Conditions	
Parameter	Notes
Operating Temperature	-40°C to +85°C
Storage Temperature	-45°C to +90°C
Terminal Finish	SnPb 63/37 (non-RoHS)
Package Finish	Stainless Steel and Nickel-plated Kovar
Package Weight	14 grams
Soldering Instruction	Hand or reflow soldering
Shipping	Tray package
Marking	Line 1: Greenray logo Line 2: Model Line 3: Frequency Line 4: Serial Number + Data Code (YYWW)

## Ordering Example

YH1310	-	N38	-	5.0	-	10.0MHz	-	E
Model		Stability Code		Input Voltage		Frequency in MHz		Termination finish
YH1310 for Sinewave YH1311 for HCMOS		<a href="#">Refer to Electrical Specs Table*</a> B28 (0 to +50°C) N38 (-20 to +70°C) T58 (-40 to +85°C)		5.0: 5.0 VDC 12.0: 12.0 VDC		From 10 to 100 MHz		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



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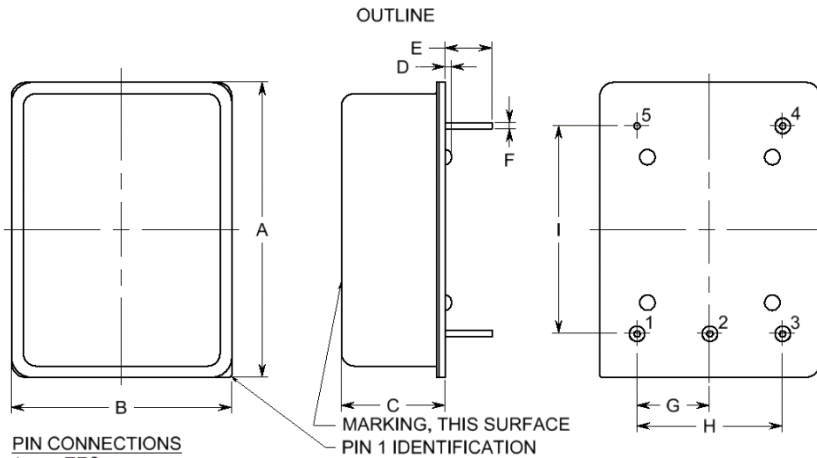
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## Package information



### PIN CONNECTIONS

1. EFC
2. Vref
3. SUPPLY
4. OUTPUT
5. 0V & CASE GND

### DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
A	1.420	36.07	1.620	41.15
B	1.060	26.92	1.260	32.00
C	0.490	12.45	0.510	12.95
D	0.026	0.66	0.032	0.81
E	0.230	5.84	0.260	6.60
F	0.032	0.81	0.034	0.86
G	0.350	8.89	0.360	9.14
H	0.700	17.78	0.710	18.03
I	1.000	25.40	1.010	25.65



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