



frequency control solutions

## YH1320

LOW PHASE NOISE  
HCMOS OR SINE WAVE OUTPUT

# OCXO

### Product Description

Greenray Industries' YH1320 Series OCXOs offer very low phase noise and are ideal for base station or test equipment applications.

### Features

- 50.8 mm sq. package
- Frequency Range: 10 - 120 MHz
- Supply Voltage: 12 V and 15 V
- Euro Package CO-8 OCXO
- CMOS (YH1320) or Sinewave (YH1321) output
- Low Phase Noise performance from 10 MHz through 120 MHz
- High Shock & Vibration Options available



### Applications

- High acceleration/vibration GPS system
- System reference for airborne
- Ethernet synchronization
- Airborne data router
- Communication system
- RF telemetry systems
- Multiband terminal
- Upconverter

Rev. J



intertek

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## Electrical Characteristics

Frequency Characteristics							
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code	
Nominal Frequency		10		120	MHz		
Frequency Stability typical (other stability available, please contact factory)	Frequency	10 MHz		100 MHz		10 MHz	100 MHz
	0°C to +50°C		± 10	± 50	ppb	B18	B58
	-10°C to +60°C		± 15	± 70	ppb	G158	G78
	-20°C to +70°C		± 20	± 100	ppb	N28	N17
Aging	Frequency < 100 MHz			± 0.1	ppm		
	Frequency ≥ 100 MHz			± 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 to SUP. Positive slope		± 1		ppm		
Phase Noise Performance							
Parameter	Frequency Offset (Hz)	STD	Ultra-Low	STD	Ultra-Low	Units	Ordering Code
Static		10 MHz		100 MHz			
	10	- 125	- 128	- 85	- 90	dBc/Hz	Standard: STD
	100	- 150	- 155	- 115	- 120	dBc/Hz	Ultra-Low: UL
	1k	- 160	- 163	- 145	- 150	dBc/Hz	
	10 k	- 165	- 168	- 160	- 165	dBc/Hz	
	100 k	- 165	- 168	- 165	- 165	dBc/Hz	
DC Supply							
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code	
Supply Voltage		11.4	12.0	12.6	VDC	D	
		14.3	15.0	15.7	VDC	C	
Supply Current				25	mA		
Input Power	Warm-up, 5 min			6	W		
	Idle, at +25°C			2	W		
RF Outputs							
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code	
CMOS						YH1320	
Load			15		pF		
Level	12 & 15 VDC	SUP.-0.5 "1" level		+0.5 "0" level	VDC		
Sinewave						YH1321	
Harmonics				- 20	dBc		
Load			50		Ω		
Level	50Ω load	+ 8	+ 10	+ 12	dBm		



## 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

## 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), SnAg 96.5/3.5 (RoHS)
Package Finish	Stainless Steel and Nickel-plated Kovar
Package Weight	70 grams
Soldering Instruction	Hand solder
Shipping	Type of package (Tube, T&R, tray pack, etc.)
Marking	Line 1: Greenray logo Line 2: Model + Frequency Line 3: Serial Number + Data Code (YYWW)

## Ordering Example

YH1321	-	N28	-	UL	-	D	-	10.0 MHz	-	LF
Model		Stability Code		Phase Noise		Input Voltage		Frequency in MHz		Termination finish
YH1320 CMOS YH1321 Sine		<a href="#">Refer to Electrical Specs Table*</a> B18, B58 (0 to +50°C) G158, G78 (-10 to +60°C) N28, N17 (-20 to +70°C) T58, T37 (-40 to +85°C)		STD : Standard UL : Ultra-Low		D: 12.0 VDC C: 15.0 VDC		From 10 to 120 MHz		PB: SnPb 63/37 (non-RoHS) LF: SnAg 96.5/3.5 (Lead-free)

\*Other frequency stabilities available, please contact factory



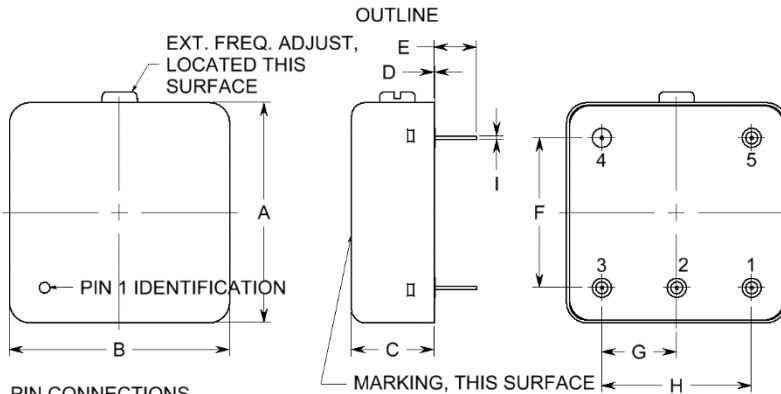
frequency control solutions

# YH1320 SERIES

10 MHz to 120 MHz



## Package information



### PIN CONNECTIONS

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

### DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
A	2.000	50.80	2.040	51.82
B	2.000	50.80	2.040	51.82
C	0.750	19.05	0.790	20.07
D	NA	NA	0.030	0.76
E	0.240	6.10	0.28	7.11
F	1.360	34.54	1.375	34.93
G	0.680	17.27	0.695	17.65
H	1.360	34.54	1.375	34.93
I	0.030	0.76	0.033	0.84



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