



frequency control solutions

YH1320 SERIES

10 MHz to 120 MHz



Product Description

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

Features

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



ISO 9001
Quality

Greenray Industries, Inc., 840 West Church Road, Mechanicsburg, PA 17055
TEL: 717-766-0223 FAX: 717-790-9509 e-mail: sales@greenrayindustries.com
www.greenrayindustries.com

Greenray Proprietary Greenray Industries, Inc. disclaims all liability arising from this information and its use. No licenses are conveyed, implicitly or otherwise, to any Greenray intellectual property rights. ©2002 Greenray Industries, Inc. All rights reserved. Reproduction in whole or in part is prohibited.



AS9100
Aerospace



Electrical Characteristics

Frequency Characteristics							
Parameter	Conditions	Min	Typical		Max	Units	Ordering Code
Nominal Frequency	HCMOS Sinewave	10			120	MHz	YH1320 YH1321
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 V _{DD} Positive slope		± 1			ppm	
Phase Noise Performance							
Parameter	Frequency Frequency Offset (Hz)	10 MHz		100 MHz		Units	Ordering Code
Phase Noise (static)	10	Stand-ard	Ultra Low	Stand-ard	Ultra Low	dBc/Hz	Standard: STD Ultra-Low: UL
	100	- 125	- 128	- 85	- 90	dBc/Hz	
	1k	- 150	- 155	- 115	- 120	dBc/Hz	
	10 k	- 160	- 163	- 145	- 150	dBc/Hz	
	100 k	- 165	- 168	- 160	- 165	dBc/Hz	
		- 165	- 168	- 165	- 165	dBc/Hz	
DC Supply							
Parameter	Conditions	Min	Typical		Max	Units	Ordering Code
Supply Voltage (V _{DD})		11.4	12.0		12.6	VDC	D
		14.3	15.0		15.7	VDC	C
Supply Current	CMOS				25	mA	
Input Power	Warm-up, 5 min				6	W	
	Idle, at +25°C				2	W	
RF Outputs: Sinewave and CMOS							
Parameter	Conditions	Min	Typical		Max	Units	Ordering Code
CMOS							YH1320
Load			15			pF	
Level	CMOS, 12 and 15 VDC	V _{DD} -0.5 "1" level			+0.5 "0" level	VDC	
Sinewave							YH1321
Harmonics					- 20	dBc	
Load	Sinewave		50			Ω	
Level	Sine, 50Ω load	+ 8	+ 10		+ 12	dBm	



frequency control solutions

YH1320 SERIES
10 MHz to 120 MHz



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) only
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	-	10.0MHz	-	E
Model		Stability Code		Phase Noise		Input Voltage		Frequency in MHz		Termination finish
YH1320 CMOS YH1321 Sinewave		<u>Refer to Electrical Specs Table*</u> 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		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



ISO 9001
Quality

Quality

Greenray Industries, Inc., 840 West Church Road, Mechanicsburg, PA 17055
TEL: 717-766-0223 FAX: 717-790-9509 e-mail: sales@greenrayindustries.com
www.greenrayindustries.com

Greenray Proprietary Greenray Industries, Inc. disclaims all liability arising from this information and its use. No licenses are conveyed, implicitly or otherwise, to any Greenray intellectual property rights. ©2002 Greenray Industries, Inc. All rights reserved. Reproduction in whole or in part is prohibited.

conveyed, implicitly or otherwise, to any Greenray intellectual property rights. ©2002 Greenray Industries, Inc. All rights reserved. Reproduction in whole or in part is prohibited.



AS9100
Aerospace

Aerospace

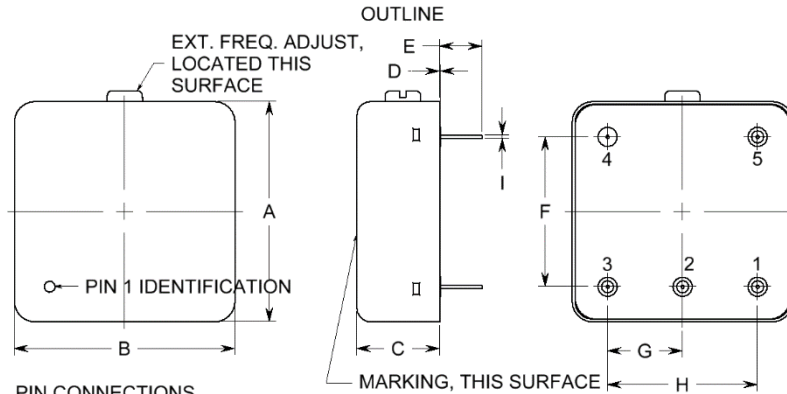


frequency control solutions

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



ISO 9001
Quality

Quality

Greenray Industries, Inc., 840 West Church Road, Mechanicsburg, PA 17055
TEL: 717-766-0223 FAX: 717-790-9509 e-mail: sales@greenrayindustries.com
www.greenrayindustries.com

Greenray Proprietary Greenray Industries, Inc. disclaims all liability arising from this information and its use. No licenses are conveyed, implicitly or otherwise, to any Greenray intellectual property rights. ©2002 Greenray Industries, Inc. All rights reserved. Reproduction in whole or in part is prohibited.

conveyed, implicitly or otherwise, to any Greenray intellectual property rights. ©2002 Greenray Industries, Inc. All rights reserved. Reproduction in whole or in part is prohibited.



AS9100
Aerospace

Aerospace