



frequency control solutions

YH1420

MINIATURE DIP PACKAGE
GOOD TEMP STABILITY

OCXO

Product Description

Greenray Industries' YH1420/1421 Series OCXOs offer good stability in a compact, DIP package.



Features

- Output: CMOS (Model 1420) or Sinewave (Model 1421)
- Supply Voltage: 3.3 or 5VDC
- Miniature 20.3 x 12.7mm package
- Frequency Range: 10 - 120 MHz
- ROHS Compliant
- Meets Stratum 3 requirements

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 D



ISO 9001
Quality

Greenray Industries, Inc., 840 West Church Road, Mechanicsburg, PA 17055
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AS9100
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YH1420 SERIES
10 MHz to 120 MHz



Electrical Characteristics

Frequency Characteristics						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Nominal Frequency	CMOS	10		120	MHz	YH1420
	Sinewave					YH1421
Frequency Stability (other stability available, please contact factory)	0°C to +60°C		± 100		ppb	G17
	-20°C to +70°C		± 200		ppb	N27
	-40°C to +85°C		± 300		ppb	T37
Aging	Per year			± 0.5	ppm	
Warm-up Time	Within ± 50 ppb		5		min	
Frequency vs Voltage	For a 5% change			± 3	ppb	
Frequency vs Load	For a 10% change			± 5	ppb	
Electronic Frequency Control	EFC = 0 to V _{DD} , Positive slope		± 5		ppm	
Phase Noise Performance						
Parameter	Frequency Offset (Hz)	Min	Typical	Max	Units	
Phase Noise (static) @ 100 MHz nominal Frequency	10		-110		dBc/Hz	
	100		-135		dBc/Hz	
	1k		-155		dBc/Hz	
	10 k		-158		dBc/Hz	
	100 k		-158		dBc/Hz	
DC Supply						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
Supply Voltage (V _{DD})		3.0	3.3	3.6	VDC	3.3
		4.75	5.0	5.25	VDC	5.0
Supply Current				25	mA	
Input Power	Warm-up, 5 min			3	W	
	Idle, at +25°C			1	W	
RF Outputs available: CMOS and Sinewave						
Parameter	Conditions	Min	Typical	Max	Units	Ordering Code
CMOS Output						YH1420
Load			15		pF	
Level		V _{DD} -0.2 "1" level		+0.2 "0" level	VDC	
Symmetry	CMOS	40	50	60	%	
Sinewave Output						YH1421
Load	Sine		50		Ω	
Level	Sine, 50Ω load	0			dBm	
Harmonics	Sine			- 20	dBc	



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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

Recommendations and General Information

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

Ordering (Example)

YH1420	-	N27	-	5.0	-	100.0MHz	-	E
Model		Stability Code		Input Voltage		Frequency in MHz		Termination finish
YH1420 CMOS YH1421 Sinewave		<u>Refer to Electrical Specs Table*</u> G17 (0 to +60°C) N27 (-20 to +70°C) T37 (-40 to +85°C)		3.3: 3.3 VDC 5.0: 5.0 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



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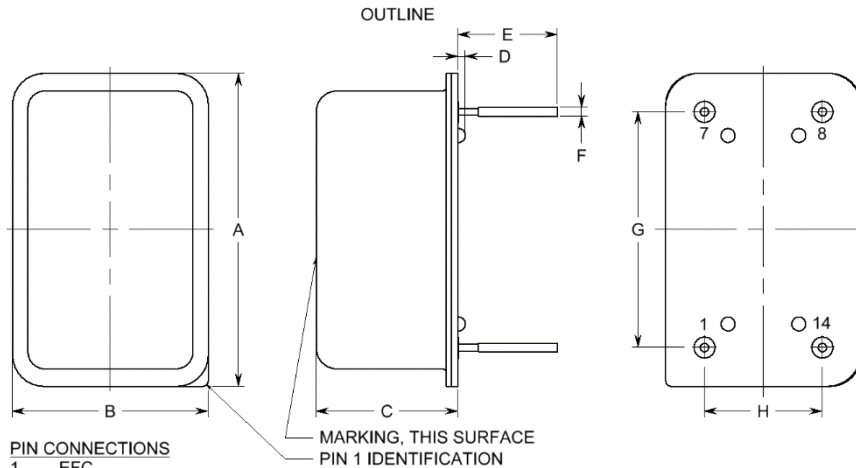
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Package information



- 1. EFC
- 7. 0V & CASE GND
- 8. OUTPUT
- 14. SUPPLY

DIMENSIONS

DIM	TYP.		MAX.	
	inches	mm	inches	mm
A	0.800	20.32	0.820	20.83
B	0.500	12.70	0.520	13.21
C	NA	NA	0.370	9.40
D	0.031	0.79	0.036	0.91
E	0.220	5.59	0.240	6.10
F	∅0.018	∅0.46	∅0.023	∅0.58
G	0.600	15.24	0.605	15.37
H	0.300	7.62	0.305	7.75



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