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DGOF5S3
14 PIN DIP 5.0V
Stratum 3 HCMOS OCXO

OCXO

CONNOR WINFIELD

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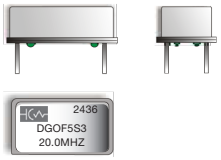
Description:

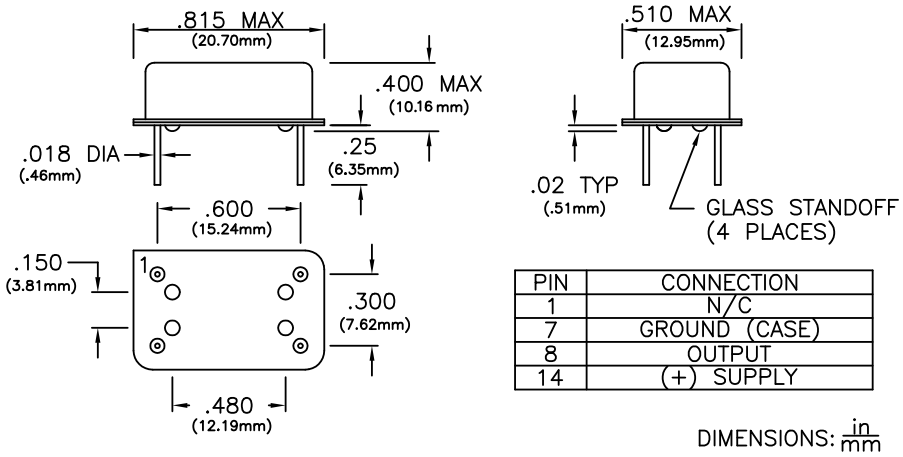
The Connor-Winfield DGOF5S3 is a hermetically sealed 14 Pin DIP, 5.0V Oven Controlled Crystal Oscillator (OCXO) HCMOS/TTL Compatible. The DGOF5S3 is designed for Stratum 3 applications.



Features:

- 5.0V Operation
- Low Jitter <3pS RMS
- Temperature Stability ±0.25ppm
- Frequency Tolerance of ±2.5ppm over 10 years

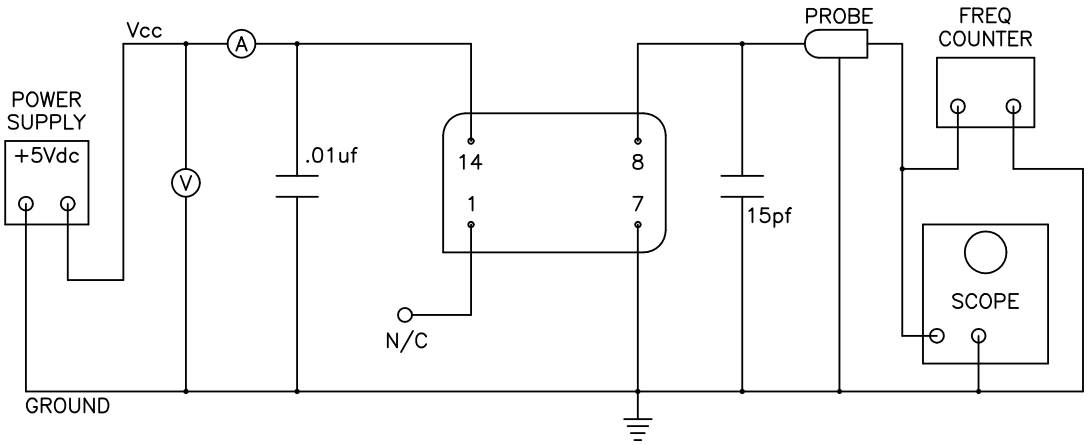
Package Outline



PIN	CONNECTION
1	N/C
7	GROUND (CASE)
8	OUTPUT
14	(+) SUPPLY

DIMENSIONS: in / mm

Test Diagram



RoHS COMPLIANT

Ordering Information

DGOF5S3 - 020.0M

OCXO SERIES — CENTER FREQUENCY

Bulletin	Cx030
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Revision	01
Date	05 Sept 2024

Attention: System Designers please review Application Note AN2093: System Design Information and Printed Circuit Board Layout Guidelines for OCXO Oscillators. @ https://www.conwin.com/pdfs/AN2093.pdf

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Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-40	-	85	°C	
Supply Voltage (Vcc)	-0.5	-	7	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Center Frequency (Fo)	-	20.0	-	MHz	
Frequency Calibration	-1.0	-	1.0	ppm	1, 4
Frequency vs. change in Temperature	-0.25	-	0.25	ppm	2
Frequency vs. change in Supply Voltage	-0.05	-	0.05	ppm	3
Aging (Daily)	-15	-	15	ppb/day	4
Aging (1st Year)	-0.7	-	0.7	ppm	
Total Frequency Tolerance	-2.5	-	2.5	ppm	5
Operating Temperature Range	0	-	70	°C	
Supply Voltage (Vcc)	4.75	5.00	5.25	Vdc	
Supply Current (Icc)	-	-	300	mA	
Jitter (BW=10Hz to 20MHz)	-	-	3	ps rms	
Allan Variance (1 second)	-	5.00E-10	-		
SSB Phase Noise at 10Hz offset	-	-90	-	dBc/Hz	
SSB Phase Noise at 10KHz offset	-	-130	-	dBc/Hz	
Start Up Time: Oscillator	-	-	10	mS	
Warm Up Time	-	-	5	Minutes	6
TDEV @ 1.0 Sec.	-	-	1	nS	
TDEV @ 4.0 Sec.	-	-	2	nS	

HCMOS Output Characteristics

Parameter		Minimum	Nominal	Maximum	Units	Notes
LOAD		-	-	15	pf	
Voltage	(High) (Voh)	4.5	-	-	Vdc	
	(Low) (Vol)	-	-	0.4	Vdc	
Current	(High) (Ioh)	-4	-	-	mA	
	(Low) (Ioh)	-	-	4	mA	
Duty Cycle at 50% of Vcc		45	50	55	%	
Rise / Fall Time 10% to 90%		-	-	6	nS	

Notes:

1) *Initial calibration @ 25°C.*
2) *Overall frequency stability, 0 to 70°C.*
3) *Frequency stability per 5% change in supply voltage.*
4) *At the time of shipment after 48 hours of operation.*
5) *Inclusive of calibration, operating temperature range, supply voltage change, load change, shock and vibration, 10 years aging.*
6) *Measured @ 25°C, within 5 minutes, the unit will be within +/-0.1ppm of its reference frequency, measured after 30 minutes of continuous operation at a stable 25°C*

Package Characteristics

Package	14 pin DIP, hermetically sealed, grounded case, welded package
Moisture Sensitivity Level:	MSL-1

Environmental Characteristics

Temperature Cycle:	Per MIL-STD-883, Method 1010, Condition B. -55°C to 125°C, 20 cycles,10 minute dwell, 1 minute transition.
Gross Leak Test:	Per MIL-STD-202, Method 112, Condition D. No bubbles in flourinert (FC-43) at 125°C ±5°C for 20 seconds.

Soldering

Pin Solderability:	Per MIL-STD-883, Method 200. 38 hour steam age prior to 254°C ±5°C Solder pot dip, 95% Coverage.
Resistance to Solder Heat:	Per MIL-STD-202, Method 210, Condition C. Wave: Topside board-mount product, 260°C ±5°C for 20 Seconds.

Mechanical Characteristics

Vibration:	Per MIL-STD-202, Method 204, Condition A. 10G's peak, 10Hz to 500Hz, 15m inute cycles 12 times each perpendicular axis.
Shock:	Per MIL-STD-202, Method 213, Condition D. 500G's, 1ms, halfsine, 3 shocks per direction.
Moisture Resistance:	Per MIL-STD-202, Method 106. 95% RH @ 65°C, 10 cycles 10°C to 65°C.

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