Sub-Miniature Precision 5.0x3.2mm Clipped Sinewave TCXO

In Stock at Digi-Key

CONNOR WINFIELD

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Description



The Connor-Winfield's D53G series are 5.0x3.2mm Surface Mount Temperature Compensated Crystal Oscillator (TCXO). Through the use of Analog Temperature Compensation, the D53G series are capable of holding sub 1-ppm stabilities over the -30 to 85°C temperature range.

Features

Model D53G

TCXO
3.3Vdc Operation
Clipped Sinewave Output Logic
Frequency Stability: ±0.50ppm
Temperature Range: -30 to 85°C
Low Jitter <1pS RMS
5.0x3.2mm Surface Mount Package
Tape and Reel Packaging
RoHS Compliant / Lead Free

Specification

Absolute Maximum Ratings

Parameter		Minimum	Nominal	Maximum	Units	Note
Storage Temperature		-55	-	85	°C	
Supply Voltage	(Vcc)	-0.5	-	6.0	Vdc	
Input Voltage		-0.5	-	Vcc+0.5	Vdc	

Operating Specifications

Parameter		Minimum	Nominal	Maximum	Units	Note
Frequencies Available	(Fo)		20.0, 26.0		MHz	
Frequency Calibration @ 25 C		-1.00	-	1.00	ppm	1
Frequency Stability [±(Fmax – Fmin)/2.Fo]		-0.50	-	0.50	ppm	2
Supply Voltage Variation (Vcc ±5%)		-0.025	-	0.025	ppm	
Load Coefficient (±5%)		-0.025	-	0.025	ppm	
Static Temperature Hysteresis		-	-	0.4	ppm	3
Frequency shift after reflow soldering		-1.00	-	1.00	ppm	4
Aging		-1.00	-	1.00	ppm/year	
Temperature Range		-30	-	85	C	
Supply Voltage	(Vcc)	3.135	3.3	3.465	Vdc	
Supply Current	(Icc)	-	-	2	mA	
Period Jitter		-	3	5	ps rms	
Phase Jitter (BW=12kHz to 20MHz)		-	0.5	1	ps rms	
SSB Phase Noise at 10Hz offset		-	-80		dBc/Hz	
SSB Phase Noise at 100Hz offset		-	-110		dBc/Hz	
SSB Phase Noise at 1KHz offset		-	-130		dBc/Hz	
SSB Phase Noise at 10KHz offset		-	-145		dBc/Hz	

Clipped Sinewave Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Note
Output Voltage	1.00	-	-	V pk-pk	5
Output Load Resistance	-	10K	-	Ohms	
Output Load Capacitance	-	10	-	pF	6

Note:

1) Initial calibration @ 25 C. Specifications at time of shipment after 48 hours of operation
2) Frequency stability vs. change in temperature.
3) Frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25°C.
4) Within two hours after reflow.
5) Output is DC coupled.
6) For best performance it is recommended that the circuit connected to this output should have an equivalent input capacitance of 10pF.

RoHS COMPLIANT

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Package Characteristics

Package	Ceramic Surface Mount Package.

Environmental Characteristics

Vibration:	Vibration per Mil Std 883E Method 2007.3 Test Condition A
Shock:	Mechanical Shock per Mil Std 883E Method 2002.4 Test Condition B.
Soldering:	SMD product suitable for Convection Reflow soldering. Peak temperature 260 C. Maximum time above 220 C, 60 seconds.
Solderability	Solderability per Mil Std 883E Method 2003

Ordering Information

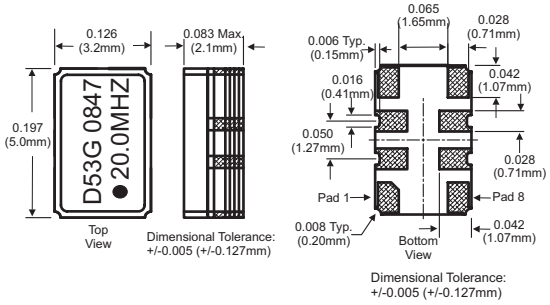
D53G - 020.0MHZ *
D53G - 026.0MHZ *

TCXO SERIES

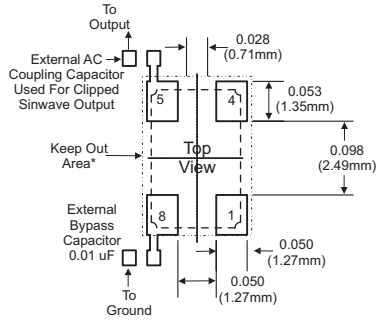
CENTER FREQUENCY

* For the tape and reel option, add -T to the end of the part number.
Example: D53G-020.0 MHZ -T

Package Layout



Suggested Pad Layout

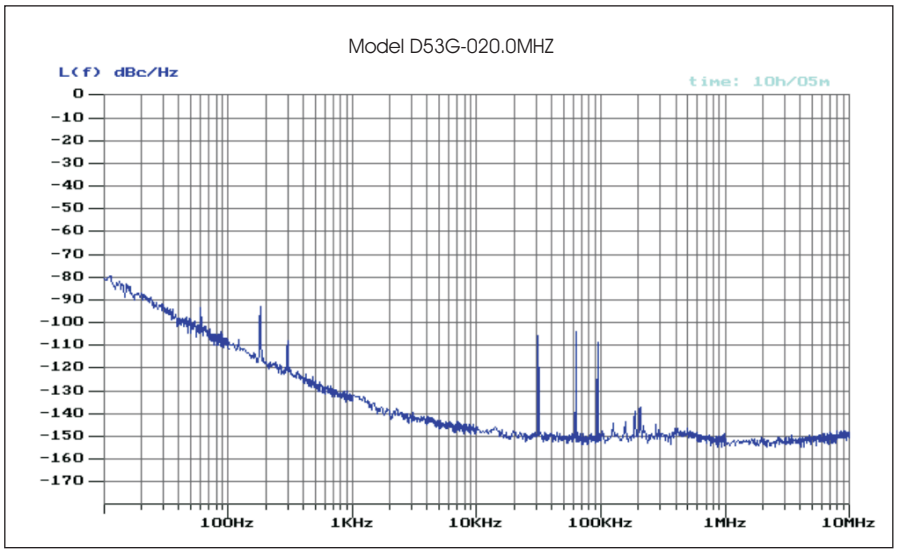


* Do not route any traces in the keep out area. It is recommended the next layer under the keep out area is to be ground plane.

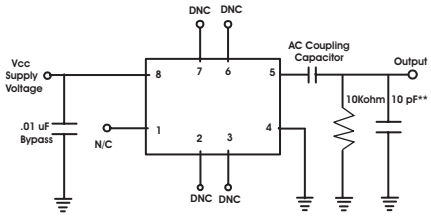
Pin Connections

Pad	Connection
1	N/C
2	Do not connect
3	Do not connect
4	Ground
5	Output
6	Do not connect
7	Do not connect
8	Supply, Vcc

Typical Phase Noise

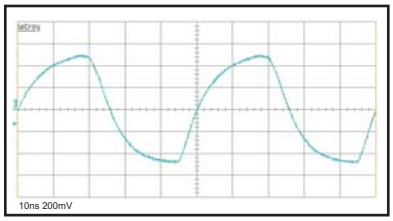


Test Circuit

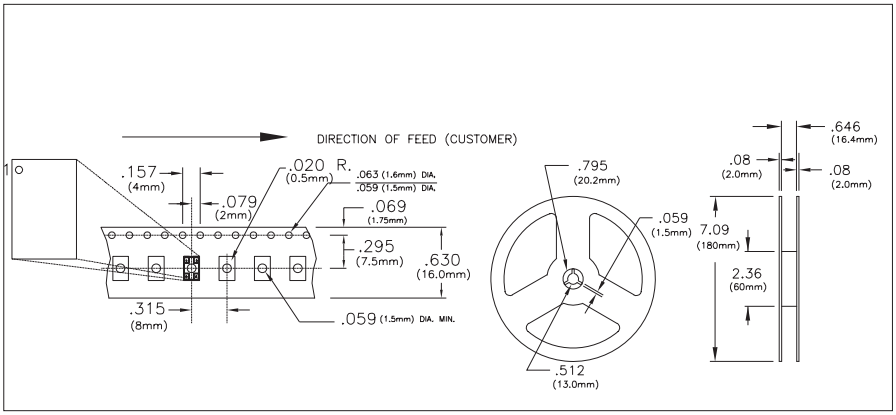


DNC = Do Not Connect
**NPO Grade Component

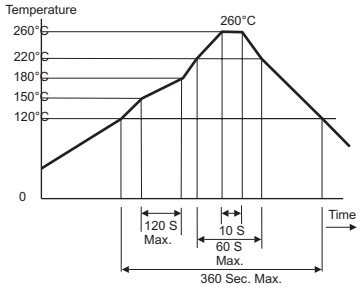
Output Waveform



Tape and Reel Information



Solder Profile



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