

Sub-Miniature Precision 5.0x3.2mm Clipped Sinewave TCXO In Stock at Digi-Key



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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 80°C temperature range.



Features

Model D53G

TCXO
3.3Vdc Operation
Clipped Sinewave Output Logic
Frequency Stability: ± 0.50 ppm
Temperature Range: -30 to 80°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 [$\pm(F_{max} - F_{min})/2.F_o$]	-0.50	-	0.50	ppm	2
Supply Voltage Variation (Vcc $\pm 5\%$)	-0.025	-	0.025	ppm	
Load Coefficient ($\pm 5\%$)	-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.



Bulletin Tx239

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Revision 01

Date 14 Nov 2008

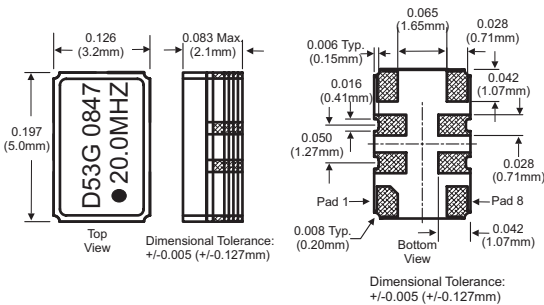
Package Characteristics

Package Ceramic Surface Mount Package.

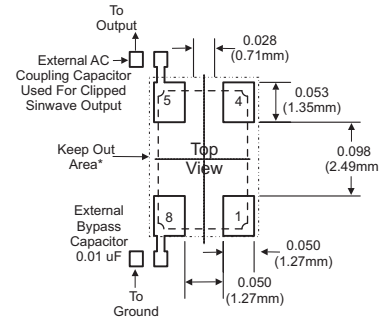
Environmental Characteristics

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

Package Layout

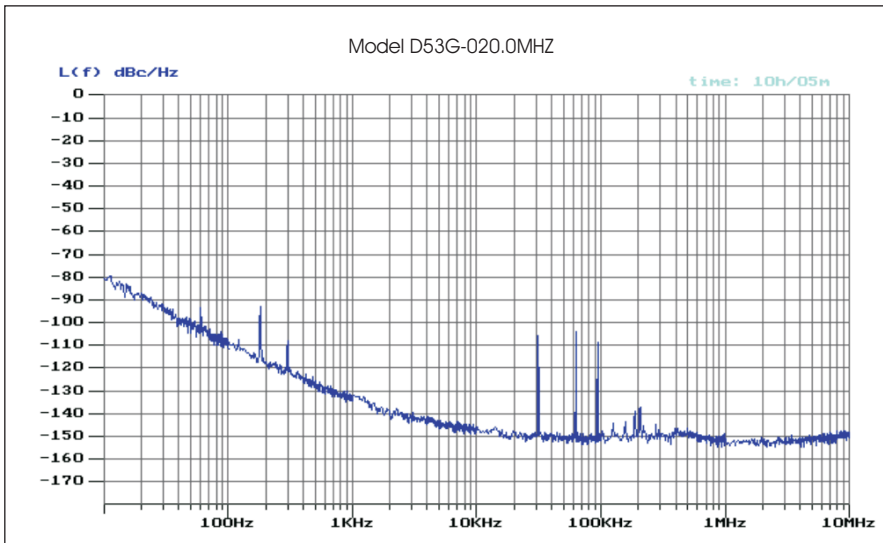


Suggested Pad Layout

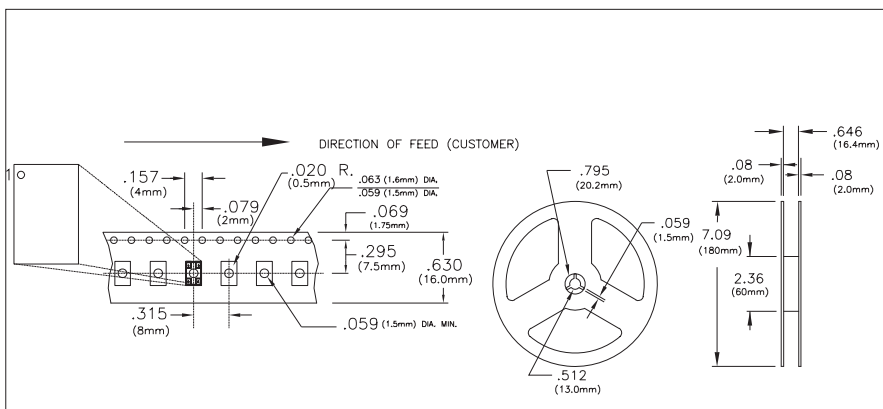


* Do not route any traces in the keep out area. It is recommended the next layer under the keep out area is to be ground plane.

Typical Phase Noise



Tape and Reel Information



Ordering Information

D53G - 020.0MHZ *

D53G - 026.0MHZ *

TCXO
SERIES

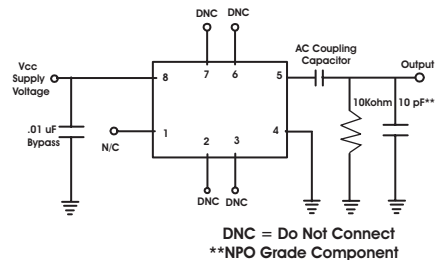
CENTER
FREQUENCY

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

Pin Connections

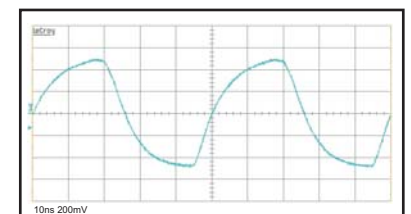
Pad	Connection
1	N/C
2	Do not connect
3	Do not connect
4	Ground
5	Output
6	Do not connect
7	Do not connect
8	Supply, Vcc

Test Circuit

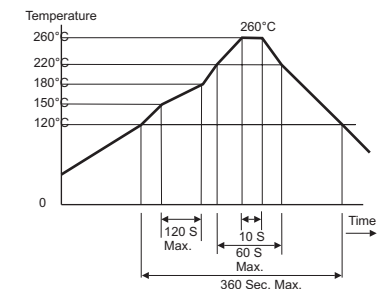


DNC = Do Not Connect
**NPO Grade Component

Output Waveform



Solder Profile



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