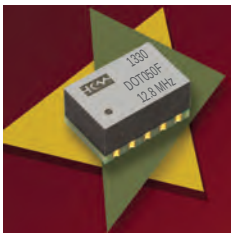
Precision TCXO / VCTCXO Models DOT050F / DOT050V

CONNOR WINFIELD

Description:

The Connor-Winfield's DOT050F / DOT050V are Surface Mount, 9x14mm, 3.3V, LVCMOS Temperature Compensated Crystal Oscillator (TCXO / VCTCXO) designed for applications requiring very tight frequency stability and low phase noise. The RoHS compliant true surface mount package is designed for high-density mounting and is optimum for mass production.



Features:

TCXO Model: DOT050F
VCTCXO Model: DOT050V

- 3.3 Vdc Operation
- Frequency Stability: ±50 ppb
- Temperature Range: 0 to 70°C
- LVCMOS Output Logic
- 9x14mm SMT Package
- Tape and Reel Packaging
- RoHS Compliant / Pb Free

Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-55	-	125	°C	
Supply Voltage (Vcc)	-0.5	-	4.5	Vdc	
Input Voltage	-0.5	-	Vcc+0.5	Vdc	

Absolute Ratings: Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only. The functional operation of the device at those or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to conditions outside the "recommended operating conditions" for any extended period of time may adversely impact device reliability and result in failures not covered by warranty.

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Frequencies Available (Fo)	-	10,12.8, 19.2 19.44 or 20	-	MHz	
Frequency Calibration @ 25 °C	-1.0	-	1.0	ppm	1
Frequency Stability	-50	-	50	ppb	2
Aging / Day	-10	-	10	ppb	3
Aging / First Year	-300	-	300	ppb	
Total Frequency Tolerance	-4.6	-	4.6	ppm	4
Frequency vs. Load Stability	-20	-	20	ppb	±5%, 5
Frequency vs. Voltage Stability	-20	-	20	ppb	±5%
Operating Temperature Range:	0	-	70	°C	
Supply Voltage (Vcc)	3.135	3.3	3.465	Vdc	±5%
Supply Current	-	6	10	mA	
Period Jitter	-	3	5	ps rms	
Integrated Phase Jitter (12 KHz to Fo/2)	-	0.5	1.0	ps rms	
Short Term Stability	-	-	1.0E-9/s		
SSB Phase Noise Fo = 12.8 MHz					
@ 1Hz offset	-	-70	-	dBc/Hz	
@ 10Hz offset	-	-100	-	dBc/Hz	
@ 100Hz offset	-	-130	-	dBc/Hz	
@ 1KHz offset	-	-148	-	dBc/Hz	
@ 10KHz offset	-	-154	-	dBc/Hz	
@ 100KHz offset	-	-155	-	dBc/Hz	
Start-up Time	-	-	10	ms	

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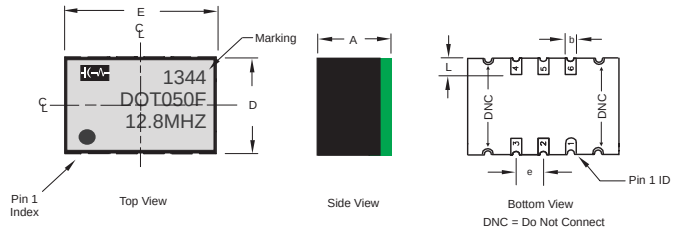
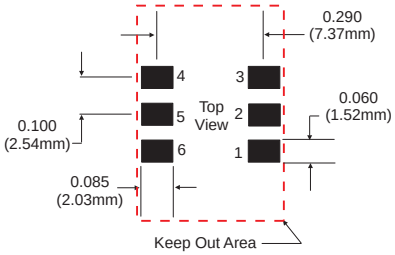
Package Layout



DNC = Do Not Connect

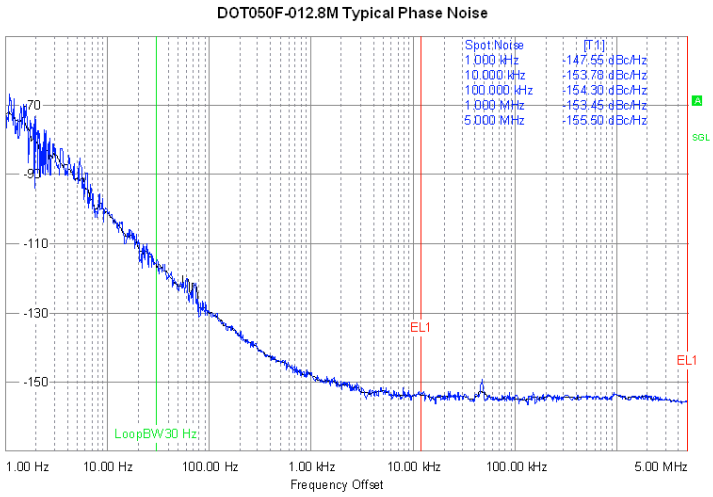
	mm			inches		
Symbol	Min	Nom.	Max.	Min	Nom.	Max.
A	6.60	6.73	6.86	0.260	0.265	0.270
D	8.89	9.02	9.15	0.350	0.355	0.360
E	13.34	13.47	13.60	0.545	0.550	0.555
A1	-	1.58	-	-	0.062	-
L	-	1.52	-	-	0.060	-
b	-	1.02	-	-	0.040	-
e	-	2.54	-	-	0.100	-

Suggested Pad Layout



Keep Out Area Note: Do not route any traces under the device in the keep out area.

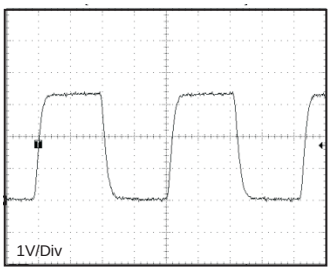
Phase Noise Plot



Pad Connections

1:	TCXO = N/C, VCTCXO =Vc
2:	Do Not Connect
3:	Ground
4:	Output
5:	Do Not Connect
6:	Supply Voltage (Vc)

Output Waveform



Test Circuit