



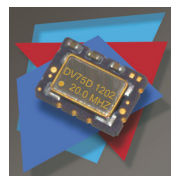
5x7mm Precision TCXO Model DV75D



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Description:

The Connor-Winfield's DV75D is a 5x7mm Surface Mount Temperature Compensated Crystal Controlled Oscillator (TCXO) with LVCMOS output. Through the use of Analog Temperature Compensation, the DV75D is capable of holding sub 1-ppm stabilities over the -40 to 85°C temperature range.



Features:

- TCXO
- 3.3 Vdc Operation
- LVCMOS Output
- Frequency Stability: ± 1.0 ppm
- Temperature Range: -40 to 85°C
- Low Jitter <1ps RMS
- 5x7mm Surface Mount Package
- Tape and Reel Packaging
- RoHS Compliant / Pb Free

Applications:

GR-253-CORE (SMC)
ITU-T-G.813 Option 1 and 2 (SEC)

Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-55	-	95	°C	
Supply Voltage (Vcc)	-0.6	-	4.6	Vdc	
Input Voltage	-0.5	-	Vcc+0.6	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Nominal Frequency (Fo)	-	10.0, 12.8, 20.0 or 50.0	-	MHz	
Frequency Calibration @ 25 °C 1		-1.0	-	1.0	ppm
Frequency Stability vs. Temperature	-1.0	-	1.0	ppm	2
Frequency vs. Load Stability	-0.05	-	0.05	ppm	$\pm 5\%$
Frequency vs. Voltage Stability $\pm 5\%$		-0.05	-	0.05	ppm
Static Temperature Hysteresis 3		-	-	0.4	ppm
Aging	-1.0	-	1.0	ppm/year	
Operating Temperature Range:		-40	-	85	°C
Supply Voltage (Vcc)	3.135	3.3	3.465	Vdc	$\pm 5\%$
Supply Current (Icc)	-	2.1	6	mA	
Period Jitter	-	3	5	ps rms	
Integrated Phase Jitter	-	0.3	1.0	ps rms	4
Typical Phase Noise Fo = 20.0 MHz					
SSB Phase Noise at 10Hz offset	-	-100	-	dBc/Hz	
SSB Phase Noise at 100Hz offset	-	-130	-	dBc/Hz	
SSB Phase Noise at 1KHz offset	-	-150	-	dBc/Hz	
SSB Phase Noise at 10KHz offset	-	-159	-	dBc/Hz	
SSB Phase Noise at 100KHz offset	-	-160	-	dBc/Hz	
Start-up Time	-	-	10	ms	

LVCMOS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	15	-	pF	5
Voltage (High) (Voh)	90%Vcc	-	-	Vdc	
(Low) (Vol)	-	-	10%Vcc	Vdc	
Duty Cycle at 50% of Vcc	45	50	55	%	
Rise / Fall Time 10% to 90%	-	4	8	ns	

Notes:

1. Initial calibration @ 25°C. Specifications at time of shipment after 48 hours of operation.
2. Frequency stability vs. change in temperature. $[\pm(F_{max} - F_{min})/(2 \cdot F_0)]$.
3. Frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25°C.
4. BW = 12 KHz to Fo/2 MHz.
5. For best performance it is recommended that the circuit connected to this output should have an equivalent input capacitance of 15pF.



Package Characteristics

Package	Ceramic Surface Mount Package.
Moisture Sensitivity Level	MSL-1.
Pad Termination Material and Plating	0.5-1.0um [20-40 micro-inches] Gold over 1.27um [50micro-inches] min Nickel.

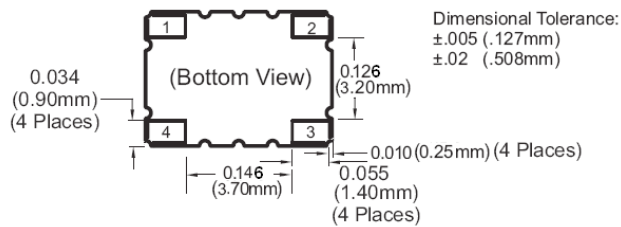
Environmental Characteristics

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 Process:	RoHS compliant lead free. See soldering profile on page 3.
Solderability:	Solderability per Mil Std 883E Method 2003.

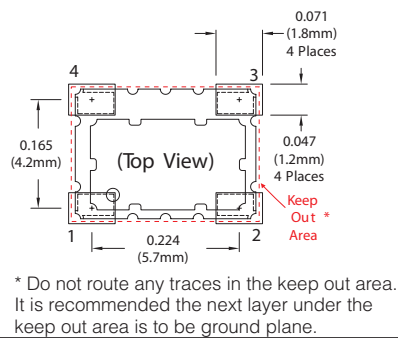
Ordering Information

DV75D-010.0M, DV75D-012.8M, DV75D-020.0M, or DV75D-050.0M

Package Layout



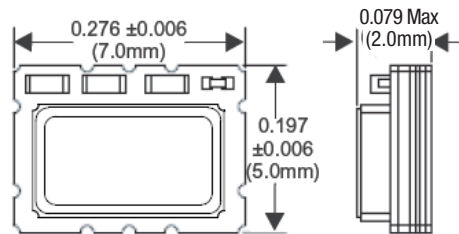
Suggested Pad Layout



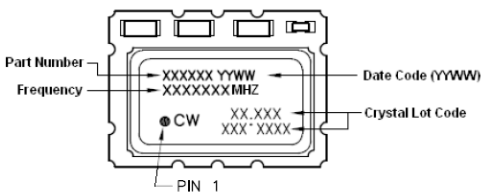
Pad Connections

1:	N/C
2:	Ground
3:	Output (Fo)
4:	Supply Voltage (Vcc)

Package Configuration #1



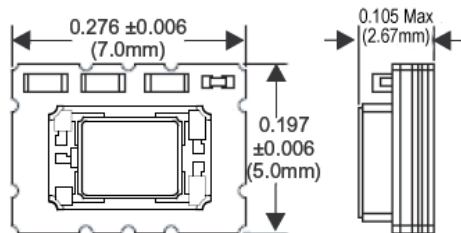
Marking Configuration



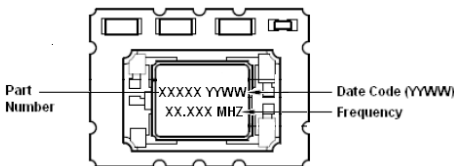
Frequencies

12.8M

Package Configuration #2



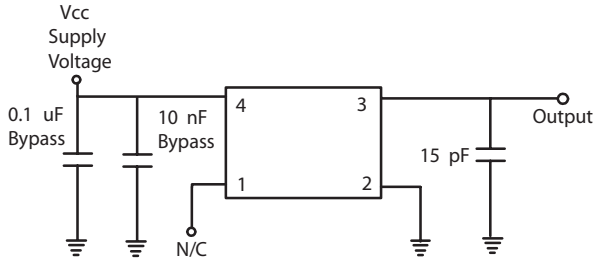
Marking Configuration



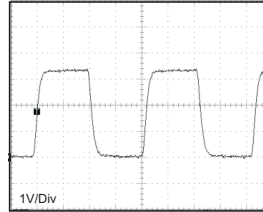
Frequencies

10M
20M
50M

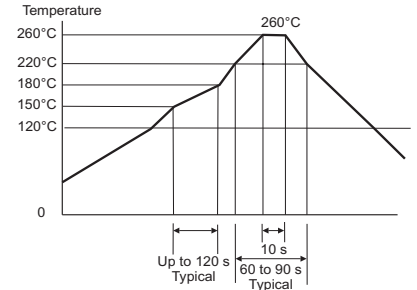
Test Circuit



Output Waveform

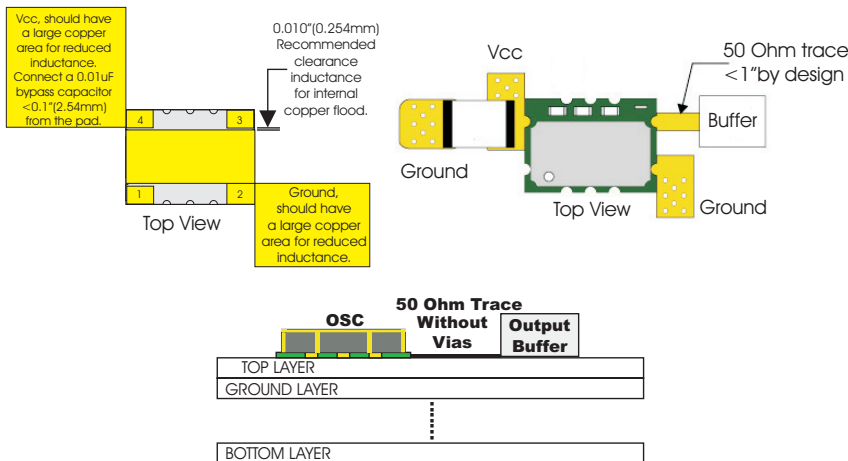


Solder Profile



Meets IPC/JEDEC J-STD-020C

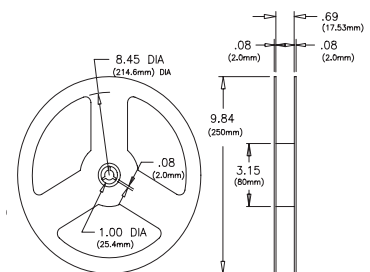
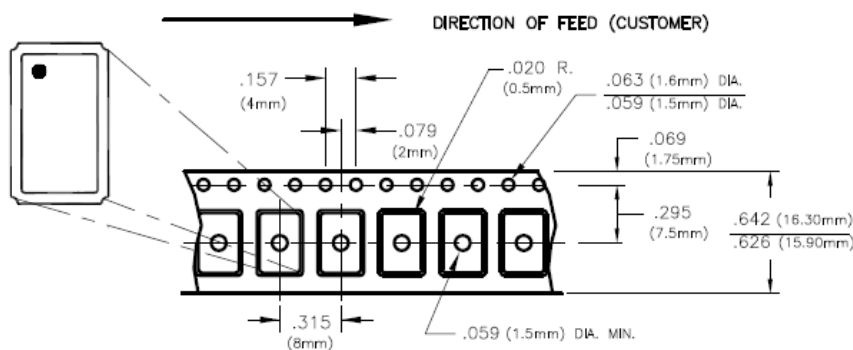
Design Recommendations



Attention: To achieve optimal frequency stability, and in some cases to meet the specification stated on this data sheet, it is required that the circuit connected to this TCXO output must have the equivalent input capacitance that is specified by the nominal load capacitance. Deviations from the nominal load capacitance will have a graduated effect on the stability of approximately 20 ppb per pF load difference.

Tape and Reel Dimensions

MEETS EIA-481A AND EIAJ-1009B
1000 PCS/REEL Max (Package Configuration 1)
700 PCS/REEL Max (Package Configuration 2)



Revision History

Revision	Date	Note
00	01/11/12	New issue
01	11/26/12	Removed tri-state information from features and description.
02	04/15/13	Added "Applications."
03	12/03/13	Removed TR from Ordering Information.
04	06/11/19	Updated stability, supply current, phase noise and height specifications.
05	11/21/23	Updated Supply Voltage (Vcc)
06	08/12/25	Add 50MHz, update package drawings, phase noise, and Abs Max ratings.

Bulletin	Tx356
Page	3 of 3
Revision	06
Date	12 Aug 2025