



THE DATASHEET OF DV75C-040.0M



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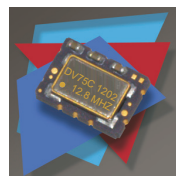
5x7mm Precision TCXO Model DV75C

**CONNOR
WINFIELD**



Description:

The Connor-Winfield's DV75C is a 5x7mm Surface Mount Temperature Compensated Crystal Controlled Oscillator (TCXO) with LVCMOS output. Through the use of Analog Temperature Compensation the DV75C is capable of holding sub 1-ppm stabilities over the -40 to 85°C temperature range. The DV75C meets STRATUM 3 requirements.



Features:

- 3.3 Vdc Operation
- LVCMOS Output
- Frequency Stability: ± 0.28 ppm
- Temperature Range: -40 to 85°C
- Low Jitter <1ps RMS
- 5x7mm Surface Mount Package
- Tape and Reel Packaging
- RoHS Compliant / Pb Free

Applications:

- IEEE 1588 Applications
- Synchronous Ethernet slave clocks, ITU-T G.8262 EEC options 1 & 2
- Compliant to Stratum 3, GR-1244-CORE, GR-253-CORE & ITU-T-G.812 Type IV
- Wireless Communications
- Small Cells
- Test and Measurement

Absolute Maximum Ratings

Parameter	Minimum	Nominal	Maximum	Units	Notes
Storage Temperature	-55	-	85	°C	
Supply Voltage (Vcc)	-0.6	-	4.6	Vdc	
Input Voltage	-0.5	-	Vcc+0.5	Vdc	

Operating Specifications

Parameter	Minimum	Nominal	Maximum	Units	Notes
Nominal Frequencies (Fo) available	10.0, 12.8, 20.0, 25.0 and 40.0			MHz	
Frequency Calibration @ 25 °C	-1.0	-	1.0	ppm	1
Frequency Stability vs. Temperature	-0.28	-	0.28	ppm	2
Holdover Stability (Over 24 Hours)	-0.32	-	0.32	ppm	3
Frequency vs. Load Stability	-0.05	-	0.05	ppm	$\pm 5\%$
Frequency vs. Voltage Stability	-0.05	-	0.05	ppm	$\pm 5\%$
Static Temperature Hysteresis	-	-	0.4	ppm	4
Total Frequency Tolerance:	-4.6	-	4.6	ppm	5
Operating Temperature Range:	-40	-	85	°C	
Supply Voltage (Vcc)	3.135	3.3	3.465	Vdc	$\pm 5\%$
Supply Current (Icc)	-	-	6	mA	
Period Jitter	-	3	5	ps rms	
Integrated Phase Jitter	-	0.5	1.0	ps rms	6
Typical Phase Noise Fo = 10.0 MHz					
SSB Phase Noise at 10Hz offset	-	-99	-	dBc/Hz	
SSB Phase Noise at 100Hz offset	-	-122	-	dBc/Hz	
SSB Phase Noise at 1KHz offset	-	-145	-	dBc/Hz	
SSB Phase Noise at 10KHz offset	-	-152	-	dBc/Hz	
SSB Phase Noise at 100KHz offset	-	-153	-	dBc/Hz	
Start-up Time	-	-	10	ms	

LVCMOS Output Characteristics

Parameter	Minimum	Nominal	Maximum	Units	Notes
Load	-	15	-	pF	7
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%	-	-	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. $[(F_{max} - F_{min}) / (2 \cdot F_0)]$.
3. Inclusive of frequency stability, supply voltage change ($\pm 1\%$), load change, aging, for 24 hours.
4. Frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25°C.
5. Inclusive of calibration @ 25°C, frequency vs. change in temperature, change in supply voltage ($\pm 5\%$), load change ($\pm 5\%$), reflow soldering process and 20 years aging, referenced to Fo
6. BW = 12 KHz to Fo/2 MHz.
7. For best performance it is recommended that the circuit connected to this output should have an equivalent input capacitance of 15pF.



Package Characteristics

Package	Hermetically sealed crystal mounted on a ceramic package
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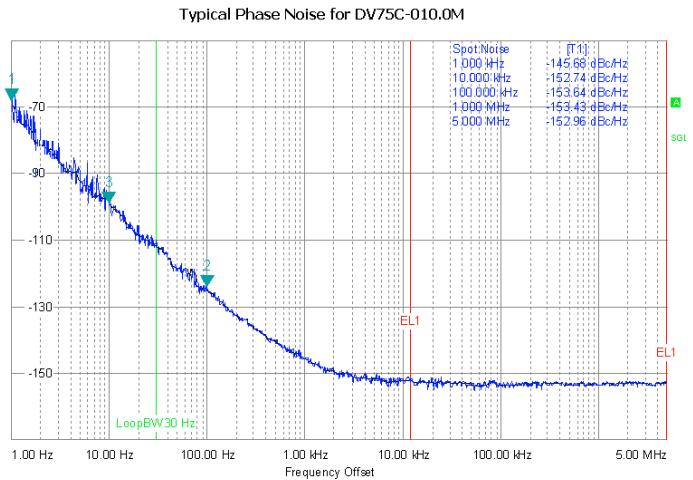
Environmental Characteristics

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.

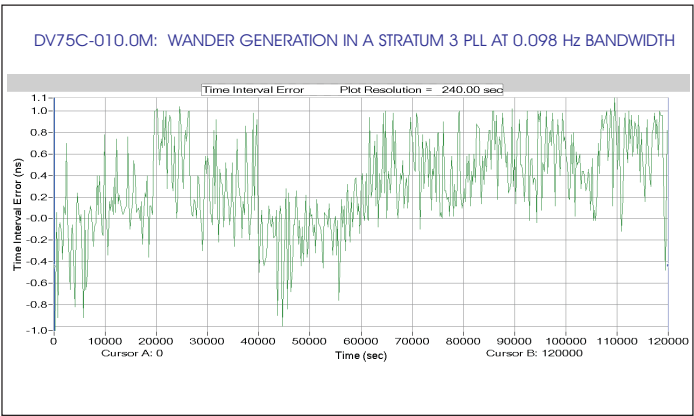
Ordering Information

DV75C-010.0M, DV75C-012.8M, DV75C-020.0M, DV75C-025.0M, DV75C-040.0M

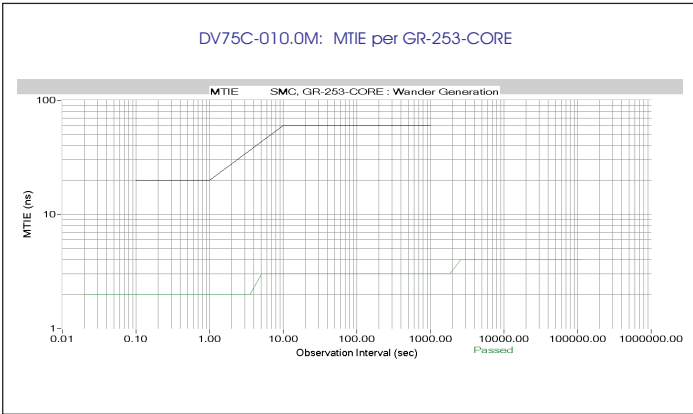
Phase Noise Information



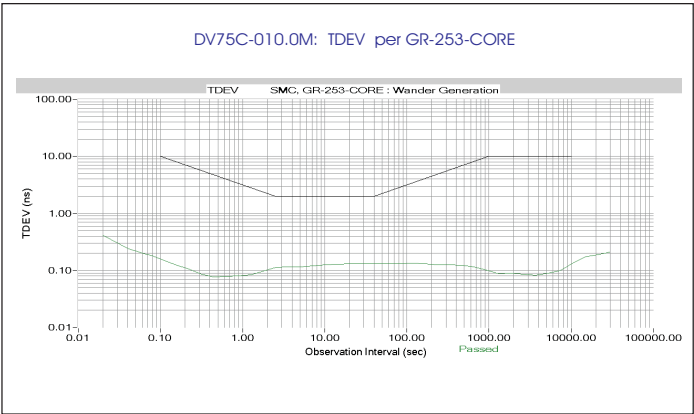
TIE



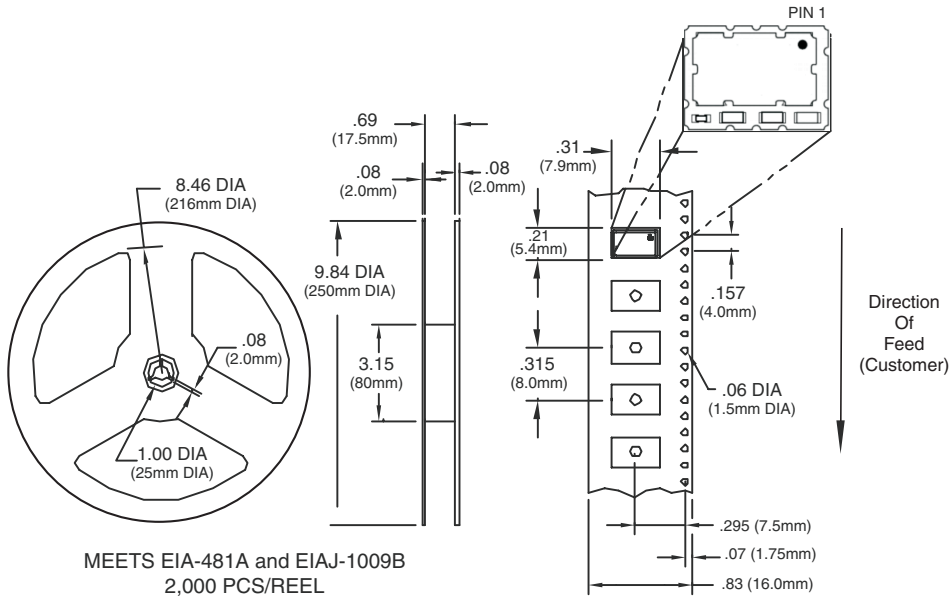
MTIE



TDEV



Tape and Reel Dimensions



Revision History

Revision	Date	Note
00	01/11/12	Data sheet released
01	11/26/12	Removed tri-state information from features and description.
02	04/15/13	Added "Applications", Phase noise, TIE, MTIE and TDEV plots.
03	12/03/13	Removed TR information from Ordering Information.
04	04/01/15	Add frequencies and update to Phase Noise Plot and Operating Specs
05	11/01/16	Clarify frequencies to which alternate package height applies, and added dimensions to bottom view.
06	11/10/16	Update Static Temperature Hysteresis note and Soldering Process information.
07	11/21/23	Updated Supply Voltage (Vcc)

Bulletin	Tx355
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Revision	07
Date	21 Nov 2023

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- ✓ Shortage Management
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- ✓ Excess Inventory Management