Dynamic Engineers Inc.
2550 Gray Falls Dr., Suite#128, Houston, TX, 77077 USA
TEL: 1-281-870-8822 EMAIL:Sales@DynamicEng.com

TCXO7501BTLG
Low G-sensitive, vibration and shock resistant TCXO

Features and Benefits
High frequency stability (up to ±0.5ppm over -40°C to +85°C)
(LV)CMOS and clipped sine wave Output
SMD Miniature package

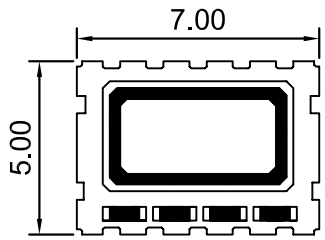
Typical Applications
UHF Synthesizers
SATCOM System
Portable Microwave Applications

Description
TCXO7501BTLG offers wide temperature operation from -40°C to +85°C with outstanding frequency stability and low phase noise performance.

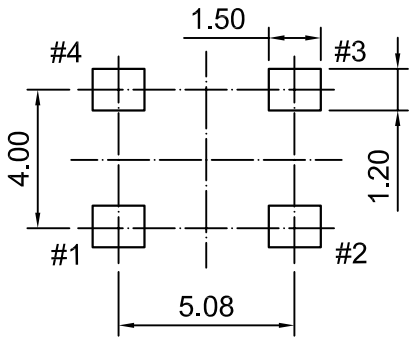
Mechanical Drawing & Pin Connections

Drawing No: MD150004-6

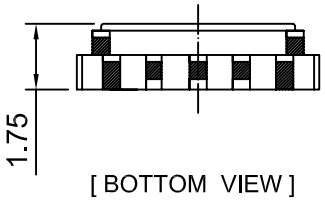
[TOP VIEW]



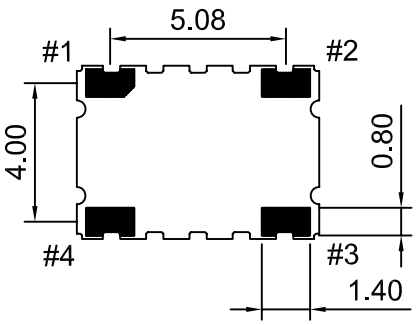
[Solder pattern]



[SIDE VIEW]



[BOTTOM VIEW]



PIN	FUNCTION
#1	Vc or N.C.*
#2	GND
#3	RF output
#4	Vdc

*Vc(Control Voltage) for VC-TCXO
GND or N.C. for TCXO

Unit in mm
1mm = 0.0394 inches

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Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F_{nom}		5		100	MHz	
Standard frequencies (fundamental)			10, 12, 13, 15.36, 16.368, 20, 25, 27, 30, 32.512, 40, 50, 70, 77.76, 80 and 100			MHz	
Output			Clipped sine wave		(LV)CMOS		
Output Level			>0.8Vp-p		VOH > 0.9∗Vcc / VOL < 0.1∗Vcc		
Output load			10 kΩ // 10 pF		15 pF Max.		
Current consumption, depending on frequency			1.5 ~ 7 mA		2 ~ 10 mA		
Power Supply							
Voltage	V_{cc}	±5%	+2.8 V, +3.3 V or +5.0 V			V	
Frequency Control*							
Control voltage range	V_c		+1.50 V ±1.0 V for 3.3 V +2.50 V ±2.0 V for 5.0 V			V	
Electronic Frequency Control (EFC)			ΔF = ±5 to ±10 ppm				Slope Positive
Control voltage input impedance			100			kohm	
Frequency Stability							
Versus temperature		-40°C to 85°C, ref to (fmax+fmin)/2			±0.5	ppm	
Versus supply voltage changes referenced to frequency at nominal supply		±5%			±0.1	ppm	
Versus load changes referenced to frequency at nominal load		±5%			±0.1	ppm	
G-sensitivity		per axis		0.25		ppb/g	
Tolerance at 25°C			0		+1.0	ppm	
First Year Aging		@+40°C			±1.0	ppm	
Phase noise(typical value for 40 MHz)		10 Hz		-90		dBc/Hz	
		100 Hz		-118			
		1000 Hz		-140			
		10 KHz		-151			
		100 KHz		-156			
Environmental Conditions							
Operating temperature range	-40°C to 85°C						
Storage temperature range	-55°C to 105°C						
Reflow Profiles	≤ 260 °C over 10 sec. Max. as per IPC/JEDEC J-STD-020C						
Moisture sensitivity	Level 1(unlimited)						

Frequency Stability vs. Temperature

	±0.25PPM	±0.5PPM	±1.0PPM	±1.5PPM
-20°C to +70°C	Conditional	Available	Available	Available
-40°C to +85°C	Conditional	Available	Available	Available
-40°C to +95°C	Conditional	Conditional	Conditional	Available
-40°C to +105°C	Conditional	Conditional	Conditional	Conditional
-55°C to +85°C	Not Available	Conditional	Conditional	Conditional

G-Sensitivity performance

Noise shape vibration from 20-2'000 Hz
with 0.1 g²/Hz (G_{RMS} = 14.11g) for the axis

Ordering Information

TCXO7501BTLG	-	10MHz	-	01	02	03	04	05	06	07
Group										

For example, TCXO7501BTLG -10MHz-1-1-2-3-1-3-5 denotes the TCXO has the following specifications:

TYPE: TCXO
Output: CMOS
Supply Voltage: 3V
Pulling Range: 2.5V±2.0V, ±5PPM
Temperature range: -20C to +70C
Frequency stability: ±1ppm
G-sensitivity: 1.5PPB/G

01	**Type**
Code	Specification
1	TCXO
2	VC-TCXO

02	**Output**
Code	Specification
1	(LV)CMOS
2	Clipped sine wave

03	**Voltage**
Code	Specification
1	2.8V
2	3.0V
3	3.3V
4	5.0V

04	**Pulling range (VCTCXO only)**
Code	Specification
1	1.5 ± 1.0 V ±5 ppm
2	1.5 ± 1.0 V ±10 ppm
3	2.5 ± 2.0 V ±5 ppm
4	2.5 ± 2.0 V ±10 ppm

05	**Temperature Range**
Code	Specification
1	-20°C to +70°C
2	-40°C to +85°C
3	-40°C to +95°C
4	-40°C to +105°C
5	-55°C to +85°C

06	**Frequency Stability**
Code	Specification
1	± 0.25 ppm
2	± 0.50 ppm
3	± 1.00 ppm
4	± 1.50 ppm

07	**G-sensitivity per axis**
Code	Specification
1	0.10 ppb/g
2	0.25 ppb/g
3	0.50 ppb/g
4	1.00 ppb/g
5	1.50 ppb/g
6	special spec