## Dynamic Engineers Inc.

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

#### **Features and Benefits**

Frequency range: 25MHz Supply voltage: 3.3V Current: 10mA Max.

Frequency stability vs. temperature: ±100PPM

Aging: ±3PPM 1st year

Operating temperature: -40°C to +85°C

Size: 2.5x2.0x0.9 mm

#### **Typical Applications**

- Wearable device
- Sport Video Cams
- Ultra-small Notebook PC
- Mobile Phones
- -Digital Circuit

#### **Description**

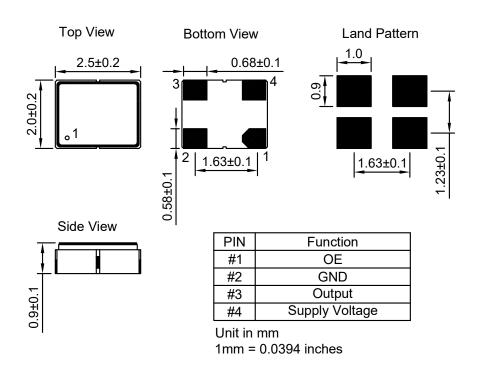
XO2520BL-ULJ\_CMOS-25MHz-233 is the ultra-low jitter crystal oscillator.

The RMS phase jitter can be 48fs typical. It can be widely used in the digital circuit and communication applications.

### **Mechanical Drawing & Pin Connections**

Drawing No:

MD230031-1





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XO2520BL-ULJ\_CMOS-25MHz-&' ' WdæES[¸ÁRāic^\/iÔ\^•œ#ÁJ•&ā|æŧ ¦Á

## **Specifications**

Operational Frequency   fo	Oscillator	Sym	Condition	Value			Unit	Note	
RF Output   Load	•			Min.		Max.			
Output Level High		f <sub>0</sub>			25		MHz		
Output Level High         2.97         V           Output Level Low         0.33         V           Rise / Fall Time         @10%-90% of V <sub>cc</sub> 1.5         5         ns           Duty Cycle         45         55         %           Startup Time         0.8         5         ms           Output Enable/Disable Function on PIN1         Disable output         30%V <sub>cc</sub> V           Enable Disable Time         Enable Disable         1         ms           Power Supply         Enable Disable         1         ms           Power Supply         Vcc         ±10%         3.3         V           Current With Output Disable Disable         9         35         uA           Prequency Stability         9         35         uA           Frequency Stability           Supply Voltage Vs. Frequency Sensitivity         @25°C         ±1.0         ppm           Aging@+25°C         1st year         ±3.0         ppm           Aging@+25°C         1st year         ±68         dBc/Hz           100Hz         -68         dBc/Hz           100Hz         -166         dBc/Hz           100KHz         -166         dBc/Hz									
Output Level Low         0.33         V           Rise / Fall Time         @10%-90% of Vcc         1.5         5         ns           Duty Cycle         45         55         %           Startup Time         0.8         5         ms           Output Enable/Disable Function on PIN1         Disable output         30%Vcc         V           Enable Disable Time         Enable Disable         1         ms           Power Supply         Disable         200         ns           Power Supply         7         10         mA           Current With Output Disable         7         10         mA           Current With Output Disable         9         35         uA           Frequency Stability           Supply Voltage Vs. Frequency Sensitivity         @25°C         ±1.0         ppm           Vs. Temperature         @-40°C to +85°C         ±100         ppm           Aging@+25°C         1st year         ±3.0         ppm           Aging@+25°C         1st year         ±3.0         ppm           IKHz         -139         48         300         fs           SSB phase noise         10KHz         -166         -166         -166         -16					15				
Rise / Fall Time				2.97			-		
Duty Cycle   Startup Time   Duty Use   Startup Time   Duty tenable/Disable   Enable output   T0%Vcc   V   V   Startup Time   Disable output   T0%Vcc   V   V   V   Startup Time   Disable output   T0%Vcc   V   V   V   Startup Time   Disable output   T0%Vcc   V   V   V   V   V   V   V   V   V							V		
Startup Time			@10%-90% of Vcc		1.5	_			
Output Enable/Disable Function on PIN1         Enable output         70%Voc         V           Enable/Disable Time         Disable output         30%Voc         V           Enable/Disable Time         Disable         1         ms           Power Supply         Disable         200         ns           Voltage         V∞         ±10%         3.3         V           Current         7         10         mA           Current With Output Disable         9         35         uA           Frequency Stability           Supply Voltage Vs. Frequency Sensitivity         @25°C         ±1.0         ppm           Vs. Temperature         @-40°C to +85°C         ±100         ppm           Aging@+25°C         10Hz         -68         -68           100Hz         -102         -102           1KHz         -139         dBc/Hz           10KHz         -157         dBc/Hz           10KHz         -157         -166           1MHz         -166         -170           1MHz         -166         -170           1MHz         -168         -168           5MHz         5MHz         -168           10xHz				45			%		
Disable output   Benable   Benable					0.8	5			
Enable   Disable   Disab				70%V <sub>cc</sub>					
Disable   Disa	Function on PIN1					30%V <sub>cc</sub>	V		
Disable   200    ns						1	ms		
Voltage         V <sub>cc</sub> ±10%         3.3         V           Current         7         10         mA           Current With Output Disable         9         35         uA           Frequency Stability           Supply Voltage Vs. Frequency Sensitivity         @25°C         ±1.0         ppm           Vs. Temperature         @-40°C to +85°C         ±100         ppm           Aging@+25°C         1st year         ±3.0         ppm           Aging@+25°C         10Hz         -68         -68           100Hz         -102         -102           1KHz         -139         -102           1KHz         -139         -157           10KHz         -157         -166           10KHz         -170         -166           1MHz         -166         -168           RMS Jitter (12KHz-20MHz)         48         300         fs           Environmental Conditions           Operating temperature range         -40°C to +85°C			Disable			200	ns		
Current	Power Supply								
Current With Output Disable         9         35         uA           Frequency Stability           Supply Voltage Vs. Frequency Sensitivity         @25°C         ±1.0         ppm           Vs. Temperature         @-40°C to +85°C         ±100         ppm           Aging@+25°C         1st year         ±3.0         ppm           Aging@+25°C         10Hz         -68         -68           10Hz         -68         -102           1KHz         -139         -18           10KHz         -157         -157           10KHz         -170         -166           1MHz         -166         -168           RMS Jitter (12KHz-20MHz)         48         300         fs           Environmental Conditions           Operating temperature range         -40°C to +85°C	Voltage	Vcc	±10%		3.3		V		
Disable         9         35         UA           Frequency Stability           Supply Voltage Vs. Frequency Sensitivity         @ 25°C         ±1.0         ppm           Vs. Temperature         @ -40°C to +85°C         ±100         ppm           Aging@+25°C         1st year         ±3.0         ppm           10Hz         -68         -68           100Hz         -102         -102           1KHz         -139         -139           SSB phase noise         10KHz         -157         dBc/Hz           10MHz         -166         -170           1MHz         -166         -168           RMS Jitter (12KHz-20MHz)         48         300         fs           Environmental Conditions           Operating temperature range         -40°C to +85°C	Current				7	10	mA		
Disable   Supply Voltage Vs.   @25°C   ±1.0   ppm	Current With Output				0	25			
Supply Voltage Vs. Frequency Sensitivity         @ 25°C         ±1.0         ppm           Vs. Temperature         @ -40°C to +85°C         ±100         ppm           Aging@+25°C         1st year         ±3.0         ppm           Aging@+25°C         10Hz         -68         -68           10Hz         -102         -102           1KHz         -139         -139           SSB phase noise         10KHz         -157         dBc/Hz           100KHz         -170         -166         -166           1MHz         -166         -168         -168           RMS Jitter (12KHz-20MHz)         48         300         fs           Environmental Conditions         -40°C to +85°C         -40°C to +85°C					9	33	uA		
Frequency Sensitivity									
Frequency Sensitivity         #100         ppm           Vs. Temperature         @-40°C to +85°C         #100         ppm           Aging@+25°C         1st year         #3.0         ppm           10Hz         -68         100Hz         -102           1KHz         -139         48         48           SSB phase noise         10KHz         -157         48           10KHz         -166         48         300         fs           RMS Jitter (12KHz-20MHz)         48         300         fs           Environmental Conditions         -40°C to +85°C         40°C to +85°C			@25°C			+1.0	nnm		
Aging@+25°C	Frequency Sensitivity		@20 0			11.0	ррт		
10Hz	· ·		@-40°C to +85°C			±100	ppm		
100Hz	Aging@+25°C					±3.0	ppm		
SSB phase noise	·						dBc/Hz		
SSB phase noise									
100KHz									
1MHz					-157				
RMS Jitter (12KHz-20MHz)  Environmental Conditions  Operating temperature range  -40°C to +85°C									
RMS Jitter (12KHz-20MHz)  Environmental Conditions  Operating temperature range  -40°C to +85°C									
(12KHz-20MHz)  Environmental Conditions  Operating temperature range -40°C to +85°C			5MHz		-168				
Environmental Conditions Operating temperature range -40°C to +85°C					48	300	fe		
Operating temperature range -40°C to +85°C					70	300	13		
Storage temperature range   -55°C to +150 °C									
	Storage temperature range	Э	-55°C to +150 °C						