Ultra-low Power Crystal Oscillator

Features and Benefits

Frequency range: 10MHz Supply voltage: 0.9V Current: 1.5mA Max.

Frequency stability vs. temperature: ±50PPM

Aging: ±3PPM per year

Operating temperature: -10°C to +60°C

Size: 3.2x2.5x0.95 mm

Typical Applications

loT Smartphone Digital Camera Game Console Wearable Device Digital Consumer Electronics

Description

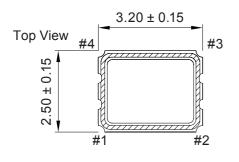
XO3225BM01-LP-10MHz-121 is the low power crystal oscillator.

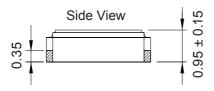
The power consumption can be less than 1.5mA. It can be widely used in the low power consumption applications.

Mechanical Drawing & Pin Connections

Drawing No:

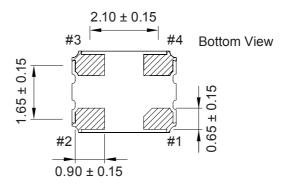
MD220023-1



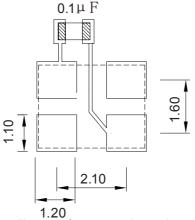


Pin#	Function				
1	Tri-state				
2	GND				
3	Output				
4	Vcc				

Unit in mm 1mm = 0.0394 inches



Recommended Soldering Pattern



1.20 To ensure optimal oscillator performance, place a by-pass capacitor of 0.1uF as close to the part as possible between Vcc and GND PAD



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XO3225BM01-LP-10MHz-121

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Specifications

Specification Min. Typ. Max.	Oscillator	Sy	Condition	Value			Unit	Note
No No No No No No No No				Min.		Max.		
Output level High 2.97 V Load Low 0.33 V Duty Cycle 45 55 % Rise & Fall Time measured between 10% and 90% of Vcc, with an output load of 15pF 4 ns Fri-State (Input to Pin1) Enable (High voltage or floating) (Low voltage or GND) 0.7 Vcc V Startup Time 4 ms Power Supply Voltage Vcc ±5% 0.9 V Current No load condition 0.9 mA Stand by Current No load condition 0.9 mA Stand by Current ©-10°C to +60°C ±50 ppm Period jitter (Pk-Pk) 40 ps RMS phase jitter Integrated 12KHz to 20MHz 1 ps Aging@+25°C 1st year ±3.0 ppm Environmental Conditions -10°C to +60°C -10°C to +60°C		f ₀			10		MHz	
High Low Duty Low Duty Low Duty Cycle Low Duty Cyc		,						
Low	Output Waveform				CMOS			
Low			High	2.97				
Duty Cycle			Low			0.33	•	
Measured between 10% and 90% of Vcc, with an output load of 15pF					15			
Rise & Fall Time	Duty Cycle			45		55		
Tri-State (Input to Pin1) (High voltage or floating) 0.7 Vcc V Startup Time Disable (Low voltage or GND) 0.3 Vcc V Startup Time 4 ms Power Supply Voltage Vcc ±5% 0.9 V Current At 15pF load 1.5 mA MA Stand by Current No load condition 0.9 mA MA Stand by Current 100 uA UA Frequency Stability Versus Temperature @-10°C to +60°C ±50 ppm Period jitter (Pk-Pk) 40 ps RMS phase jitter 20MHz 1 ps Aging@+25°C 1st year ±3.0 ppm Environmental Conditions -10°C to +60°C	Rise & Fall Time		and 90% of Vcc, with an output load of 15pF			4	ns	
Clow voltage or GND Clow voltage V V V V V V V V V			(High voltage or floating)	0.7 V _{cc}			V	
Power Supply Voltage V _{cc} ±5% 0.9 V Current At 15pF load 1.5 mA Stand by Current 0.9 mA Stand by Current 100 uA Frequency Stability Versus Temperature @-10°C to +60°C ±50 ppm Period jitter (Pk-Pk) 40 ps RMS phase jitter 1 ps Aging@+25°C 1st year ±3.0 ppm Environmental Conditions -10°C to +60°C						0.3 V _{cc}	V	
Voltage V _∞ ±5% 0.9 V Current At 15pF load 1.5 mA No load condition 0.9 mA Stand by Current 100 uA Frequency Stability Versus Temperature @-10°C to +60°C ±50 ppm Period jitter (Pk-Pk) 40 ps RMS phase jitter Integrated 12KHz to 20MHz 1 ps Aging@+25°C 1st year ±3.0 ppm Environmental Conditions -10°C to +60°C						4	ms	
Current At 15pF load 1.5 mA No load condition 0.9 mA Stand by Current 100 uA Frequency Stability Versus Temperature @-10°C to +60°C ±50 ppm Period jitter (Pk-Pk) 40 ps RMS phase jitter Integrated 12KHz to 20MHz 1 ps Aging@+25°C 1st year ±3.0 ppm Environmental Conditions -10°C to +60°C								
Stand by Current Frequency Stability Versus Temperature Q-10°C to +60°C Period jitter (Pk-Pk) RMS phase jitter Aging@+25°C Environmental Conditions O.9 mA 100 uA **Example 100 uA **	Voltage	V_{cc}			0.9		•	
Stand by Current 100 uA Frequency Stability Versus Temperature @-10°C to +60°C								
Frequency Stability Versus Temperature @-10°C to +60°C ±50 ppm Period jitter (Pk-Pk) 40 ps RMS phase jitter Integrated 12KHz to 20MHz 1 ps Aging@+25°C 1st year ±3.0 ppm Environmental Conditions Operating temperature range -10°C to +60°C			No load condition					
Versus Temperature @-10°C to +60°C ±50 ppm Period jitter (Pk-Pk) 40 ps RMS phase jitter Integrated 12KHz to 20MHz 1 ps Aging@+25°C 1st year ±3.0 ppm Environmental Conditions Operating temperature range -10°C to +60°C	· ·					100	uA	
Period jitter (Pk-Pk) RMS phase jitter Aging@+25°C Environmental Conditions Operating temperature range -10°C to +60°C	Frequency Stability	T			<u> </u>	ı		
RMS phase jitter Aging@+25°C Integrated 12KHz to 20MHz Aging@+25°C Ist year Environmental Conditions Operating temperature range -10°C to +60°C	Versus Temperature		@-10°C to +60°C			±50	ppm	
Aging@+25°C	Period jitter (Pk-Pk)					40	ps	
Environmental Conditions Operating temperature range -10°C to +60°C	RMS phase jitter		•			1	ps	
Operating temperature range -10°C to +60°C	Aging@+25°C		1 st year			±3.0	ppm	
	Environmental Conditio	ns						
Storage temperature range -55°C to +125°C	Operating temperature range -10°C to +60°C							
	Storage temperature range	ge	-55°C to +125°C					