



### Features and Benefits

- Frequency range: 50MHz
- Supply voltage: 3.3V
- Current: 15mA Max.
- Frequency stability vs. temperature: ±25PPM
- Aging: ±3PPM per year
- Operating temperature: -40°C to +85°C
- Size: 2.5x2.0x0.81 mm

### Typical Applications

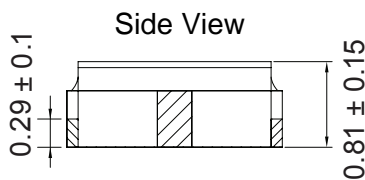
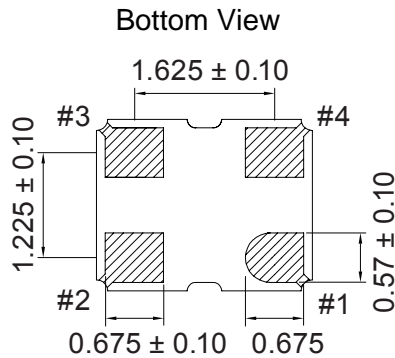
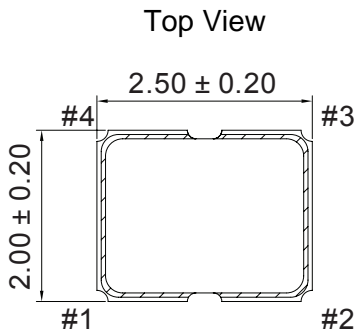
- IoT
- Smartphone
- Digital Camera
- Game Console
- Wearable Device
- Digital Consumer Electronics

### Description

XO2520BM-50MHz-A is the low power crystal oscillator. The power consumption can be less than 15mA. It can be widely used in the low power consumption applications.

### Mechanical Drawing & Pin Connections

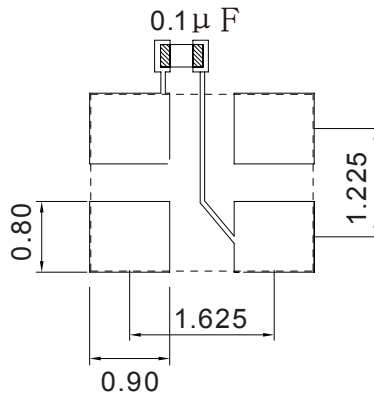
Drawing No: MD220022-1



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

Unit in mm  
1mm = 0.0394 inches

### Recommended Soldering Pattern



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



**Specifications**

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	f <sub>0</sub>			50		MHz	
<b>RF Output</b>							
Output Waveform			CMOS				
Load					15	pF	
Output High(Logic "1")			0.9V <sub>cc</sub>			V	
Output Low(Logic "0")					0.1V <sub>cc</sub>	V	
Duty Cycle			45	50	55	%	
Rise & Fall Time					3	ns	
Tri-State		Output enable	0.7 V <sub>cc</sub>			V	High or floating (*Note1): Enable frequency output
		Output disable and High-Impedance			0.3 V <sub>cc</sub>	V	Low: Disable frequency output
Startup Time					2	ms	
<b>Power Supply</b>							
Voltage	V <sub>cc</sub>		2.97	3.3	3.63	V	
Current		At maximum supply voltage			15	mA	
Stand by Current		OE pin Low and disable frequency output			10	uA	
<b>Frequency Stability</b>							
Overall		Frequency stability includes frequency tolerance@25°C and frequency stability vs. operating temperature range and voltage variance.	-25		+25	ppm	
Aging		Frequency drift in first year @ 25°C	-3.0		+3.0	ppm	
<b>Environmental Conditions</b>							
Operating temperature range	-40°C to +85°C; The operating temperature range over which the frequency stability is measured.						
Storage Temperature range	-55°C to +125°C						
Thermal Shock	MIL-STD-883H 1010.8 Condition B; -55°C, 125°C; soak time is 10 mins, with total 200 cycles						
Damp Heat	JESD22-A101; 85°C /85% RH for 500 hrs						
Low Temp Storage	IEC 60068-2-1; -55°C for 500 hrs						
Drop Test	IEC 60068-2-32; 70, 80, 100cm, each height for 3 times on hardboard						
Mechanical Shock	MIL-STD-883H 2002.5 Condition B; 1500g, half-sine, 0.5ms, each axis for 3 times.						
Vibration Test	MIL-STD-883H 2007.3 Condition A; 10~2000Hz, 1.52mm, 20g, each axis for 4 hrs						

\*Note 1: A pull-up resistor of <30kΩ between the OE pin and Vcc is recommended in a high noise environment.