

# Dynamic Engineers Inc.

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

MD220017-1

## **Features and Benefits**

Frequency range: 32.768KHz Supply voltage: 1.8V Current: 1.8uA Max. Frequency stability vs. temperature: ±25PPM Aging: ±3PPM per year Operating temperature: -40°C to +85°C Size: 2.05x1.65x0.75 mm

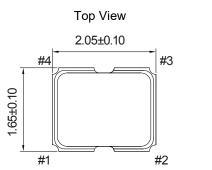
## **Typical Applications**

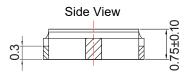
RTC Reference Clock Wearable device Sport Video Cams Ultra-small Notebook PC Mobile Phones Health and Wellness Monitors

#### **Description**

XO2016BM-ULP-32.768KHz-212 is the ultra-low power crystal oscillator. The power consumption can less than 1.8uA. It can be widely used in the low power consumption applications.

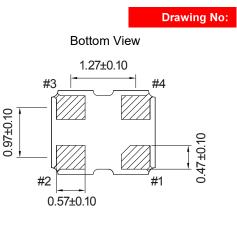
## **Mechanical Drawing & Pin Connections**



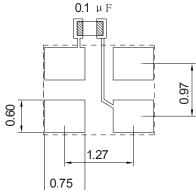


Pin#	Function				
1	NC				
2	GND Output				
3					
4	Vcc				

Unit in mm 1mm = 0.0394 inches



Recommended Soldering Pattern



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

Dynamic Engineers reserves the right to make changes to the company datasheet(s) along with other information contained inside, such as data tables and araphs without notification to potential customers who may have earlier revisions in their possession.



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# **Specifications**

Oscillator	C	Condition	Value			Unit	Note	
Specification	Sym		Min.	Тур.	Max.			
Operational Frequency	f <sub>0</sub>			32.768		KHz		
RF Output								
Output Level High			90%V <sub>cc</sub>			V		
Output Level Low					10%V <sub>cc</sub>	V		
Rise & Fall Time		@10%-90%			10	ns		
Duty Cycle			45		55	%		
Startup Time					8	ms		
Power Supply								
Voltage	Vcc	±5%		1.8		V		
Current				1.4	1.8	uA		
Frequency Stability								
Tolerance		@+25°C, 3days average			±10	ppm		
Versus Temperature		@-40°C to +85°C with reference to +25°C, 3day average			±25	ppm		
Versus Aging@+25°C		1 <sup>st</sup> year			±3.0	ppm		
Environmental Conditions								
Operating temperature range		-40°C to +85°C						
Storage temperature range		-55°C to +125 °C						