

# 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: 32.768KHz Supply voltage: 1.8V Current: 1.8uA Max. Frequency stability vs. temperature: ±50PPM Aging: ±3PPM per year Operating temperature: -20°C to +70°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-122 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** Drawing No: MD220017-1 Top View **Bottom View** 2.05±0.10 1.27±0.10 #3 #4 #4 #3 0.97±0.10 $1.65\pm0.10$ .47±0.10 #1 #2 Ö #1 #2 0.57±0.10 Side View 75±0.10 **Recommended Soldering Pattern 0.1** µ F Pin# Function 97 1 NC o. GND 2 0.60 3 Output Vcc 4 Unit in mm 1.27 1mm = 0.0394 inches 0.75

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.



# Dynamic Engineers Inc.

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

# **Specifications**

Oscillator	Sym	Condition	Value			Unit	Note
Specification			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		@-20°C to +70°C with reference to +25°C, 3day average			±50	ppm	
Versus Aging@+25°C		1 <sup>st</sup> year			±3.0	ppm	
Environmental Conditions							
Operating temperature range		-20°C to +70°C					
Storage temperature range		-55°C to +125 °C					