



## Features and Benefits

Frequency range: 32.768KHz  
Supply voltage: 1.8V  
Current: 1.8uA Max.  
Frequency stability vs. temperature:  $\pm 50$ PPM  
Aging:  $\pm 3$ PPM per year  
Operating temperature:  $-20^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$   
Size: 2.05x1.65x0.75 mm

## Typical Applications

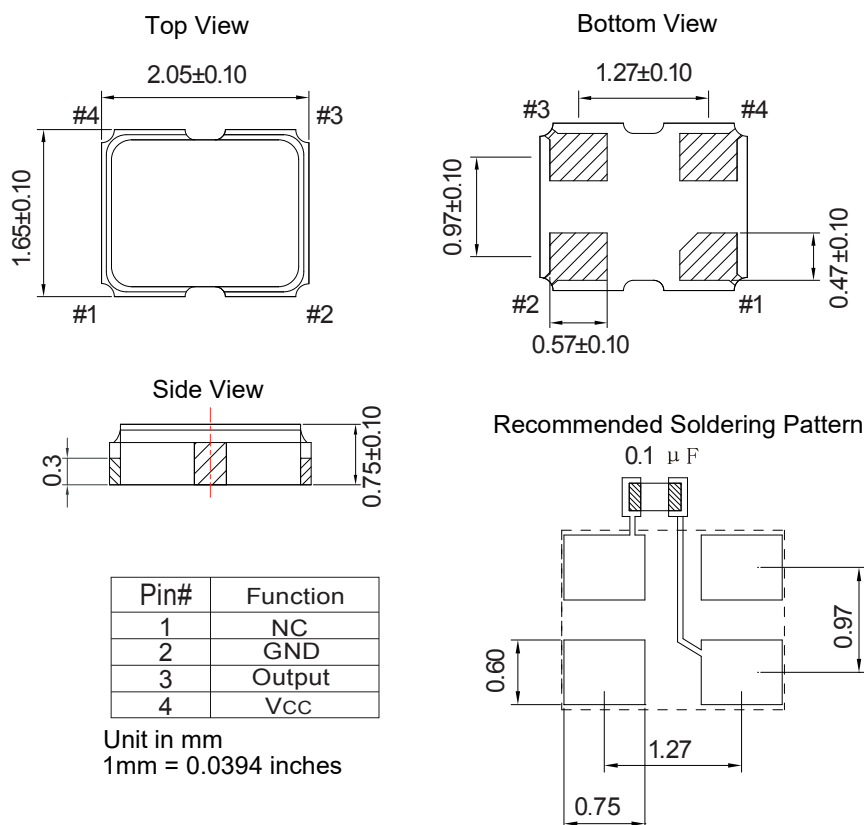
RTC Reference Clock  
Wearable device  
Sport Video Cams  
Ultra-small Notebook PC  
Mobile Phones  
Health and Wellness Monitors

## 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



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



## Specifications

Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	$f_0$			32.768		KHz	
<b>RF Output</b>							
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	
<b>Power Supply</b>							
Voltage	V <sub>cc</sub>	±5%		1.8		V	
Current				1.4	1.8	uA	
<b>Frequency Stability</b>							
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	
<b>Environmental Conditions</b>							
Operating temperature range		-20°C to +70°C					
Storage temperature range		-55°C to +125 °C					