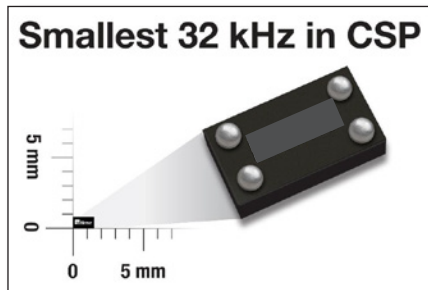


# 32 KHZ MEMS OSCILLATORS – SIT1532, SIT1552, SIT1630



80% smaller size

Ultra-low Power <1  $\mu$ A

Most accurate  $\pm 5$  ppm

Drives multiple loads

**SiTime's SiT15xx family** is the first MEMS based kHz oscillators designed for mobile and wearable electronics such as handsets, tablets, activity trackers, smart watches, GPS modules and Internet of Things (IoT).

Compared to legacy quartz products, SiTime's SiT15xx family in the CSP is up to 80% smaller with a 1.2 mm<sup>2</sup> total footprint.

### APPLICATIONS

- » Mobile Phones
- Tablets
- Fitness bands
- Health and medical monitoring
- Wearables
- Portable audio
- Sport video cams
- Active stylus
- IoT devices
- Environmental sensors

### FEATURES

- » World's smallest footprint: 1.5 mm  $\times$  0.8 mm CSP
  - no load caps
  - no Vdd Bypass caps
- » Ultra low power consumption: <1  $\mu$ A
- » Best frequency stability:
  - $\pm 5$  ppm over temp (SiT1552 TXCO)
  - 75 to 100 ppm over temp (SiT1532/SiT1630)
  - 5 to 10 ppm initial tolerance (SiT1552/SiT1532)
- » NanoDrive™-output option:
  - Minimizes output power
  - Directly interfaces to XTAL OSC input
- » XTAL-replacement in 2,0 mm  $\times$  1,2 mm SMD
- » Shock and drop resistance 10 kg

### SPECIFICATIONS

DEVICE	FREQUENCY	TEMPERATURE RANGE [°C]	STABILITY [ppm]	DIMENSIONS [mm]	SUPPLY VOLTAGE [V]
<b>32 kHz <math>\mu</math>Power Oscillators for Crystal Replacement</b>					
<b>SiT1532</b>	32.768 kHz	-10 to 70 -40 to 85	10, 20 (room) 75, 100 (over temp)	1.5 x 0.8	1.2 to 3.63
<b>SiT1552 TXCO</b>	32.768 kHz	0 to 70 -40 to 85	$\pm 5, \pm 10, \pm 20$ (over temp)	1.5 x 0.8	1.5 to 3.63
<b>32 kHz <math>\mu</math>Power Oscillators</b>					
<b>SiT1630</b>	32.768 kHz	0 to 70 -40 to 85 or -40 to 105	20 (room) 100 (over temp)	2.1 x 1.2	1.5 to 3.63

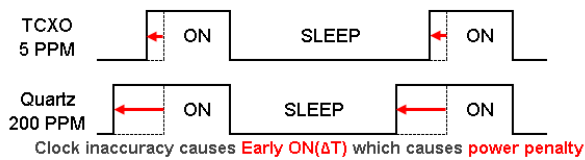
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## BENEFITS

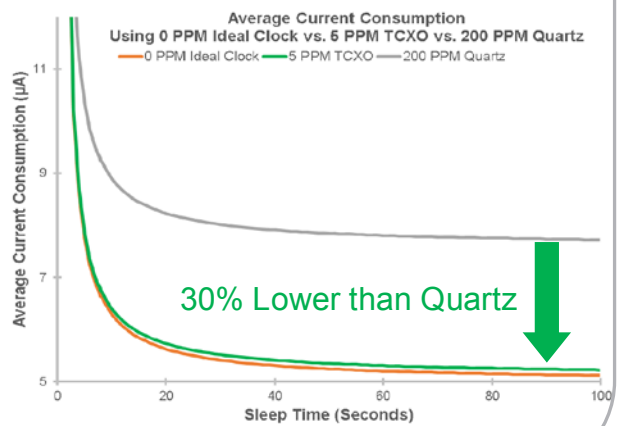
- » Extend battery life
- » Save board space
- » Reduce BOM

## COMPARISON – 32 kHz MEMS OSCILLATORS TO QUARTZ-PRODUCTS

### ±5 PPM Accurate Clock Saves 30% BLE Power



32kHz Sleep Clock Accurate Over Temp	2 second Sleep Time	20 second Sleep Time	50 second Sleep Time
	ON-Time Error Budget ( $\Delta T$ )		
SIT1552 TCXO 5 ppm	0.01 ms	0.1 ms	0.25 ms
32kHz XTAL 200 ppm	0.4 ms	4.0 ms	10.0 ms



### 80% Smaller Footprint

SIT1532 XO  
SIT1552 TCXO

1.5 mm x 0.8 mm  
1.2 mm<sup>2</sup> total footprint

32k Hz XTAL Resonator

2.0 x 1.2 mm + load caps  
5.5 mm total footprint

### Reduce BOM - Drives Multiple Loads

