

# TINY BUT MIGHTY BY ABRACON<sup>®</sup> LLC

## CRYSTALS FOR THE IoT'S MOST FOOTPRINT CHALLENGED APPLICATIONS

Abracon's ABM13W Series and ABS04W Series crystals are ideal for IoT and wearable applications requiring the best combination of small size, low 4pF or 5pF CL and low ESR. Market trends continue demanding increased performance and functionality in highly compressed designs. Abracon's Tiny But Mighty™ quartz crystals provide the smallest footprint while achieving a high functional density.

### FEATURES

- Ideally suited for space-constrained IoT, Wearables & Wireless applications
- Low profile ideal for height-constrained designs
- Simultaneously optimized for low plating load & ESR over extended temperature range
- Enhanced performance for start-up time and power savings with Low Energy SoC's
- Optimized for low power MCU and RF chipsets
- Seam sealed for long-term reliability

### APPLICATIONS

- Internet of Things
- Wearables
- Bluetooth/ Bluetooth Low Energy
- Wireless Modules
- Machine-to-Machine Connectivity (M2M)
- Ultra Low Power MCU Modules, SoC's, Transceivers
- Near Field Communication
- ISM Band Applications



Miniature 32kHz Crystal  
**ABS04W**

1.2 x 1.0mm footprint  
0.35mm profile



Miniature MHz Crystal  
**ABM13W**

1.2 x 1.0mm footprint  
0.33mm profile

SERIES	PACKAGE SIZE (mm)		FREQUENCY	CL, PLATING LOAD (pF)	ESR MAX	WIDEST AVAILABLE OPERATING TEMPERATURE RANGE	TOLERANCE OPTIONS (±ppm)	STABILITY OPTIONS (±ppm)	CO, SHUNT MAX (pF)
	L	W							
ABS04W	1.2	1.0	32.768 kHz	4 to 8	130 kΩ	-40°C to +85°C	20		2.0
ABM13W			32 to 80 MHz	5 to 8	50-100 Ω *	-40°C to +125°C	10/15/20	10/15/20	1.0

\* ABM13W ESR MAX specifications dependent on carrier frequency