



KNOWLES MEMS MICROPHONES FOR FULL RANGE AUDIO AND ULTRASONIC APPLICATIONS (CONSUMER) SELECTION GUIDE

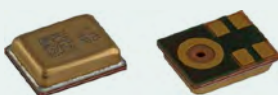
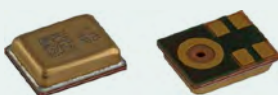
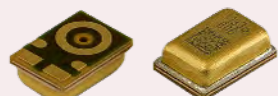
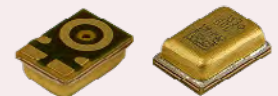


## INTRODUCTION

**Knowles is the world leader in MEMS microphones** across the Mobile, Ear, and IoT markets and has shipped close to 20 billion units to date. Design variables include ever-smaller sizes, lower profiles and mounting options, increased output capacities, and new digital audio options that eliminate analog noise. For manufacturers, surface mount designs eliminate off-line subassembly production costs. Our microphones have been used in applications from smart speakers and mobile phones to remote controls, automotive, laptops, smart home products, headphones and more. Let us help you choose the right microphone for your project.


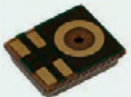

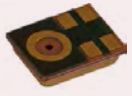
## RECOMMENDED MICROPHONES

### VERSATILE FOR MOST APPLICATIONS

	MICROPHONE	DESCRIPTION	SIZE	SNR*	LFRO	1% THD   10% THD*	CURRENT	
DIGITAL	<b>Titan *NEW*</b> SPH18R1LM4H-1 On flex: KAS-700-0172	High SNR, low power, low latency	3.50 x 2.65 x 1.00mm	68 dB(A)	30Hz	123 dB SPL   128.5 dB SPL	185µA @ 768kHz 290µA @ 1.536MHz 420µA @ 2.4MHz	
	<b>Cornell II</b> SPH0655LM4H-1 On flex: KAS-700-0153	Superior 1% THD performance	3.50 x 2.65 x 0.98mm	66 dB(A)	25Hz	130.5 dB SPL   132.5 dB SPL	260µA @ 768kHz 1000µA @ 2.4MHz	
ANALOG	<b>Robin</b> SPV61AOLR5H-1 On flex: KAS-700-0170	Single-ended Tochi 2 upgrade	2.75 x 1.85 x 0.90mm	66 dB(A)	35Hz	130 dB SPL   133 dB SPL	175µA @ 2.75V	
	<b>Tochi 2</b> SPV21AOLR5H-1V On flex: KAS-700-0171	Single-ended Superior 1% THD performance	2.75 x 1.85 x 0.90mm	64.5dB(A)	35Hz	132 dB SPL   134 dB SPL	175µA @ 2.75V	

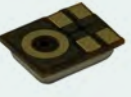


## HIGH PERFORMANCE

	MICROPHONE	DESCRIPTION	SIZE	SNR*	LFRO	1% THD   10% THD*	CURRENT	
DIGITAL	<b>Everest SPH0690LM4H-1</b> On flex: KAS-700-0147	High SNR	3.50 x 2.65 x 0.98mm	68 dB(A)	30Hz	117 dB SPL   130 dB SPL	260µA @ 768kHz  1000µA @ 2.4MHz	 
	<b>Cameron SPW0690LM4H-1</b> On flex: KAS-700-0146	Smallest and Thinnest Digital	3.10 x 2.50 x 0.85mm	66.5 dB(A)	45Hz	118 dB SPL   135 dB SPL	270µA @ 768kHz  1000µA @ 2.4MHz	 
ANALOG	<b>Raptor SPK01A0LR5H-1</b> *Coming soon*	High SNR, high AOP, single-ended	4.00 x 3.00 x 1.20mm	71 dB(A)	17Hz	123 dB SPL   130 dB SPL	175µA @ 2.75V  180µA @ 3.6V	 
	<b>Falcon SPH11C3LR5H-1</b> On flex: KAS-700-0165	Differential 1.8 and 2.7V	3.50 x 2.65 x 1.00mm	68.5 dB(A)	32Hz, 18Hz †	127 dB SPL   132 dB SPL	63µA @ 1.8V  200µA @ 2.75V	 

† 18Hz LFRO variant also available (part number SPH21C3LR5H-1)

## ENTRY TIER

	MICROPHONE	DESCRIPTION	SIZE	SNR*	LFRO	1% THD   10% THD*	CURRENT	
DIGITAL	<b>Luiso SPH0141LM4H-1</b> On flex: KAS-700-0157	Entry tier digital	3.50 x 2.65 x 0.98mm	64 dB(A)	45Hz	108 dB SPL   121 dB SPL	235µA @ 768kHz  620µA @ 2.4MHz	 
ANALOG	<b>Ford 2 SPV0142LR5H-1</b> On flex: KAS-700-0155	Single-ended	2.75 x 1.85 x 0.90mm	62.5 dB(A)	85Hz	110 dB SPL   124 dB SPL	132µA @ 1.8V	 

## SPECIALTY MICROPHONES

	MICROPHONE	DESCRIPTION	SIZE	SNR*	LFRO	1% THD   10% THD*	CURRENT	
DIGITAL	<b>Marina SPC18P8LM4H-1</b> On flex: KAS-700-0159	Slim Package Bottom-Ported	3.50 x 2.00 x 1.00mm	65 dB(A)	25Hz	119 dB SPL   122 dB SPL	260µA @ 768kHz  865µA @ 2.4MHz	 
	<b>Baracus SPG08P4HM4H-1</b> On flex: KAS-700-0152	Slim Package Top-Ported	4.00 x 2.00 x 1.10mm	64 dB(A)	30Hz	117 dB SPL   120 dB SPL	290µA @ 768kHz  715µA @ 2.4MHz	 
	<b>More SPH0641LU4H-1</b> On flex: KAS-700-0164	Flat frequency response for ultrasonic	3.50 x 2.65 x 0.98mm	64.3 dB(A)	45Hz	108 dB SPL   120 dB SPL	235µA @ 768kHz  845µA @ 3.07MHz	 
	<b>Crawford SPH0645LM4H-1</b> On flex: KAS-700-0137	I <sup>2</sup> S Output digital microphone	3.50 x 2.65 x 0.98mm	65 dB(A)	45Hz	110 dB SPL   120 dB SPL	600µA @ 3.072MHz	 

\* SNR and THD specs apply to normal mode. For low power mode specs, refer to the datasheet.