



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

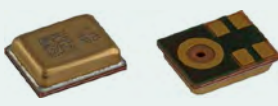
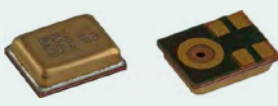
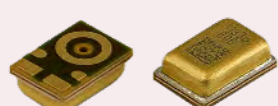
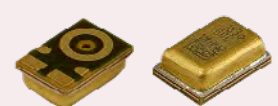


INTRODUCTION

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 | Titan *NEW* 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 |  |
| | Cornell II 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 | Robin 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 |  |
| | Tochi 2 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 | Everest SPH0690LM4H-1 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 | |
| | Cameron SPW0690LM4H-1 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 | Raptor SPK01A0LR5H-1 *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 | |
| | Falcon SPH11C3LR5H-1 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 | Luiso SPH0141LM4H-1 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 | Ford 2 SPV0142LR5H-1 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 | Marina SPC18P8LM4H-1 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 | |
| | Baracus SPG08P4HM4H-1 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 | |
| | More SPH0641LU4H-1 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 | |
| | Crawford SPH0645LM4H-1 On flex: KAS-700-0137 | I ² 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.