**IVM6311**

The IVM6311 is a Class AB audio amplifier designed to drive MEMS speakers. It features a DC‑DC SIDO (Single inductor dual output) boost converter to supply the output stage bias the MEMS. It operates from a 3.6 V Li–Ion battery and it is compatible with PDM, TDM/I2S audio protocol, moreover its analog input can be driven by most Bluetooth® audio SoC. Its low power consumption and latency makes the IVM6311 the ideal audio amplifier to develop MEMS speakers-based audio products, including true wireless earbuds (TWS), audio glasses, over the counter (OTC) hearing aids, and AR/VR glasses.

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| Ultra-low power | High Performance Audio quality | **Ultra-low latency** |
| 1.8mW in idle mode  3.6mW in 94dB SPL mode  44mW in playback @ 1KHz, 20Vpp, 50nF load | Output voltage up to 30 Vpp  Programmable DC bias from 5V to 25V  Capacitive load driving up to 150 nF  Noise floor < 35 μVrms A-weighted  Dynamic Range 108 dB  THD+N -80dB @ 1KHz, 6Vpp  HiRes audio support (40 KHz BW) | <3.8us in PDM mode @ 12.288MHz  < 1.2us in TDM/I2S mode @ 768Kz  < 400ns in analog in mode |

**IVM6312**

The IVM6312 is an ultra-low power and ultra lo latency Class-D audio amplifier with digital input that is suited for use in wireless headphones. The amplifier can drive resistive loads from 16Ω to 32Ω with a voltage up to 1.15Vrms and a DNR of 113dB.

The digital input is compatible with TDM/I2S, PDM single bit, dual bit and 4-bit (dual data line). In PDM 4-Bit its latency is 500ns

The IVM6312 features a low noise modulation scheme that improves the efficiency at any power rate and requires no external inductor/capacitor (LC) output filters. Moreover, the modulation scheme ensures much lower electromagnetic interference (EMI) radiated emissions compared with other Class-D architectures.

Its low power consumption and latency makes the IVM63IP the ideal audio amplifier to develop wearable audio products, including true wireless earbuds (TWS), audio glasses, over the counter (OTC) hearing aids, and AR/VR glasses.

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| Ultra-low power | High Performance Audio quality | **Ultra-low latency** |
| 1.2mW in idle mode  1.4mW in playback @ 0.1mW, 16 Ω load | Output voltage up to 1.15Vrms  Resistive load driving from 16 Ω to 32 Ω  Noise floor < 2.5 μVrms A-weighted  Dynamic Range 113 dB | 2.56µs in PDM 4-bit mode  5.12µs PDM 1-bit mode @ 3.072 MHz,  1.12 µs in PDM 1-bit mode @ 12.288 MHz  500 ns in PDM 4-bit mode @ 12.288 MHz |

**IVM6303**

The IVM6303 is a high-performance amplifier designed to drive capacitive loads such as piezo transducers up to 10 µF. It features a 25 V boost converter enabling class-H operation through a 512 level – 50 mV step envelop tracking (ET) architecture. The boost converter input supply is 10 V capable, allowing the IVM6303 to be powered by 1-cell or 2-cell battery systems.

The Class-D amplifier is capable to drive up to 10 µF capacitive load with an output voltage up 46Vpp with advanced anti-pop protection and 110 dB DNR. The gain structure of the IVM6303 allows both receiver and speaker modes to make the device suitable in smartphone applications.

The IVM6303 together with piezo transducer enables surface sound increasing the battery life of portable devices including smartphone, tablet, laptop.

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| High Efficiency | High Performance Audio quality | **Unlimited applications** |
| 512levels @50mV Envelope Tracking  Energy recovery from capacitive load  70% less power consumption compared to dynamic speaker solution | Output voltage up to 46Vpp  Capacitive load driving up to 10μF  Noise floor < 11 μVrms A-weighted  Dynamic Range 110 dB | Together with piezo transducers enables the surface sound in several applications: smartphone, tablet, laptop, smartwatch |

**IVM6310**

The IVM6310 is a high-performance audio amplifier designed to drive capacitive loads such as thin film piezo transducers of up to 100 nF. It features a 85 V boost converter enabling class-H operation through a 512 level – 170 mV step envelop tracking (ET) architecture.

A high-performance digital Class-D amplifier can drive up to 100 nF capacitive load with an output voltage up to 160Vpp with advanced anti-pop protection and a Dynamic Range of 115 dB.

The IVM6310 can drive also capacitive haptic transducers leveraging on its fully programmable haptic pattern generator.

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| High Efficiency | High Performance Audio quality | **Unlimited applications** |
| 512levels @170mV Envelope Tracking | Output voltage up to 160Vpp  Capacitive load driving up to 100nF  Noise floor < 100 μVrms A-weighted  Dynamic Range 115 dB | Together with thin film enables the surface sound in smartphone receiver mode.  The pattern generator engine simplifies the interaction with host processor in touch screen applications, virtual buttons, etc. |