

# 3-W Mono Filterless Class-D Audio Power Amplifier

## DESCRIPTION

The EUA2011 is a high efficiency, 3W mono class-D audio power amplifier. A low noise, filterless PWM architecture eliminates the output filter, reducing external component count, system cost, and simplifying design.

Operating in a single 5V supply, EUA2011 is capable of driving 4Ω speaker load at a continuous average output of 3W/10% THD+N or 2W/1% THD+N. The EUA2011 has high efficiency with speaker load compared to a typical class AB amplifier. With a 3.6V supply driving an 8Ω speaker, the efficiency for a 400mW power level is 88%.

In cellular handsets, the earpiece, speaker phone, and melody ringer can each be driven by the EUA2011. The gain of EUA2011 is externally configurable which allows independent gain control from multiple sources by summing signals from separate sources.

The EUA2011 is available in space-saving WCSP and TDFN packages.

## FEATURES

- Unique Modulation Scheme Reduces EMI Emissions
- Efficiency at 3.6V With an 8-Ω Speaker:
  - 88% at 400 mW
  - 80% at 100 mW
- Low 2.4-mA Quiescent Current and 0.5-μA Shutdown Current
- 2.5V to 5.5V Wide Supply Voltage
- Shutdown Pin Compatible with 1.8V Logic GPIO
- Optimized PWM Output Stage Eliminates LC Output Filter
- Improved PSRR (-72 dB) Eliminates Need for a Voltage Regulator
- Fully Differential Design Reduces RF Rectification and Eliminates Bypass Capacitor
- Improved CMRR Eliminates Two Input Coupling Capacitors
- Internally Generated 250-kHz Switching Frequency
- Integrated Pop and Click Suppression Circuitry
- 1.5mm × 1.5mm Wafer Chip Scale Package (WCSP) and 3mm × 3mm TDFN-8 package
- RoHS compliant and 100% lead(Pb)-free

## APPLICATIONS

- Ideal for Wireless or cellular Handsets and PDAs

## Typical Application Circuit

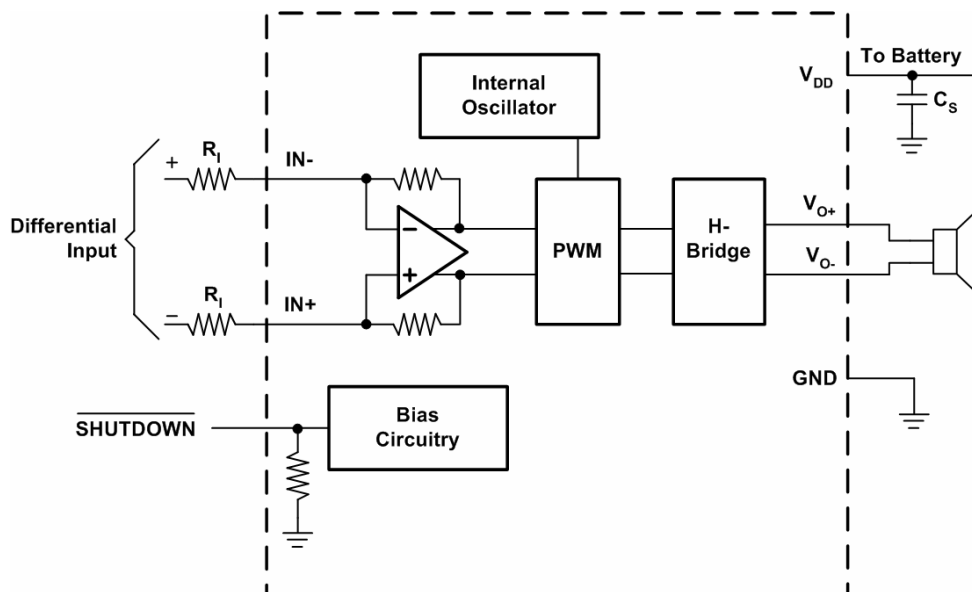


Figure1.