

# Low EMI, 2.8-W Mono Filterless Class-D Audio Power Amplifier with Auto-Recovery

## DESCRIPTION

The EUA2046 is a high efficiency, 2.8W 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, EUA2046 is capable of driving 4Ω speaker load at a continuous average output of 2.8W/10% THD+N or 2.2W/1% THD+N. The EUA2046 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 84%.

In cellular handsets, the earpiece, speaker phone, and melody ringer can each be driven by the EUA2046. The gain of EUA2046 is externally configurable which allows independent gain control from multiple sources by summing signals from separate sources.

## FEATURES

- Unique Modulation Scheme Reduces EMI Emissions
- Short Circuit Auto-Recovery
- Efficiency at 3.6V With an 8-Ω Speaker:
  - 84% at 400 mW
- Low Quiescent Current and 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 (–68 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
- Available in SOP-8 Package
- RoHS compliant and 100% Lead(Pb)-Free Halogen-Free

## APPLICATIONS

- Ideal for Wireless or cellular Handsets and PDAs

## Typical Application Circuit

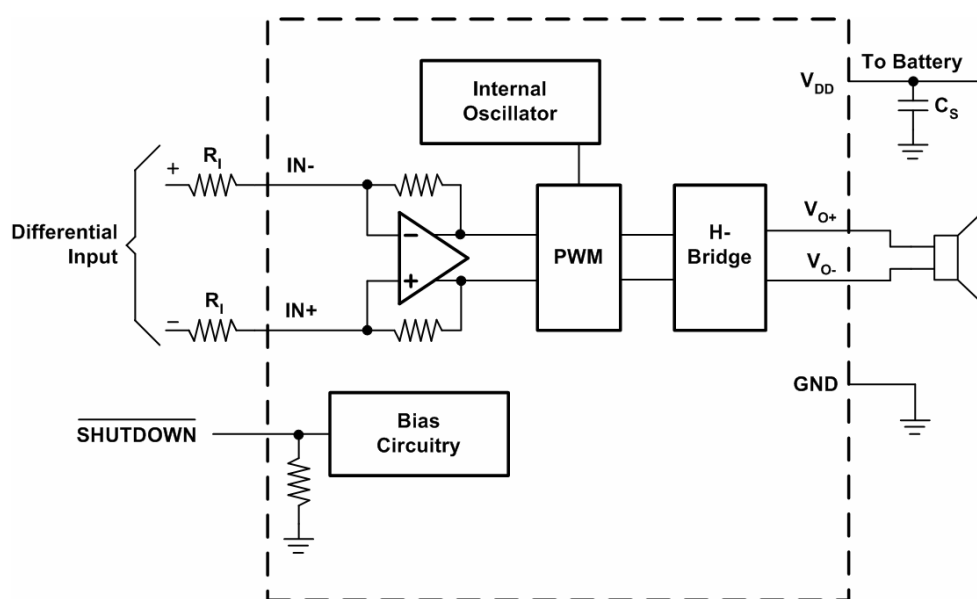


Figure1.