

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

DESCRIPTION

The EUA2045 is a high efficiency, 2.8W mono class-D audio power amplifier with non-clip. 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, EUA2045 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 EUA2045 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%.

EUA2045 feature non-clip output control function which detects output signal clip due to the over level input signal and suppress the output signal clip automatically. Also the non-clip output control function can adapt the output clip cause by power supply voltage down with battery.

In cellular handsets, the earpiece, speaker phone, and melody ringer can each be driven by the EUA2045.

The EUA2045 is available in space-saving WCSP and TDFN-8 packages.

FEATURES

- Unique Modulation Scheme Reduces EMI Emissions
- Unique Non-Clip function, Variable NCN1, NCN2, NCNOFF mode Select
- 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 325-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 Halogen-Free

APPLICATIONS

- Ideal for Wireless or cellular Handsets and PDAs

Typical Application Circuit

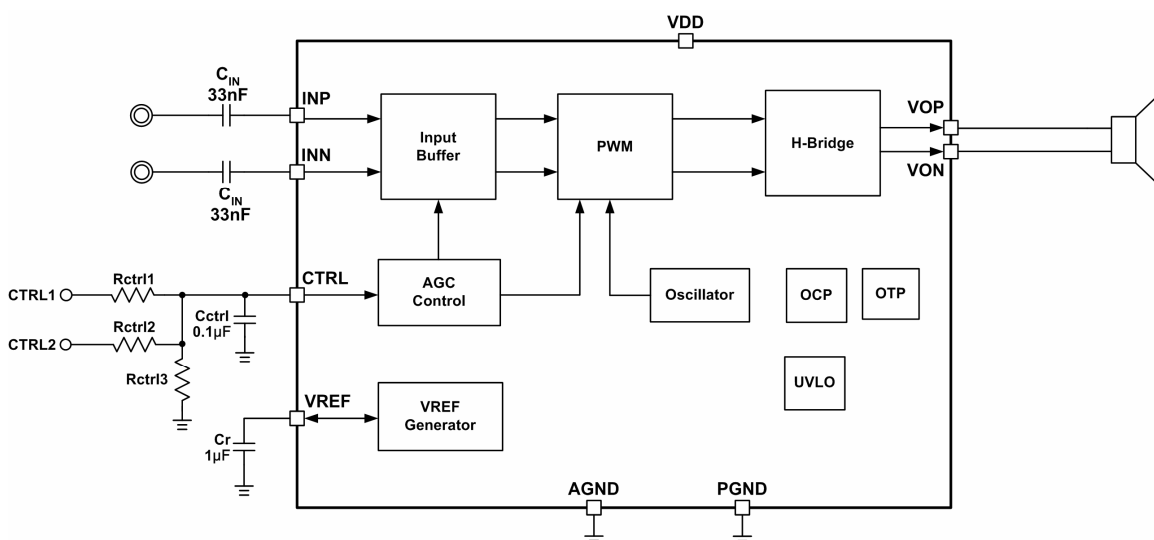


Figure1.