

3W, Mono, AGM, Filterless, Class-D Audio Power Amplifier

General Description

The CP2216 is a high efficiency, mono, filterless, Class D audio power amplifier with automatic gain management (AGM) to prevent output clipping. It is capable of delivering 3W of continuous average power to a 4Ω BTL load with less than 10% distortion (THD+N) from a 5V battery voltage.

Features like 88% efficiency, -80dB PSRR at 217Hz, improved RF-rectification immunity, the space-saving CSP9 and DFN8 packages, the advanced pop & click circuitry, a minimal count of external components and low-power shutdown mode make the CP2216 ideal for wireless handsets.

The gain of the CP2216 can automatically change with the input signal amplitude, which could prevent the output signal from clipping. It could also prevent speaker damage. Short circuit and thermal protection prevent the device from damage during fault conditions.



CSP9 Package
1.5mm x 1.5mm
-40°C ~ 85°C



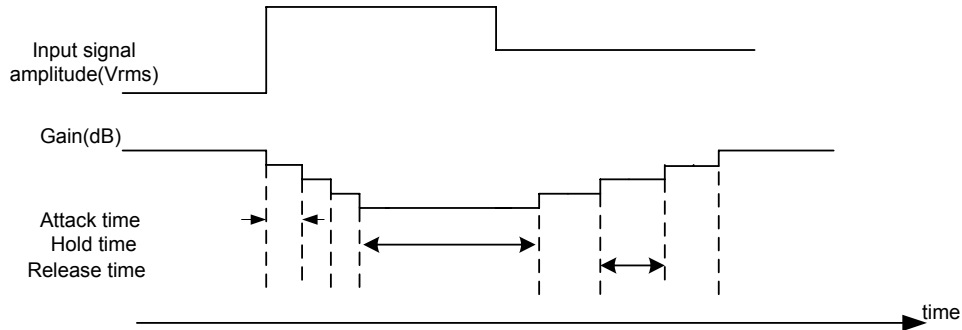
DFN8 Package
3mm x 3mm
-40°C ~ 85°C

Features

- Automatic gain management (AGM) ensures that the output signal non-clipping.
- Efficiency with an 8Ω speaker at 400mW 88%(typ)
- Power output at 5.0V, 1%THD, 8Ω 1 .36 W(typ)
- Power output at 5.0V, 10%THD, 4Ω 3 W(typ)
- Quiescent current 2.4mA (typ)
- Shutdown current 0.1 μA (typ)
- Improved PSRR -80dB (typ)
- Wide single supply voltage: 2.5V to 5.0V
- Internally generated 300kHz switching frequency
- Fully differential design reduces RF rectification
- Integrated click-and-pop suppression circuitry
- Short circuit and thermal protection
- Available in space-saving package: CSP9 & DFN8
- RoHS compliant and 100% lead(Pb)-free

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CP2216 automatic gain management control flow



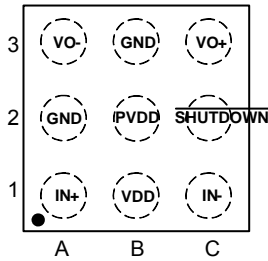
Applications

- Wireless handsets
- Portable audio devices
- PDAs
- Notebook computers

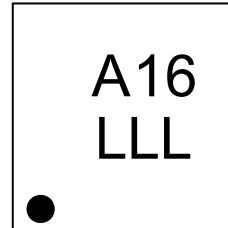
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Pin Configurations

**CSP9 Package
(Top View)**

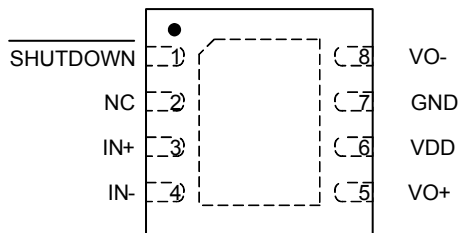


CSP9 Marking

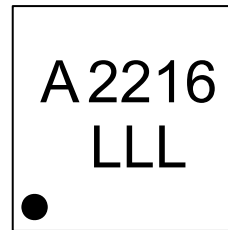


A16 - CP2216CS
LLL - Wafer lot number

**DFN8 Package
(Top View)**



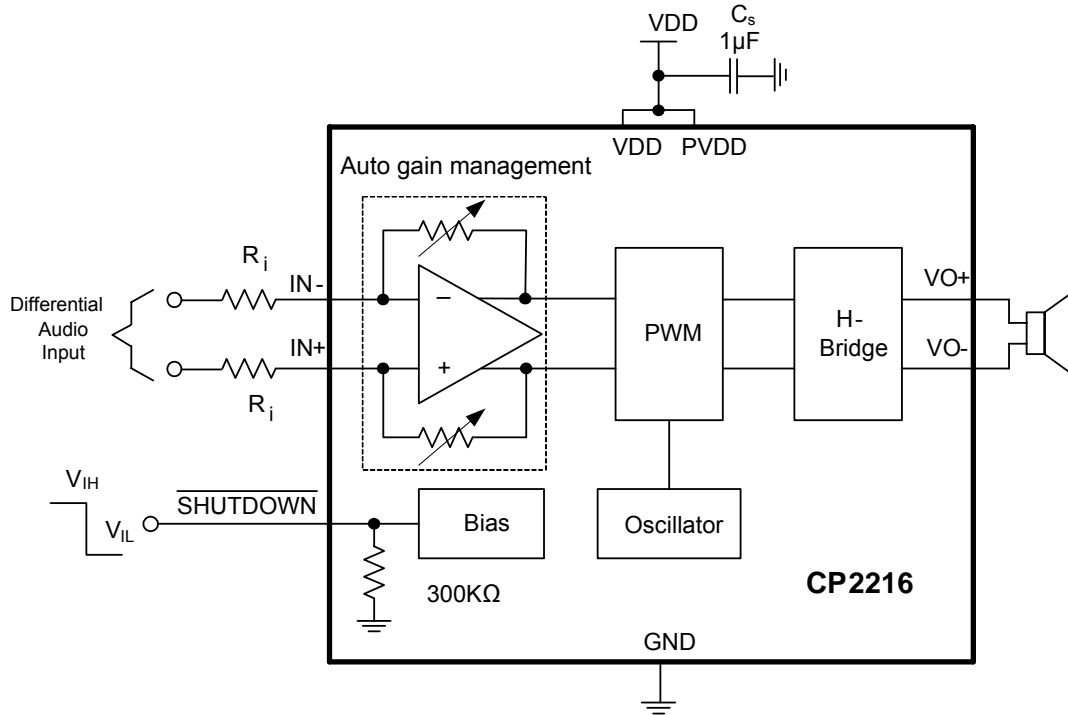
DFN8 Marking



A2216 - CP2216DN
LLL - Wafer lot number

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Typical Application



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