3.0W Class-D Audio Power Amplifier
with **Auto-Recovering Short-Circuit Protection**

GENERAL DESCRIPTION

The **FH2010** is a high efficiency, filterless, Class-D audio amplifier with auto-recovering short-circuit protection. It operates from 2.7V to 5.5V supply. When powered with 5.0V supply voltage, the ft2010 is capable of delivering 3.0W into a 4.0Ω load or 1.8W into an 8.0Ω load, with 10% THD+N.

As a Class-D audio amplifier, the FH2010 features 90% efficiency and 75dB PSRR at 217Hz which make the device ideal for battery-powered high-quality audio applications.

One of the key benefits of the FH2010 over typical Class-D audio power amplifiers is it generates much less EMI emissions, thus greatly simplifying the system design for portable applications. Also included is the over-current and short-circuit protection with auto-recovery, which ensures the device be operated safely and reliably without the need for system interaction.

APPLICATIONS

- Mobile Phones
- Portable Navigation Devices
- Multimedia Internet Devices
- MP3/4 Player

FEATURES

- Filterless Class-D operation
- High efficiency up to 90%
- Maximum output power at 5.0V supply
  3.0W (4Ω load, 10% THD+N)
  1.8W (8Ω load, 10% THD+N)
- Maximum output power at 3.6V supply
  1.5W (4Ω load, 10% THD+N)
  0.9W (8Ω load, 10% THD+N)
- Low THD+N: 0.05%
  (V_{DD}=3.6V, f=1kHz, R_L=8Ω, P_O=0.5W)
- Low quiescent current: 2mA @ V_{DD}=3.6V
- Low shutdown current < 0.1μA
- High PSRR: 75dB @ 217Hz
- No bypass capacitor required for the common-mode bias
- Under-voltage lockout
- Auto-recovering over-current and short-circuit protection
- Thermal overload protection
- Available in MSOP-8L package

APPLICATION CIRCUIT

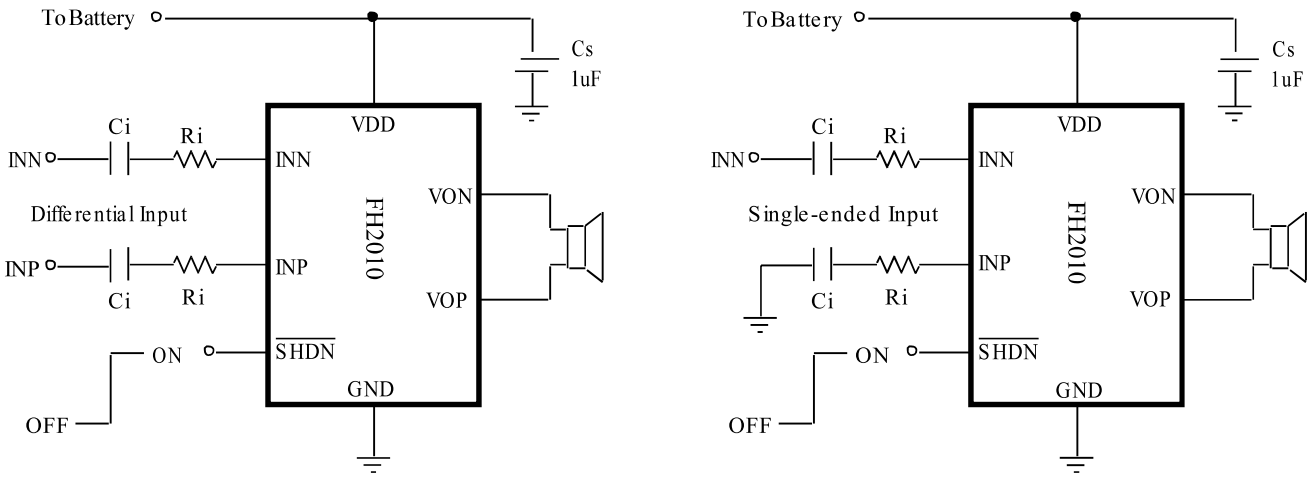
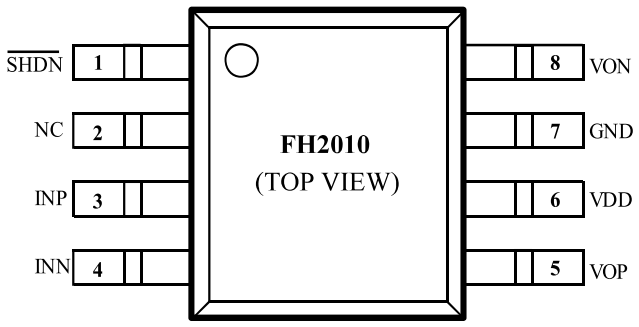


Figure 1: **Typical Audio Amplifier Application Circuit**

■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NAME	PIN #	DESCRIPTION
$\overline{\text{SHDN}}$	1	Active low shutdown control.
NC	2	No internal connection.
INP	3	Positive audio input terminal.
INN	4	Negative audio input terminal.
VOP	5	Positive BTL audio output terminal.
VDD	6	Power supply.
GND	7	Ground.
VON	8	Negative BTL audio output terminal.

■ FUNCTIONAL BLOCK DIAGRAM

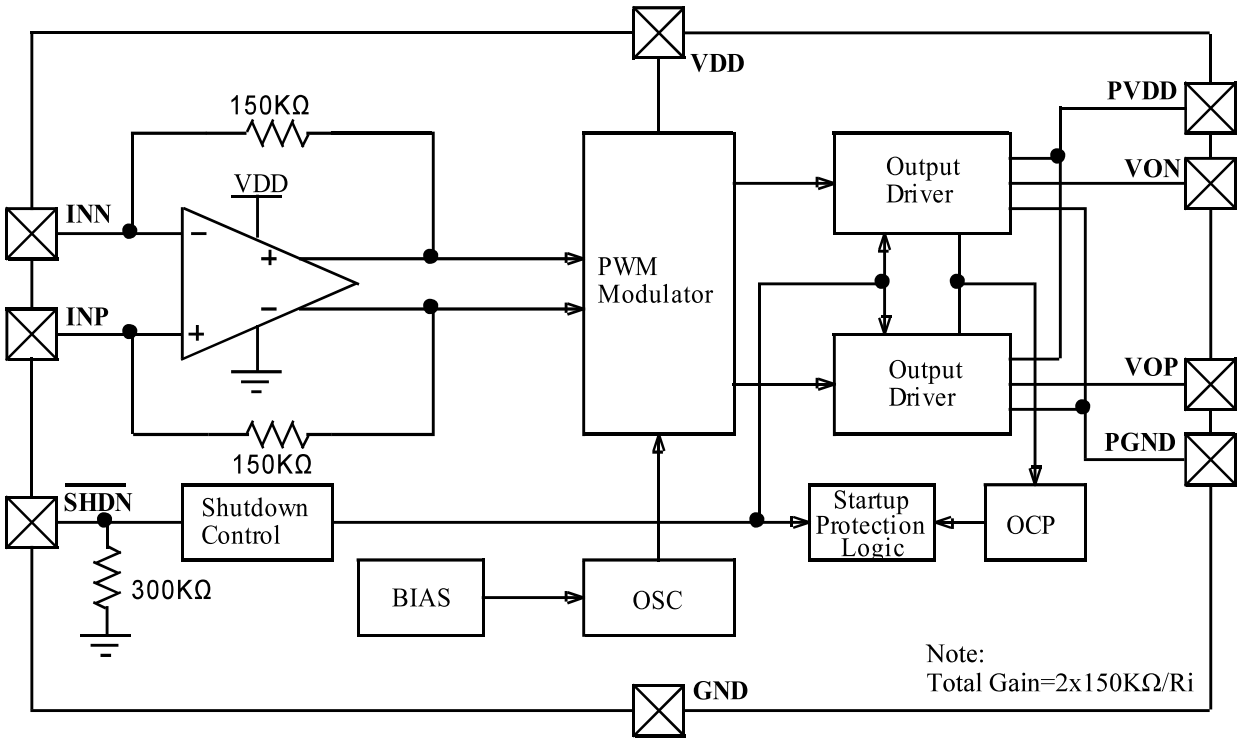


Figure 2: **Simplified Function Block Diagram of FH2010**

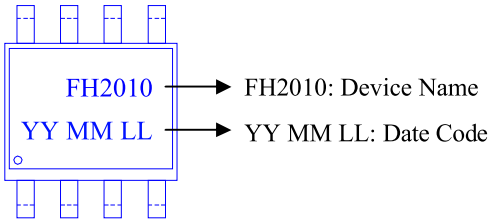
■ ORDERING INFORMATION

Part Number	Voltage Range	Features	Operating Temperature	Package Type	Top Mark	SPQ
FH2010MS8	2.7V ~ 5.5V	● Audio Amplifier, Class-D ● Power Output: 3.0W ● Efficiency: 90% ● PSRR: 75dB(217Hz) ● Protection: OCP/SCP/UVLO	-40°C to 85°C	MSOP-8L	FH2010 YY MM LL	3000PCS/Reel

Note:

- **FH2010** devices are Pb-free and RoHs compliant.
- The surface prints of our semiconductor devices are subject to change during the production process and do not involve changes in electrical parameters, and we will not separately state the notice.
- If you have any other custom purchase needs, please contact our sales department.
- ForDevices reserves the right to amend and legally interpret the electrical parameters of this chip device. (http://www.fordevices.com)

Device Name: MSOP-8L



ESD SENSITIVITY CAUTION

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

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