

2 × 5.5W Stereo Audio Amplifier with Boost Converter

■ FEATURE

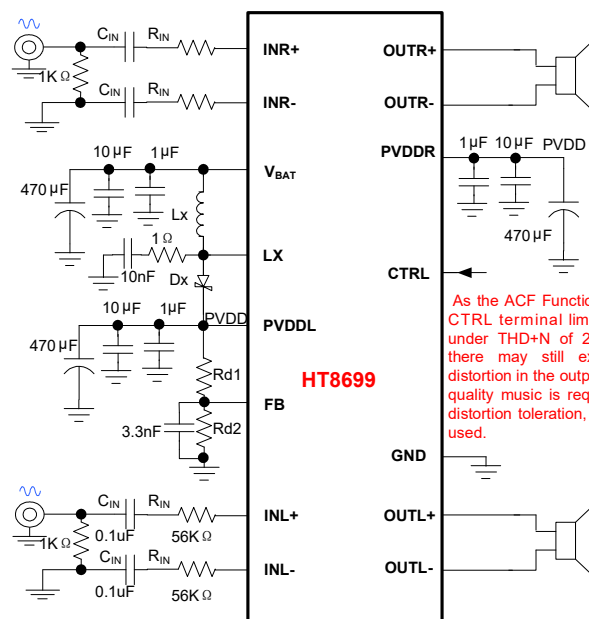
- Anti-Clipping Function (ACF)
- Filter-less Modulation, Eliminating Output Filter
- Output Power
 $2 \times 5.5W (V_{BAT}=4V, PVDD = 7V, R_L=4\Omega, THD+N=10\%)$
- -BOOST Input V_{BAT} : 2.5V to 5.5V
 -BOOST Output PVDD: V_{BAT} to 7.5V
- Adjustable BOOST Output Voltage
- Class AB /Class D available
- Thermal Protection, Over current protection, Low voltage malfunction prevention function included
- Pb-Free Packages, SOP16L-PP

Part No.	Internal Resistor R_{IN}	Working Mode
HT8699RSPEX	17.8K ohm	Class D & Class AB
HT8699B6SPEX	10 ohm	Class D

■ APPLICATIONS

- Bluetooth Speakers
- Portable Speakers
- iPhone/iPod/iPod docking
- Megaphone

■ 典型应用图



■ GENERAL DESCRIPTION

HT8699 integrates a boost converter with a filter-less stereo class D audio power amplifier to provide $2 \times 5.5W$ continuous power into a 4Ω speaker when operating from a Li-battery voltage boosted to 7V. Meanwhile, the boost output voltage is adjustable.

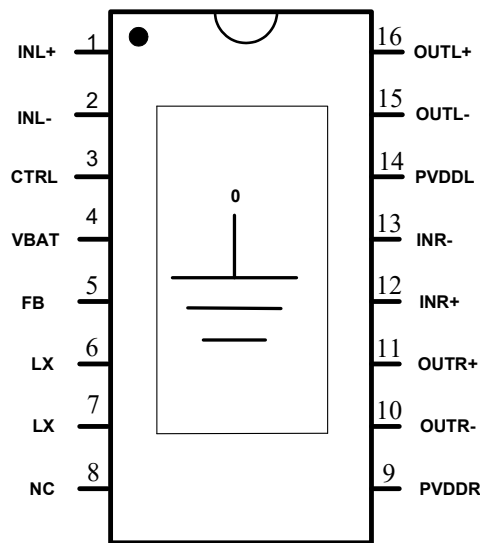
Class AB amplifier mode is also available for HT8699. Once the EMI Interference from class D and Boost Converter becomes an annoying problem, HT8699 can be switched into Class AB mode.

HT8699 has a filter-less modulation circuit which directly drives speakers while realizes low distortion and low noise characteristics. Thanks to filter-less, circuit design with fewer external parts can be made in portable applications.

HT8699 has the independent Shutdown function which can minimize the power consumption at standby and MUTE function. As for protection function, over current protection, over temperature protection function, and low supply voltage malfunction preventing function are also prepared.

As the ACF Function determined by CTRL terminal limits the output signal under THD+N of 2-5% (but not 1%), there may still exist some audible distortion in the output signal. So, if high quality music is required without much distortion toleration, ACF should not be used.

■ TERMINAL CONFIGURATION



SOP16L-PP Top View

■ TERMINAL FUNCTION¹

Terminal No.	Name	I/O	ESD Protection	Function
0	GND	GND	-	Power Ground. Do connect to the system Ground.
1	INL+	I	PN	Left channel positive input (differential +)
2	INL-	I	PN	Left channel negative input (differential -)
3	CTRL	I	PN	Shutdown and ACF control terminal
4	V _{BAT}	Power	PN	Logic Power Supply
5	FB	I	PN	Regulator Feedback Input
6,7	LX	I	-	Internal Switch Input
8	NC			No connection. Connect to GND for better thermal performance
9	PVDDR	Power	-	Boost Converter Output Voltage, Power Supply for Class D Right Channel
10	OUTR-	O	-	Right channel negative output (BTL-)
11	OUTR+	O		Right channel positive output (BTL+)
12	INR+	I	PN	Right channel positive input (differential +)
13	INR-	I	PN	Right channel negative input (differential -)
14	PVDDL	Power	-	Boost Converter Output Voltage, Power Supply for Class D Left Channel
15	OUTL-	O	-	Left channel negative output (BTL-)
16	OUTL+	O		Left channel positive output (BTL+)

¹ I: Input O: Output

ORDERING INFORMATION

Part Number	Available Working Mode	Internal Input Resistor R_{IN} ¹	Package Type	Marking	Operating Temperature Range	MOQ/Shipping Package
HT8699RSPER	Class AB & Class D	17.8k ohm	SOP16L-PP	HT8699R _{SP}	-40°C~85°C	Tube / 50 PCS
HT8699RSPET	Class AB & Class D	17.8k ohm	SOP16L-PP	HT8699R _{SP}	-40°C~85°C	Tape and Reel 2500PCS
HT8699B6SPET	Class D	10ohm	SOP16L-PP	HT8699 _{SP}	-40°C~85°C	Tube / 50 PCS
HT8699B6SPER	Class D	10ohm	SOP16L-PP	HT8699 _{SP}	-40°C~85°C	Tape and Reel 2500PCS

¹ See 错误!未找到引用源。 in Page 12 for detail.

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