

4.75W Anti-Clipping Stereo Class D Audio Amplifier with Boost Converter

■ FEATURE

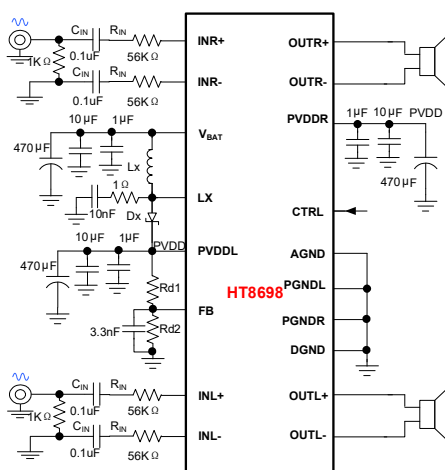
- Anti-Clipping Function (ACF)
- Filter-less Modulation, Eliminating Output Filter
- Output Power
 $2 \times 4.75W (V_{BAT}=3.6V, PVDD = 6V, R_L=4\Omega, THD+N=10\%)$
- -BOOST Input V_{BAT} : 2.5V to 5.5V
-BOOST Output PVDD: V_{BAT} to 7.0V
- Adjustable BOOST Output Voltage
- Class D and Class AB audio amplifier available
- Thermal Protection, Over current protection, Low voltage malfunction prevention function included
- Pb-Free Packages, TSSOP20L-PP

■ APPLICATIONS

- Bluetooth Speakers
- Portable Speakers
- 2.1 Channel Speakers
- Megaphone
- iPhone/iPod/iPod docking
- MP4/GPS
- Tablet PC/Note Book
- Smart Phones
- LCD TV/Monitor
- Portable Gamers

Part No.	Available Working Mode
HT8698B6xxxx	Class D
HT8698P5xxxx	Class D and Class AB

■ 典型应用图



■ GENERAL DESCRIPTION

HT8698 integrates a boost converter with a filter-less stereo class D audio power amplifier to provide $2 \times 4.75W$ continuous power into a 4Ω speaker when operating from a Li-battery voltage boosted to 6V. Meanwhile, the boost output voltage is adjustable.

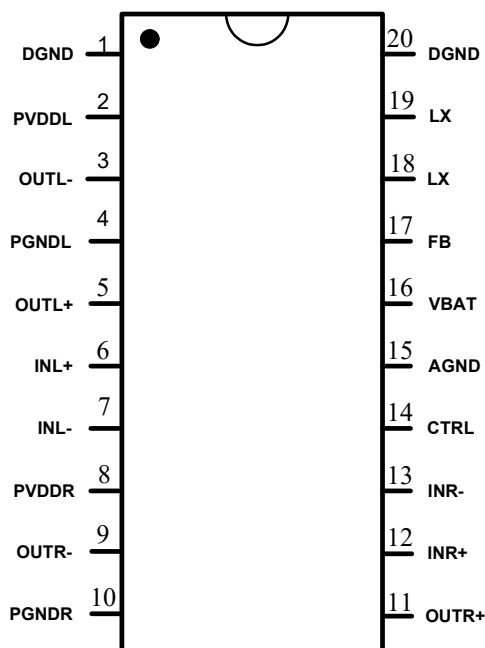
HT8698 features Anti-Clipping Function (ACF) which detects output signal clip due to the over input signal and suppresses the output signal clip automatically. Also, the ACF function can adapt the output clip caused by power supply voltage down with battery. It can significantly improve the sound quality, creating a very comfortable musical enjoyment, and to protect the speakers from overload damage. It also supplies ACF OFF mode.

Class AB amplifier mode is also available for HT8698. Once the EMI Interference from class D and Boost Converter becomes an annoying problem, HT8698 can be changed into Class AB mode.

HT8698 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.

HT8698 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.

■ TERMINAL CONFIGURATION



TSSOP20L-PP Top View

■ TERMINAL FUNCTION¹

TSSOP Terminal No.	Name	I/O	ESD Protection	Function
1,20	DGND	GND	-	Power Ground for Boost converter
2	PVDDL	Power	-	Boost Converter Output Voltage, Power Supply for Class D Left Channel
3	OUTL-	O	-	Left channel negative output terminal (BTL-)
4	PGNDL	GND	-	Power Ground for Class D Left Channel
5	OUTL+	O		Left channel positive output (BTL+)
6	INL+	I	PN	Left channel positive input terminal (differential +)
7	INL-	I	PN	Left channel negative input terminal (differential -)
8	PVDDR	Power	-	Boost Converter Output Voltage, Power Supply for Class D Right Channel
9	OUTR-	O	-	Right channel negative output terminal (BTL-)
10	PGNDR	GND	-	Power Ground for Class D Right Channel
11	OUTR+	O		Right channel positive output terminal (BTL+)
12	INR+	I	PN	Right channel positive input terminal (differential +)
13	INR-	I	PN	Right channel negative input terminal (differential -)
14	CTRL	I	PN	Shutdown, Class AB and ACF control terminal
15	AGND	GND	PN	Analog Ground
16	VBAT	Power	PN	Power Supply
17	FB	I	PN	Regulator Feedback Input
18,19	LX	I	-	Internal Switch Input

¹ I: Input O: Output

■ ORDERING INFORMATION

Part Number	Available Working Mode	Package Type	Marking	Operating Temperature Range	MOQ/Shipping Package
HT8698B6MTET	Class D	TSSOP20L-PP	HT8698 _{MTE}	-40°C~85°C	Tube / 46 PCS
HT8698B6MTER	Class D	TSSOP20L-PP	HT8698 _{MTE}	-40°C~85°C	Tape and Reel 3000PCS
HT8698P5MTET	Class D and Class AB	TSSOP20L-PP	HT8698 _{MTE}	-40°C~85°C	Tube / 46 PCS
HT8698P5MTER	Class D and Class AB	TSSOP20L-PP	HT8698 _{MTE}	-40°C~85°C	Tape and Reel 3000PCS

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