

7.0W Anti-Clipping Mono Class D/AB Audio Amplifier with Boost Converter

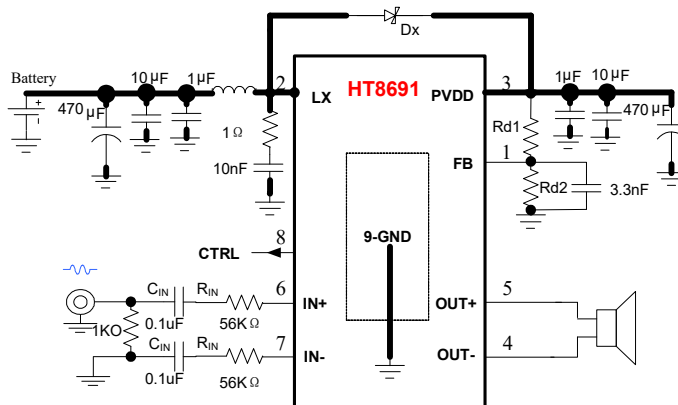
FEATURE

- Anti-Clipping Function (ACF)
- Filter-less Modulation, Eliminating Output Filter
- Output Power
 - 5.5W ($V_{BAT}=4.2V$, $PVDD = 6.5V$, $R_L=4\Omega$, THD+N=10%)
 - 7.0W ($V_{BAT}=4.2V$, $PVDD = 7.0V$, $R_L=3\Omega$, THD+N=10%)
 - 3.0W ($V_{BAT}=4.2V$, $PVDD = 6.5V$, $R_L=8\Omega$, THD+N=10%)
- Power Supply
 - 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
- Over Current Protection, Thermal Protection, Low voltage malfunction prevention function included
- Pb-Free Packages , SOP8L-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 |

TYPICAL APPLICATION



GENERAL DESCRIPTION

HT8691 integrates a boost converter with a filter-less stereo class D audio power amplifier to provide 5.5W continuous power into a 4Ω speaker when operating from a Li-battery voltage boosted to 6.5V, 7.0W continuous power into a 3Ω speaker when operating from a Li-battery voltage boosted to 7.0V. Meanwhile, the boost output voltage is adjustable.

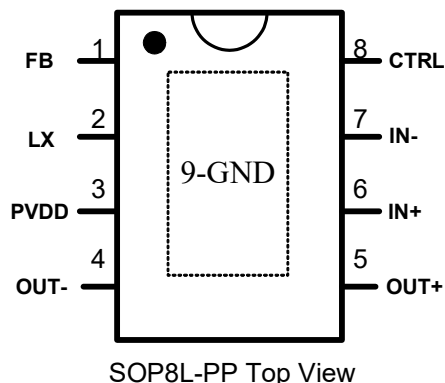
HT8691 features Anti-Clipping Function (ACF) which detects output signal clip due to the over input signal and suppresses the output signal clip automatically. Also, the ACF function can adapt the output clip caused by power supply voltage down with battery. It can significantly improve the sound quality, 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 HT8691. Once the EMI Interference from class D and Boost Converter becomes an annoying problem, HT8691 can be changed into Class AB mode.

HT8691 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.

HT8691 has the independent Shutdown function which can minimize the power consumption at standby and MUTE function. As for protection function, over current protection function for speaker output terminals, over temperature protection function, and low supply voltage malfunction preventing function are also prepared.

■ TERMINAL CONFIGURATION



■ TERMINAL FUNCTION ^{*1}

SOP Terminal No.	Name	I/O	ESD Protection	Function
1	FB	I	PN	Regulator Feedback Input
2	LX	I	-	Internal Switch Input
3	PVDD	Power	PN	Boost Converter Output Voltage and Power Supply
4	OUT-	O	-	Negative Output Terminal (BTL-)
5	OUT+	O	-	Positive Output (BTL+)
6	IN+	I	PN	Positive Input Terminal (differential +)
7	IN-	I	PN	Negative Input Terminal (differential -)
8	CTRL	I	PN	Shutdown and ACF Control Terminal
9	GND*	GND	PN	Power Ground

*1 I: Input O: Output

* Do make sure that the GND pin is grounded into the Ground plane connecting into the power ground.

■ ORDERING INFORMATION

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Package type

Part Number	Package Type	Marking	Operating Temperature Range	MOQ/Shipping Package
HT8691SP	SOP8L-PP	HT8691SP B##### ^{*2}	-40°C ~ 85°C	Tape 100PCS

*2: ##### is production track code.

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