

4.7W Anti-Clipping Mono Class D Audio Power Amplifier

FEATURE

- Anti-Clipping Function, ACF
- Excellent EMI Suppression Performance
- Filter-less Modulation, Eliminating Output Filter
- Output Power
 - 1.40W ($V_{DD}=3.6V$, $R_L=4\Omega$, THD+N=10%)
 - 2.80W ($V_{DD}=5.0V$, $R_L=4\Omega$, THD+N=10%)
 - 4.70W ($V_{DD}=6.5V$, $R_L=4\Omega$, THD+N=10%)
- High SNR: 95dB ($V_{DD} = 6.5V$, $A_v = 24dB$, THD+N = 1%)
- Low quiescent current
 - Input AC Grounded, Without Load
 - 2.65mA ($V_{DD}=3.6V$)
 - 3.25mA ($V_{DD}=5.0V$)
 - 4.00mA ($V_{DD}=6.5V$)
- Low shutdown current: $< 1\mu A$ (Input AC Grounded, Without Load)
- Over Current Protection and Thermal Protection with Auto Recovery
- Low voltage malfunction prevention function included
- Pb-Free Packages, SOP8, SOP8-PP and WLCSP-9

APPLICATIONS

- | | |
|---------------------------|----------------|
| • Portable Speakers | • PDAs |
| • iPhone/iPod/MP3 docking | • GPS |
| • Tablet PC/Note Book | • PMP/MP4/MP5 |
| • Portable Gamers | • Smart phones |

GENERAL DESCRIPTION

HT6872 is a Low-EMI, Anti-Clipping, filter-less mono Class D audio power amplifier IC with maximum output power of 4.7W (6.5V power supply, 4Ω load, 10% THD+N). It has a high efficiency with class AB amplifier performance.

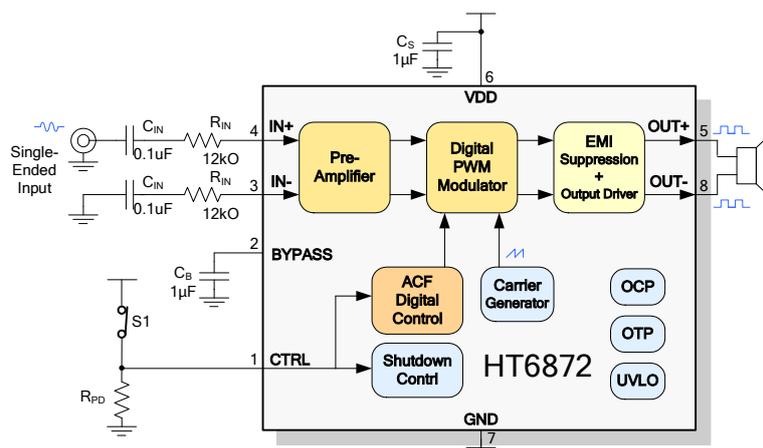
HT6872 features Anti-Clipping Function (ACF) which detects and suppresses output signal clippings due to the over level inputs of music or voice signals. The ACF function also can adapt the output clippings caused by power supply voltage down in battery applications. It improves acoustical quality considerably, gives great listening enjoyment, and prevents speaker from overload damaging.

HT6872 has excellent EMI radiation suppression characteristics. The radiation level is well below FCC Part15 Class B standards without any additive design. It keeps from interference with other EMI sensitive circuits, simplifies system design and lowers system cost.

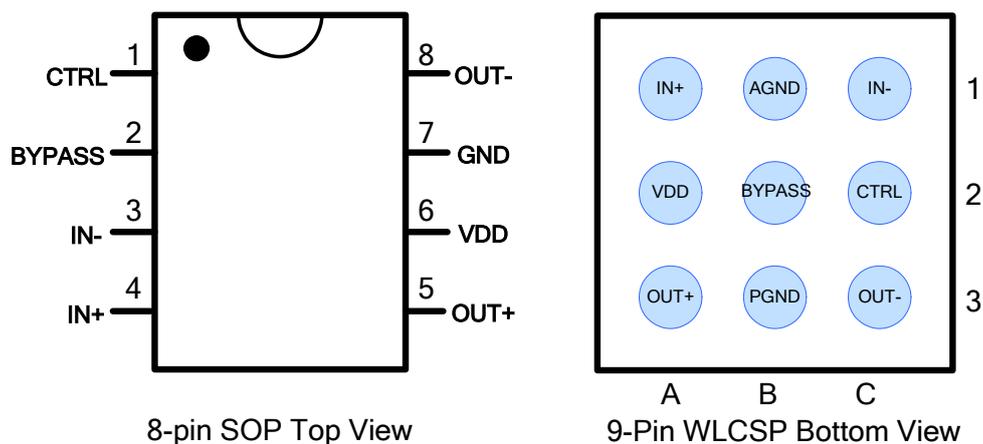
HT6872 has a filter-less modulation circuit which directly drives speakers while realizes low distortion and low noise characteristics. Thanks to filter-less, circuit design with fewer external parts can be made in portable applications.

HT6872 has the independent Shutdown function which can minimize the power consumption at standby 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.

TYPICAL APPLICATION



■ TERMINAL CONFIGURATION



■ TERMINAL FUNCTION

SOP Terminal No.	WLCSP Terminal No.	Name	I/O*1	ESD composition	Function
1	C2	CTRL	I	PN	Shutdown and ACF control terminal
2	B2	BYPASS	A	PN	Analog reference terminal
3	C1	IN-	A	PN	Negative input terminal (differential -)
4	A1	IN+	A	PN	Positive input terminal (differential +)
5	A3	OUT+	O	-	Positive output terminal (differential +)
6	A2	VDD	Power	-	Power supply
7	B1/B3	GND	GND	-	GND
8	C3	OUT-	O	-	Negative output terminal (differential -)

*1 I: Input terminal O: Output terminal A: Analog terminal

when a voltage that is higher than the VDD potential is impressed into the terminal of PN (ESD protection circuit is composed of PMOS and NMOS), the leakage current flows through the protection circuit of PMOS.

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