

## 4.7W Anti-Clipping Stereo 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%)
- SNR: 95dB ( $V_{DD} = 6.5V$ ,  $A_v = 24dB$ , THD+N = 1%)
- Quiescent current
  - Input AC Grounded, Without Load
  - 2.65mA ( $V_{DD}=3.6V$ )
  - 3.25mA ( $V_{DD}=5.0V$ )
  - 4.00mA ( $V_{DD}=6.5V$ )
- Shutdown current:  $< 1\mu A$  (Input AC Grounded, Without Load)
- Over Current Protection, Thermal Protection, Low voltage malfunction prevention function included
- Green packages, SOP8, SOP8-PP, WLCSP-9

### ■ APPLICATIONS

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

### ■ GENERAL DESCRIPTION

HT6828 is a low-EMI, Anti-Clipping, filter-less, monaural Class D audio power amplifier IC with maximum output power of  $2 \times 4.7W$ . It has a high efficiency in a variety of audio terminal applications with Class AB amplifier performance.

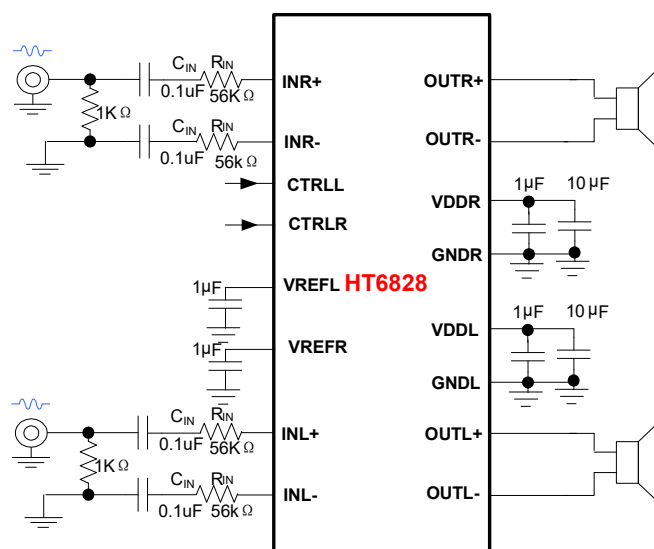
HT6828 features Anti-Clipping Function (ACF) which detects and suppresses output signal clippings due to the over level inputs of music or voice signals. The ACF function also can adapt the output clippings caused by power supply voltage down in battery applications. It improves acoustical quality considerably, gives great listening enjoyment, and prevents speaker from overload damaging.

HT6828 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.

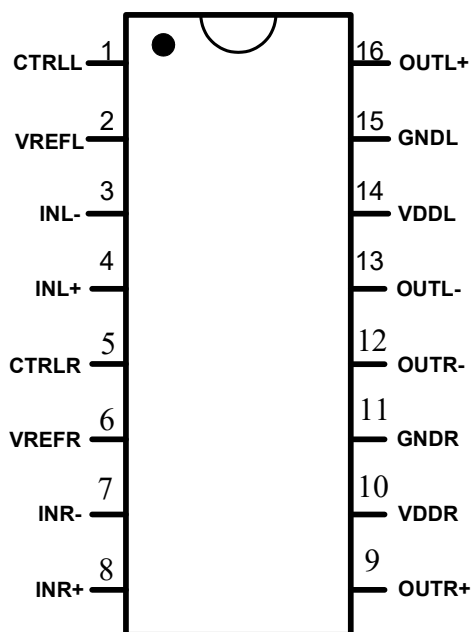
HT6828 has a filter-less modulation circuit which directly drives speakers while realizes low distortion and low noise characteristics. Thanks to filter-less, circuit design with fewer external parts can be made in portable applications.

HT6828 has shutdown mode, over-current protection, over-temperature protection and low supply voltage malfunction preventing function.

### ■ TYPICAL APPLICATION



**■ TERMINAL CONFIGURATION**



SOP16L Top View

**■ TERMINAL FUNCTION \*1**

SOP Terminal No.	Name	I/O*1	ESD composition	Function
1	CTRL	I	PN	Shutdown and ACF control terminal for left channel
2	VREFL	A	PN	Analog reference terminal for left channel
3	INL-	A	PN	Negative input terminal (differential -) for left channel
4	INL+	A	PN	Positive input terminal (differential +) for left channel
5	CTRLR	I	PN	Shutdown and ACF control terminal for right channel
6	VERFR	A	PN	Analog reference terminal for right channel
7	INR-	A	PN	Negative input terminal (differential -) for right channel
8	INR+	A	PN	Positive input terminal (differential +) for right channel
9	OUTR+	O	-	Positive output terminal (differential +) for right channel
10	VDDR	Power	-	Power supply for right channel
11	GNDR	GND	-	GND for right channel
12	OUTR-	O	-	Negative output terminal (differential -) for right channel
13	OUTL-	O	-	Negative output terminal (differential -) for right channel
14	VDDL	Power	-	Power supply for left channel
15	GNDL	GND	-	GND for left channel
16	OUTL+	O	-	Positive output terminal (differential +) for left channel

\*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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