

## 3.5W Ultra Low-EMI Anti-Clipping Mono Class D Audio Power Amplifier with Digital Volume Control

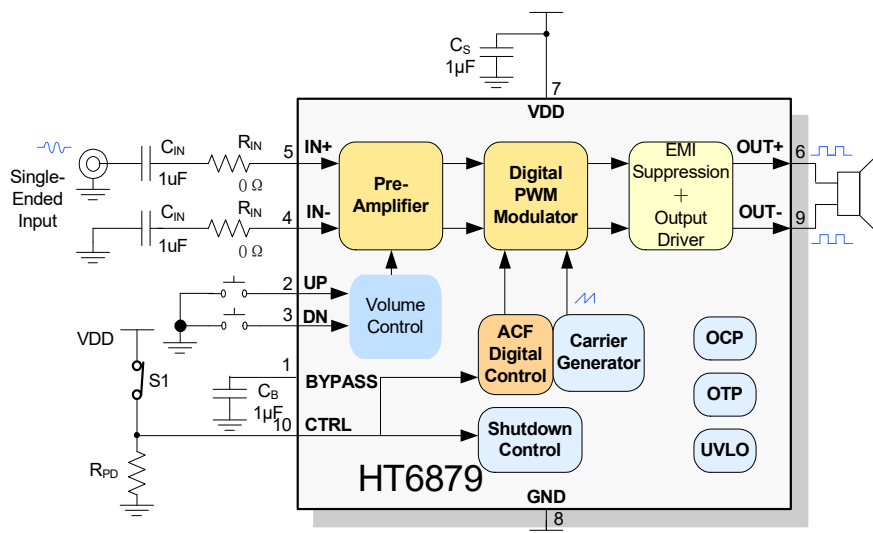
### ■ FEATURE

- Patented technology(EDMA) to reduce the internal  $R_{dson}$  and heat loss, increase the output power  
 $P_o=3.5\text{ W}$  ( $V_{DD}=5.0\text{V}$ ,  $R_L=4\Omega$ ,  $\text{THD+N}=10\%$ )  
 $P_o=3.0\text{ W}$  ( $V_{DD}=3.7\text{V}$ ,  $R_L=2\Omega$ ,  $\text{THD+N}=10\%$ )
- Excellent EMI Suppression Performance
  - a) Using Patented technology (AROC, Active edge Ringing and Overshoot Control circuitry)
  - b) The radiation level is highly lower than FCC Part15 Class B standard;
  - c) Without interference to FM radio, CMMB, GSM, CDMA, Bluetooth and any other sensitive modules with different bands;
  - d) the difficulty of system design is reduced
- $\text{THD+N}=0.1\%$  ( $R_L=4\Omega$ ,  $P_o=1\text{W}$ ,  $f=1\text{kHz}$ )
- low noise, High SNR
- 32 step Digital Volume Control (DVC)
- Anti-Clipping Function (ACF)
- Excellent Click-Pop Noise reduction function
- Low Shutdown Current,  $0.1\mu\text{A}$
- Over current protection function
- Filter-less Modulation, Eliminating Output Filter
- Over Current Protection, Thermal Protection, Low voltage malfunction prevention function included
- Pb-Free Packages, MSOP10, MSOP10-PP

### ■ APPLICATIONS

- Bluetooth Speakers
- Portable Speakers
- 2.1 Channel Speakers
- Megaphone
- iPhone/iPad docking
- MP4/GPS

### ■ TYPICAL APPLICATION



- Tablet PC/Note Book
- Smart phones
- LCD TV/Monitor
- Portable Gamers

### ■ GENERAL DESCRIPTION

HT6879 is a low-EMI, Anti-Clipping, filter-less, monaural Class D audio power amplifier IC with maximum output power of 3.5W, integrated 32-step digital volume control function. It has a high efficiency in a variety of audio terminal applications with Class AB amplifier performance.

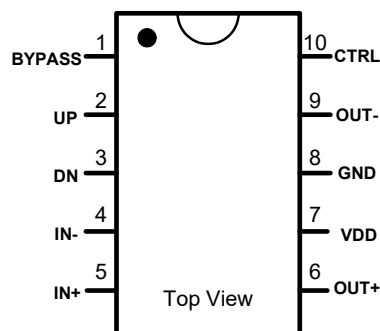
HT6879 has excellent EMI radiation suppression characteristics. The radiation level is well below FCC Part15 Class B standards without any additive design. It keeps from interference with other EMI sensitive circuits, simplifies system design and lowers system cost.

HT6879 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. According to different audio sources, two modes, ACF-1 and ACF-2, could be selected to achieve a best audio performance.

HT6879 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.

HT6879 has shutdown mode, over-current protection, over-temperature protection and low supply voltage malfunction preventing function.

## ■ TERMINAL CONFIGURATION



## ■ TERMINAL FUNCTION \*1

MSOP/DFN Terminal No.	Name	I/O	ESD composition	Function
1	BYPASS	A	PN	Analog reference terminal
2	UP	A	PN	Volume up
3	DN	A	PN	Volume down
4	IN-	A	PN	Negative input terminal (differential -)
5	IN+	A	PN	Positive input terminal (differential +)
6	OUT+	O	-	Positive output terminal (differential +)
7	VDD	Power	-	Power supply
8	GND	GND	-	GND
9	OUT-	O	-	Negative output terminal (differential -)
10	CTRL	I	PN	Shutdown and ACF control terminal

\*1: 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.

## ■ ORDERING INFORMATION

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Part Number	Package Type	Marking	Operating Temperature Range	MOQ/Shipping Package
HT6879	MSOP10	HT6879 B*MAAC	-40°C ~ 85°C	Paper bags 2500 PCS/Plate
HT6879P	MSOP10-PP	HT6879P B*MAAC	-40°C ~ 85°C	Paper bags 2500 PCS/Plate

B\*MAAC is production track code

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