

## 免电感滤波2×30W D类立体声音频功放

### ■ 特点

- 输出功率（BTL模式）  
 $2 \times 20W$  ( $V_{DD}=14.5V$ ,  $R_L=4\Omega$ ,  $THD+N=1\%$ )  
 $2 \times 33W$  ( $V_{DD}=22V$ ,  $R_L=8\Omega$ ,  $THD+N=10\%$ )
- 输出功率（PBTL模式）  
 $50W$  ( $V_{DD}=22V$ ,  $R_L=4\Omega$ ,  $THD+N=1\%$ )
- 单电源系统，4.5V-22V宽电压输入范围
- 超过90%效率，无需散热器
- 可选输出模式：BD和Hybrid
- 扩频功能，免电感滤波
- 模拟差分/单端输入，输出模式立体声/单声道可选
- 可选增益：32dB/17.6dB
- 保护功能：过压/过流/过热/欠压异常，直流检测和短路保护
- 无铅无卤封装，TSSOP28-PP

### ■ 应用

- 条形音箱
- 便携式音箱
- 拉杆音箱
- 无线智能音箱
- 消费类音频应用
- LCD电视/监视器

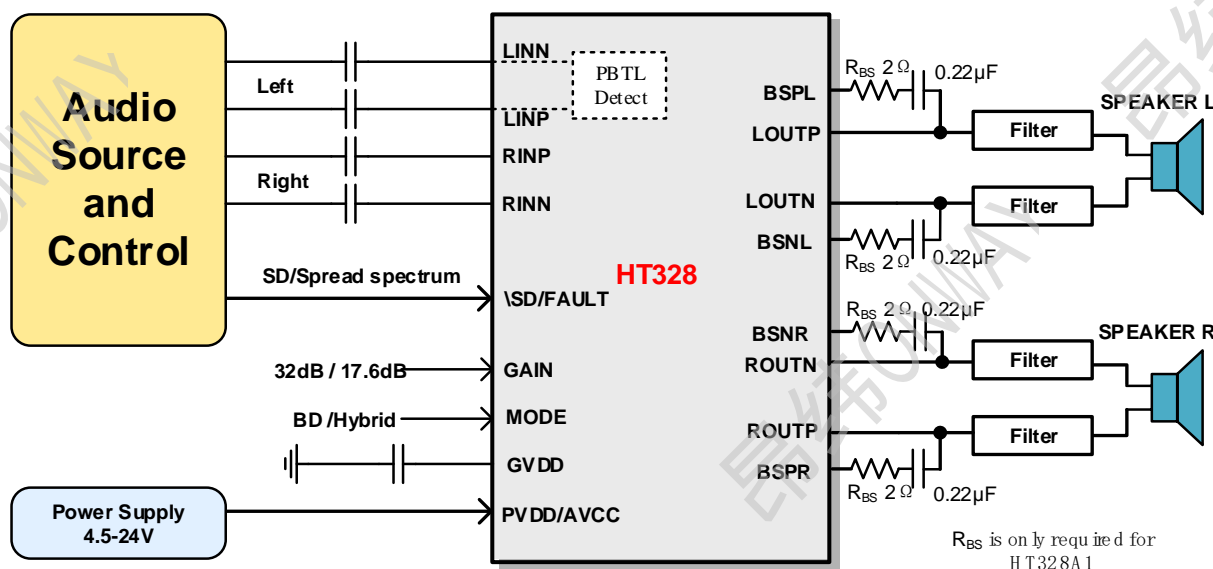
### ■ 概述

HT328是一款高效D类音频功率放大器。在22V供电的立体声（BTL）模式、 $THD+N=10\%$ 条件下，能够持续提供 $2 \times 33W/8\Omega$ 功率输出；在单声道（PBTL）模式、 $THD+N=1\%$ 条件下，能够持续提供 $50W/4\Omega$ 功率输出。

HT328具有先进的扩频功能来抑制EMI，使用价格低廉且小体积铁氧体磁珠可满足EMC要求。

此外，HT328内置关断功能使待机电流最小化，还集成了过压保护、直流保护、短路保护、热保护和电源欠压异常保护等功能，可全面防止出现故障。

### ■ 简化应用图



## 2 × 30W Inductor Free Class D Stereo Amplifier

### ■ FEATURE

- Output Power (BTL)
  - 2×20W ( $V_{DD}=14.5V$ ,  $R_L=4\Omega$ , THD+N=1%)
  - 2×33W ( $V_{DD}=22V$ ,  $R_L=8\Omega$ , THD+N=10%)
- Output Power (PBTL)
  - 50W ( $V_{DD}=22V$ ,  $R_L=4\Omega$ , THD+N=1%)
- Single Wide Voltage Supply: 4.5V-22V
- Selectable Work Mode: BD or Hybrid
- Efficiency > 90%
- Differential / Single-ended Analog Input, BTL or PBTL Output
- Selectable Gain: 32dB or 17.6dB
- Spread Switching Frequency For Inductor Free
- Integrated Self-protection Circuits Including Overvoltage, Undervoltage, Overtemperature, DC-detect, and Overcurrent with Error Reporting
- LF and HF Package of TSSOP28-PP

### ■ APPLICATIONS

- Sound Bars
- Wireless Speakers
- Consumer Audio Applications
- TVs/Monitors

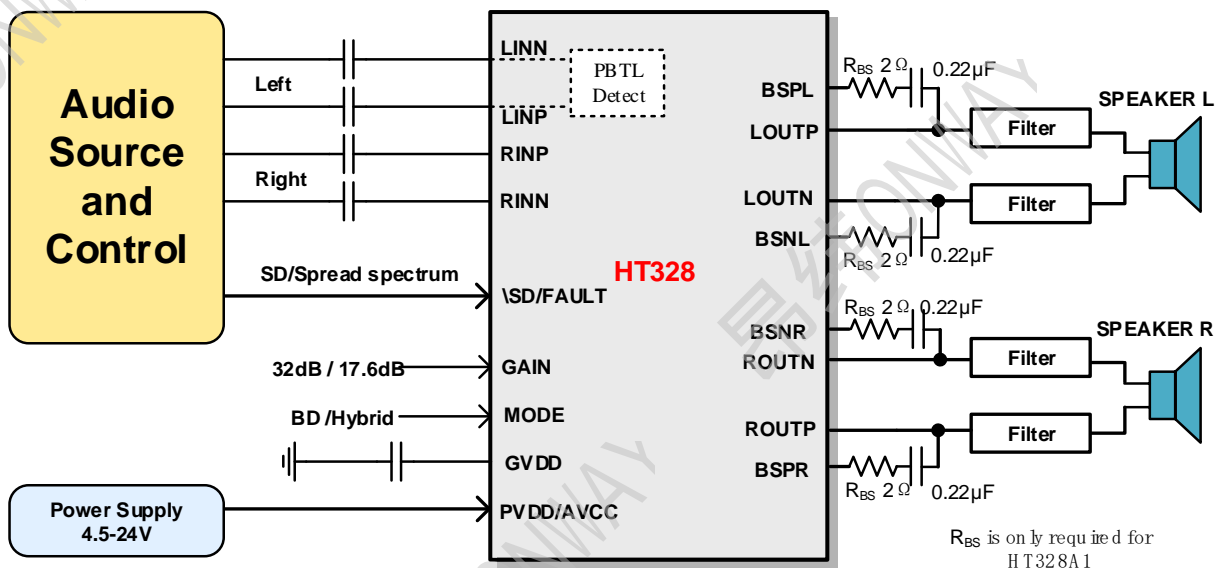
### ■ GENERAL DESCRIPTION

HT328 is a stereo efficient, Class-D audio amplifier for driving speakers up to 50W/4  $\Omega$  in mono PBTL. It can also deliver 2 × 33W/8 $\Omega$  power in stereo BTL.

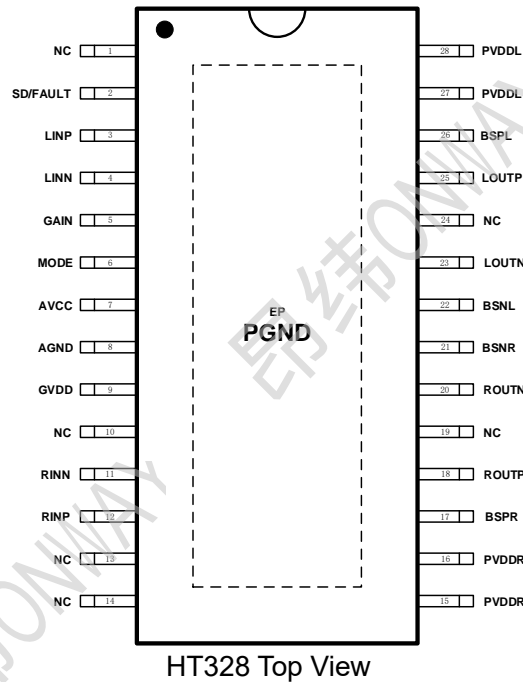
Advanced EMI Suppression with Spread Spectrum Control enables the use of inexpensive ferrite bead filters while meeting EMC requirements for system cost reduction.

HT328 is fully protected against faults with Overvoltage, Undervoltage, Overtemperature, DC-detect, and Overcurrent protection. Faults can be reported to the processor to prevent devices from being damaged

### ■ TYPICAL APPLICATION



## ■ TERMINAL CONFIGURATION



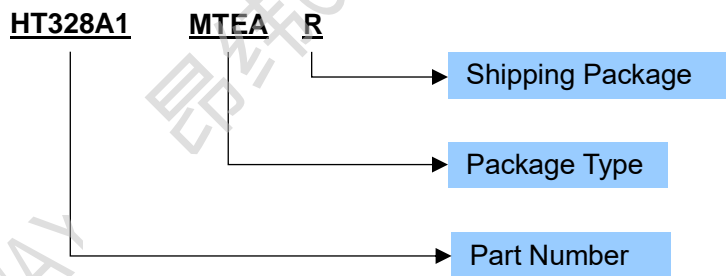
Pin No.	Name	I/O <sup>1</sup>	Description
2	SD/FAULT	I	SD/FAULT, multi-function pin. When pulled down, place the speaker amplifier in shutdown mode. General fault reporting including Over-Temp, Over-Current, DC Detect.
3	LINP	I	Positive input terminal for L channel
4	LINN	I	Negative input terminal for L channel
5	GAIN	I	Gain select pin. Low = 17.6dB gain; High or float = 32dB
6	MODE	I	Mode select pin. Low = BD; High or float = Low-Idle-Current 1SPW
7	AVCC	P	Analog power supply.
8	AGND	G	Analog signal GND. Connect to PGND.
9	GVDD	O	Voltage regulator derived from AVDD supply, connect 1uF to GND
11	RINN	I	Negative input terminal for R channel
12	RINP	I	Positive input terminal for R channel
15/16	PVDDR	P	Power Supply for amplifier drivers of R channel
17	BSPR	BST	Connection point for the ROU TP bootstrap capacitor, which is used to create a power supply for the high-side gate drive for ROU TP
18	ROU TP	O	Positive pin for differential speaker amplifier output R
20	ROUTN	O	Negative pin for differential speaker amplifier output R
21	BSNR	BST	Connection point for the ROUTN bootstrap capacitor, which is used to create a power supply for the high-side gate drive for ROUTN
22	BSNL	BST	Connection point for the LOUTN bootstrap capacitor, which is used to create a power supply for the high-side gate drive for LOUTN
23	LOUTN	O	Negative pin for differential speaker amplifier output L
25	LOU TP	O	Positive pin for differential speaker amplifier output L
26	BSPL	BST	Connection point for the LOU TP bootstrap capacitor, which is used to create a power supply for the high-side gate drive for LOU TP
27/28	PVDDL	P	Power Supply for amplifier drivers of L channel
EP	PGND	G	Power ground, make sure connect it to the system ground
1/10/13/ 14/19/24	NC	-	NC, Connect to Ground for better thermal performance

<sup>1</sup> I: Input; O: Output; G: Ground; P: Power; BST: Boot Strap

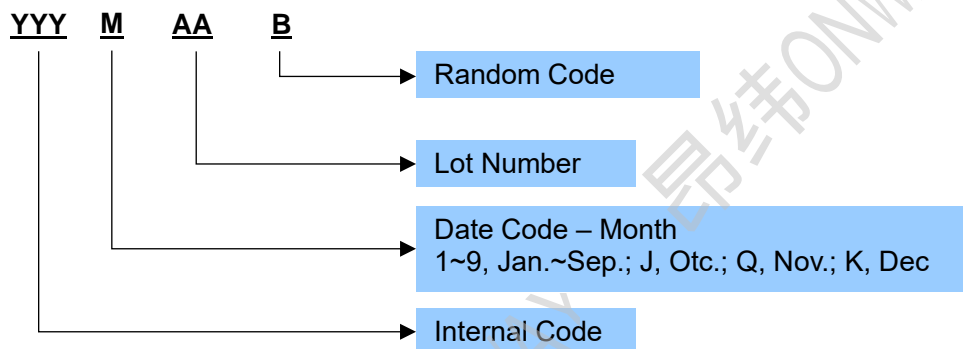
**ORDERING INFORMATION**

Ordering Number	Package Type	Marking	Operating Temperature Range	MOQ/Shipping Package
HT328A1MTET	MTE (ETSSOP28)	HT328 <sup>MTE</sup> YYYMAAB <sup>1</sup>	-40°C ~ 85°C	30PCS / Tube
HT328A1MTER	MTE (ETSSOP28)	HT328 <sup>MTE</sup> YYYMAAB	-40°C ~ 85°C	3000PCS / Tape
HT328A2MTET	MTE (ETSSOP28)	HT328 <sup>MTE</sup> YYYMAAB	-40°C ~ 85°C	30PCS / Tube
HT328A2MTER	MTE (ETSSOP28)	HT328 <sup>MTE</sup> YYYMAAB	-40°C ~ 85°C	3000PCS / Tape
HT328A2MTEAT	MTEA (ETSSOP28)	HT328 <sup>MTE</sup> YYYMAAB	-40°C ~ 85°C	30PCS / Tube
HT328A2MTEAR	MTEA (ETSSOP28)	HT328 <sup>MTE</sup> YYYMAAB	-40°C ~ 85°C	3000PCS / Tape

**Ordering Number**



**Production Tracking Code**



<sup>1</sup> YYYMAAB is production tracking code