

免电感滤波2×30W, 2×20W, 2×15W D类立体声音频功放

2×30W, 2×20W, 2×15W Inductor Free Class D Stereo Amplifier

■ FEATURES

- Output Power (BTL)
 - 2×20W (VDD=14.5V, RL=4Ω, THD+N=1%, HT328A2, HT328A3)
 - 2×33W (VDD=22V, RL=8Ω, THD+N=10%, HT328A3)
 - 2×15W (VDD=15V, RL=4Ω, THD+N=0.1%, HT328A)
- Output Power (PBTL)
 - 50W (VDD=22V, RL=4Ω, THD+N=1%, HT328A3)
 - 16W (VDD=15V, RL=4Ω, THD+N=0.1%, HT328A)
- Single Wide Voltage Supply: 4.5V-22V (HT328A3), 4.5V~18V (HT328A2), 4.5V~16V (HT328A)
- Selectable Work Mode: BD or 1SPW (HT328A3); BD or Hybrid (HT328A, HT328A2)
- Spread Spectrum Function
- Efficiency > 90%
- Differential / Single-ended Analog Input, BTL or PBTL (only for HT328A, HT328A3) Output
- Selectable Gain: 32dB or 17.6dB
- Integrated Self-protection Circuits Including Overvoltage, Undervoltage, Overtemperature, DC-detect, and Overcurrent with Error Reporting
- LF and HF Package of ETSSOP28
- 输出功率 (BTL模式)
 - 2×20W (VDD=14.5V, RL=4Ω, THD+N=1%, HT328A2, HT328A3)
 - 2×33W (VDD=22V, RL=8Ω, THD+N=10%, HT328A3)
 - 2×15W (VDD=15V, RL=4Ω, THD+N=0.1%, HT328A)
- 输出功率 (PBTL模式)
 - 50W (VDD=22V, RL=4Ω, THD+N=1%, HT328A3)
 - 16W (VDD=15V, RL=4Ω, THD+N=0.1%, HT328A)
- 单电源系统, 4.5V-22V(HT328A3), 4.5V~18V (HT328A2), 4.5V~16V (HT328A)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1SPW(HT328A3); BD 和 Hybrid (HT328A, HT328A2)
- 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, ETSSOP28

■ APPLICATIONS

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

DESCRIPTION

HT328 family is a stereo efficient, Class-D audio amplifier.

HT328A3 can drive speakers up to 50W/4 Ω in mono PBTL. It can also deliver 2 \times 33W/8 Ω power in stereo BTL.

HT328A2 can deliver 2 \times 20W/4 Ω power in stereo BTL.

HT328A can drive speakers up to 16W/4 Ω in mono PBTL. It can also deliver 2 \times 15W/4 Ω 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 family 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.

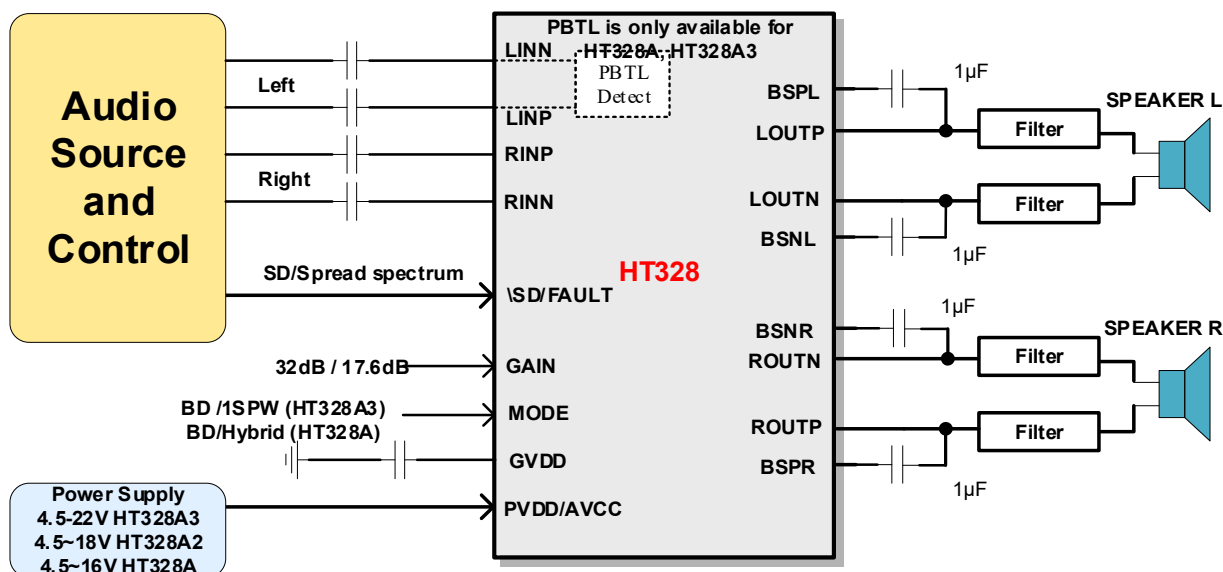
HT328系列是一款高效D类音频功率放大器。

HT328A3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 Ω 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 Ω 功率输出。HT328A2则在BTL下可输出2 \times 20W/4 Ω 功率。HT328A在PBTL下可输出16W/4 Ω 功率，在BTL下可输出2 \times 15W/4 Ω 功率。

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。

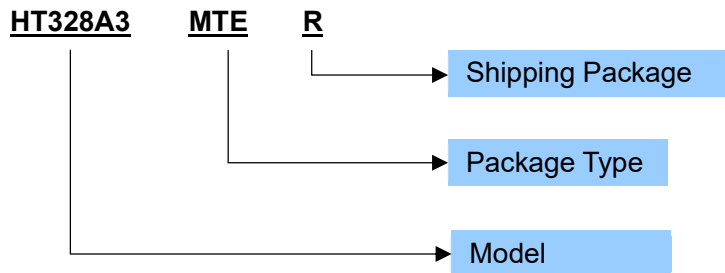
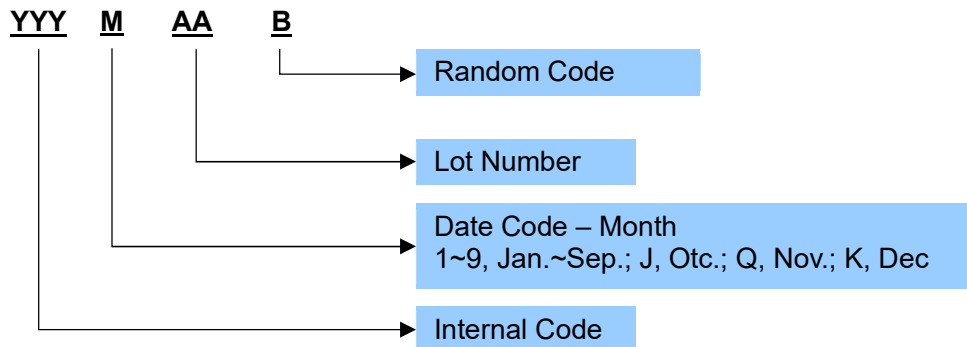
此外，HT328内置关断功能使待机电流最小化，还集成了过压保护、直流保护、短路保护、热保护和电源欠压异常保护等功能，可全面防止出现故障。

TYPICAL APPLICATION

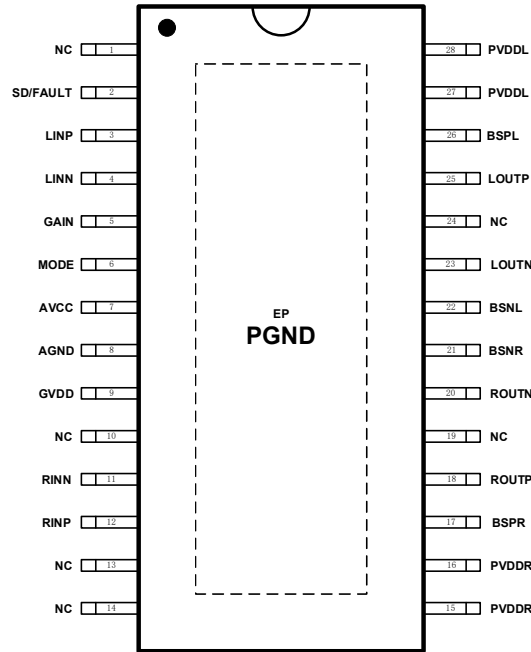


ORDERING INFORMATION

Part Number	Package Type	Package Abbr.	Eco Plan	MSL Level	Marking	Shipping Package / MOQ
HT328A3MTER	ETSSOP28	MTE	RoHS	MSL3	HT328 ^{MTE} YYMAAB ¹	Tape and Reel (R) / 3000pcs
HT328A2MTER	ETSSOP28	MTE	RoHS	MSL3	HT328 ^{MTE} YYMAAB	Tape and Reel (R) / 3000pcs
HT328AMTER	ETSSOP28	MTE	RoHS	MSL3	HT328 ^{MTE} YYMAAB	Tape and Reel (R) / 3000pcs

Part Number

Production Tracking Code


■ TERMINAL CONFIGURATION



HT328 Top View

■ TERMINAL FUNCTION

Terminal No.	Name	I/O ¹	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 = 32dB
6	MODE	I	Mode select pin. Low = BD; High = 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	BSPL	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	ROU TN	O	Negative pin for differential speaker amplifier output R
21	BSNR	BST	Connection point for the ROU TN bootstrap capacitor, which is used to create a power supply for the high-side gate drive for ROU TN
22	BSNL	BST	Connection point for the LOU TN bootstrap capacitor, which is used to create a power supply for the high-side gate drive for LOU TN
23	LOU TN	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
1/10/13/ 14/19/24	NC	-	NC, Connect to Ground for better thermal performance
EP	GND	G	Provides both electrical and thermal connection from the device to the board. A matching ground pad must be provided on the PCB and the device connected to it via solder. 既 proper electrical operation, this ground pad must be connected to the system ground. 既

¹ I: Input; O: Output; G: Ground; P: Power; BST: BOOT Strap;

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禾润电子科技（嘉兴）股份有限公司**Heroic Electronic Technology (Jiaxing) Co., Ltd.**

地址：浙江省嘉兴市南湖区亚太路906号科创CBD园区21号楼11层

Add: 11th floor, Building 21, No. 906, Yatai Road, Jiaxing, Zhejiang Province

Sales: 0573-82586608, sales@heroic.com.cn

Support: 0573-82586151, support@heroic.com.cn

Website: www.heroic.com.cn; wap.heroic.com.cn

Wechat MP: HEROIC_JX

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