

具有防破音功能的免电感滤波2×20W D类立体声音频功放

2x20W Inductor Free Class D Stereo Amplifier with Anti-Clipping Function

■ FEATURES

- Output Power (BTL)
2×22W (VDD=14V, RL=4Ω, THD+N=10%)
- Output Power (PBTL)
34W (VDD=16V, RL=4Ω, THD+N=10%)
- Single Wide Voltage Supply: 4.5V-19V
- Anti-clipping Function (ACF)
- Selectable Work Mode: BD or 1SPW
- Efficiency > 90%
- Differential / Single-ended Analog Input, BTL or PBTL 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)
2×22W (VDD=14V, RL=4Ω, THD+N=10%)
- 输出功率 (PBTL模式)
34W (V_{DD}=16V, R_L=4Ω, THD+N=10%)
- 单电源系统, 4.5V-19V宽电压输入范围
- ACF防破音功能可选
- 超过90%效率, 无需散热器
- 可选输出模式: BD和1SPW
- 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

HT366 is a stereo efficient, Class-D audio amplifier for driving speakers up to 34W/4 Ω in mono PBTL. It can also deliver 2 \times 20W/4 Ω power in stereo BTL.

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

HT366 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.

HT366 features Anti-Clipping Function (ACF) which detects output signal clip due to the over input signal and suppresses the output signal clip automatically. Also, the ACF function can adapt the output clip caused by power supply voltage down with battery. It can significantly improve the sound quality, creating a very comfortable musical enjoyment, and to protect the speakers from overload damage.

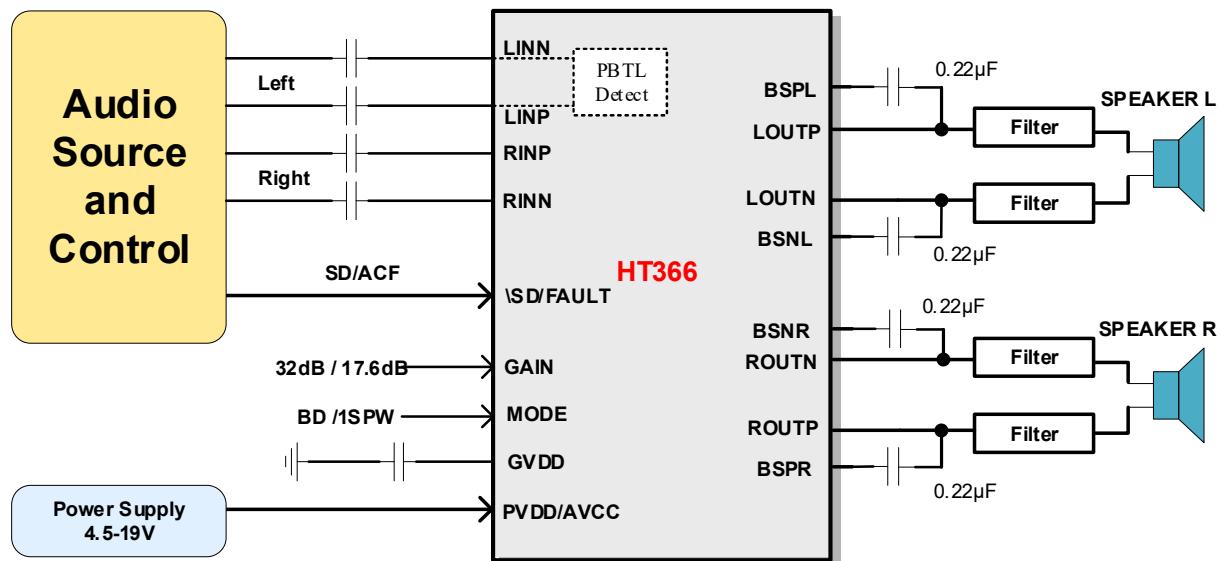
HT366是一款高效D类音频功率放大器。在14V供电的立体声(BTL)模式、THD+N=10%条件下,能够持续提供2*20W/4Ω功率输出;在单声道(PBTL)模式、THD+N=10%条件下,能够持续提供34W/4Ω功率输出。

HT366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，HT366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。

HT366具有防削顶尖失真(ACF)输出控制功能,可检测并抑制由于输入音乐、语音信号幅度过大所引起的输出信号削顶尖失真(破音),也能自适应地防止在BOOST升压电压下降所造成的输出削顶,显著提高音质,创造非常舒适的听音享受,并保护扬声器免受过载损坏。

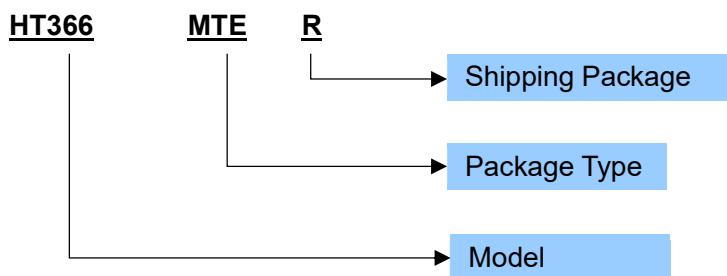
■ TYPICAL APPLICATION



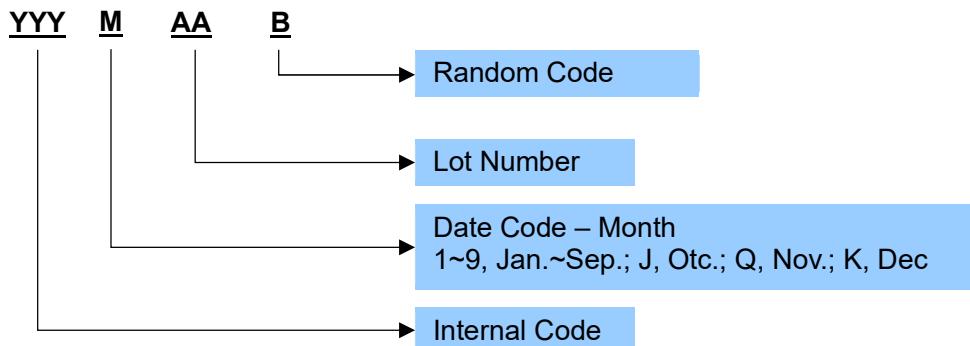
■ ORDERING INFORMATION

Part Number	Package Type	Marking	Operating Temperature Range	Shipping Package / MOQ
HT366MTER	ETSSOP28 (MTE)	HT366 YYYMAAB ¹	-40°C~85°C	Tape and Reel (R) / 3000pcs

Part Number

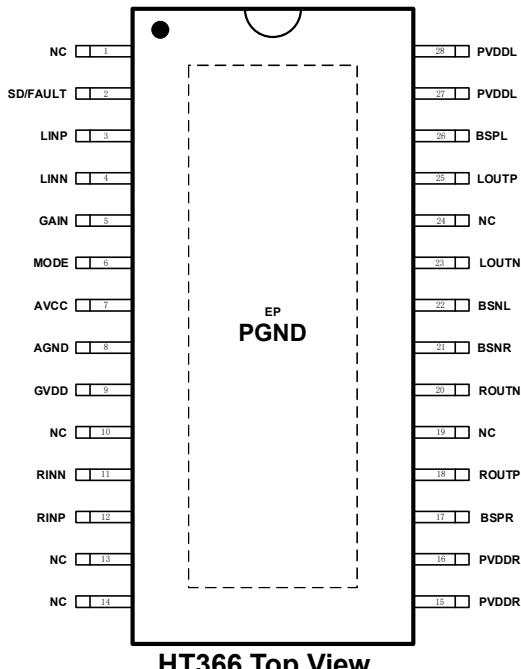


Production Tracking Code



¹ YYYMAAB is production tracking code

■ TERMINAL CONFIGURATION



HT366 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	BSPR	BST	Connection point for the ROUTP bootstrap capacitor, which is used to create a power supply for the high-side gate drive for ROUTP
18	ROUTP	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	LOUTP	O	Positive pin for differential speaker amplifier output L
26	BSPL	BST	Connection point for the LOUTP bootstrap capacitor, which is used to create a power supply for the high-side gate drive for LOUTP
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. For proper electrical operation, this ground pad must be connected to the system ground. 既是地，又是散热PAD

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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