

18W内置升压单声道D类音频功放

18W Boosted Mono Class D Amplifier

■ FEATURES

- Spread spectrum technology
- Output Power
18W ($V_{BAT}=3.7V$, $R_L=4\Omega$, THD+N=10%, $f_{IN} = 1kHz$)
16W ($V_{BAT}=3.7V$, $R_L=4\Omega$, THD+N=1%, $f_{IN} = 1kHz$)
8W ($V_{BAT}=3.3V$, $R_L=8\Omega$, THD+N=1%, $f_{IN} = 1kHz$)
- Power Supply V_{BAT} : 3.0V~12V
- High Efficiency Class H Boost Converter
 - Multiple boost voltages automatically adjust Class D audio amplifier
 - Extends the playing time in battery supply applications
 - Adjustable switch peak current limit to avoid over-pulling on battery current
- Over Current Protection, Thermal Protection, over voltage protection function included
- Pb-Free Packages, ETSSOP20

- 扩频技术
- 输出功率
18W ($V_{BAT}=3.7V$, $R_L=4\Omega$, THD+N=10%, $f_{IN} = 1kHz$)
16W ($V_{BAT}=3.7V$, $R_L=4\Omega$, THD+N=1%, $f_{IN} = 1kHz$)
8W ($V_{BAT}=3.3V$, $R_L=8\Omega$, THD+N=1%, $f_{IN} = 1kHz$)
- V_{BAT} 供电范围: 3.0V至12V
- 高效H类升压功能
- 自适应功放功率的升压轨, 延长电池播放时间
- 可调节最大限流值, 有效防止电池拉死
- 保护功能:过流/过热/过压保护功能
- 无铅封装, ETSSOP20

■ APPLICATIONS

· Bluetooth/Wi-Fi Speakers	· Portable Speakers	· 蓝牙/ Wi-Fi音箱	· 便携式音箱
· Smart speakers	· Smart Home	· 智能音箱	· 智能家居

■ DESCRIPTION

HTA8111, integrated with a boost converter, is a mono Class D audio amplifier that drives up to continuous 18W (10% THD+N, 1kHz) into 4ohm speaker from a Li-battery voltage.

HTA8111 integrates an adaptive boost converter that generates a Class D amplifier supply rail tracking the audio signal, which will significantly improve the efficiency and extends the playing time in battery supply applications. Configurable current limit is adopted to avoid accidental large peak current.

HTA8111 integrates Spread Spectrum Control technology to achieve advanced EMI suppression. The Gain of HTA8111 is 32dB.

As for protection function, over current protection function for speaker output terminals, over temperature protection function and over voltage protection for boost converter output are also prepared.

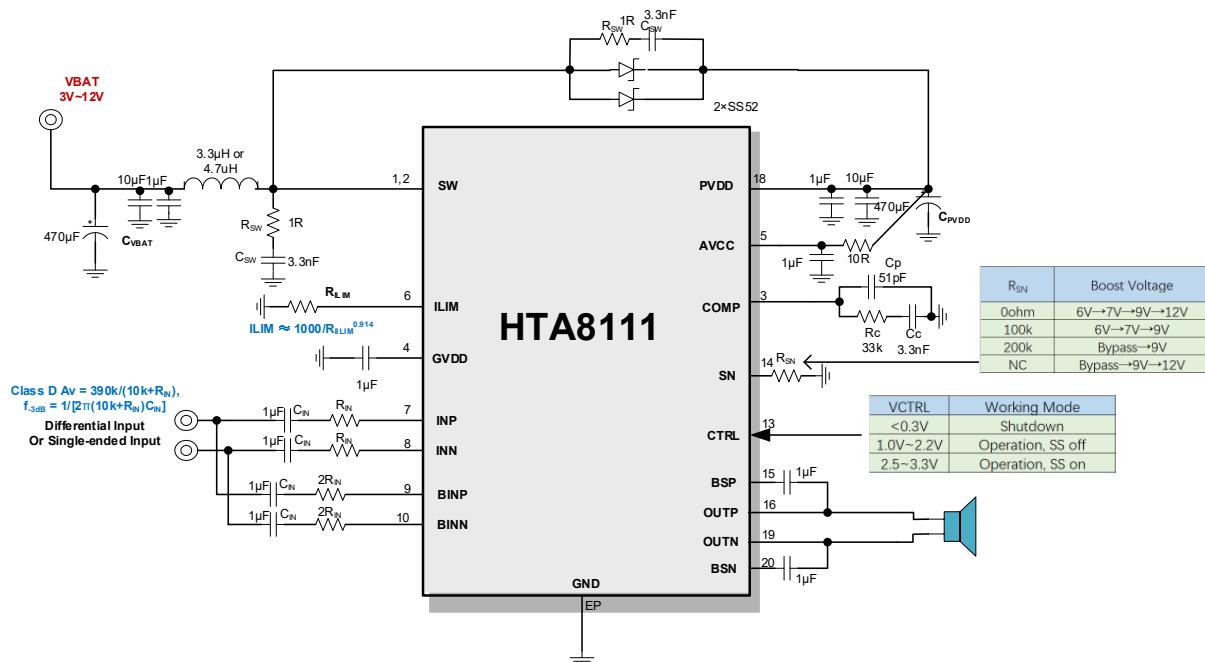
HTA8111是一款内置升压的单声道D类音频功率放大器，由锂电池供电时， THD+N=10%，能连续输出18W功率（4Ω 负载）。

HTA8111内置可动态调节的升压，可以提供一个适应不同输出功率的电压给D类功放，其可大幅提高系统效率，延长电池续航时间。HTA8111可配置升压限流值，以防止过大的电流尖峰。

HTA8111具有先进的扩频功能来抑制EMI。HTA8111的增益为32dB。

此外，HTA8111集成了输出端过流保护、片内过温保护、升压过压保护等功能。

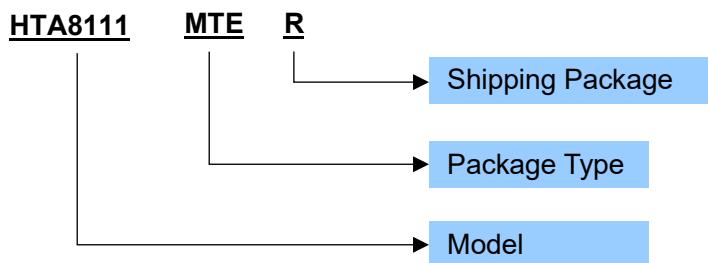
■ TYPICAL APPLICATION



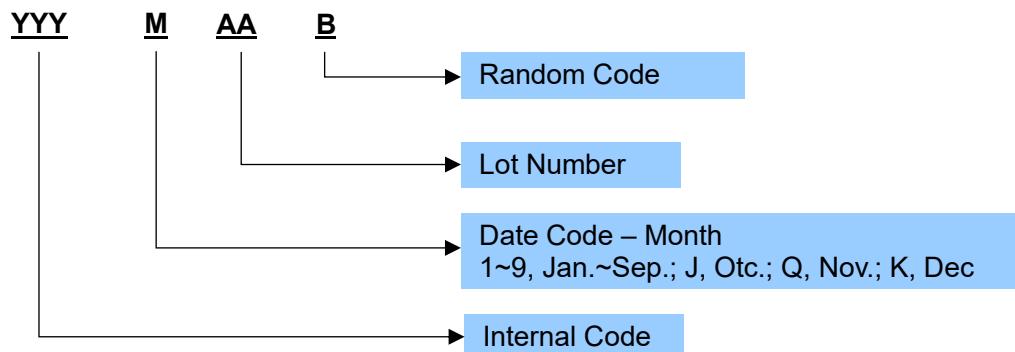
■ ORDERING INFORMATION

Part Number	Package Type	Marking	Operating Temperature Range	Shipping Package / MOQ
HTA8111MTER	ETSSOP20 (MTE)	HTA8111 YYYMAAB ¹	-40°C~85°C	Tape and Reel (R) / 3000pcs

Part Number

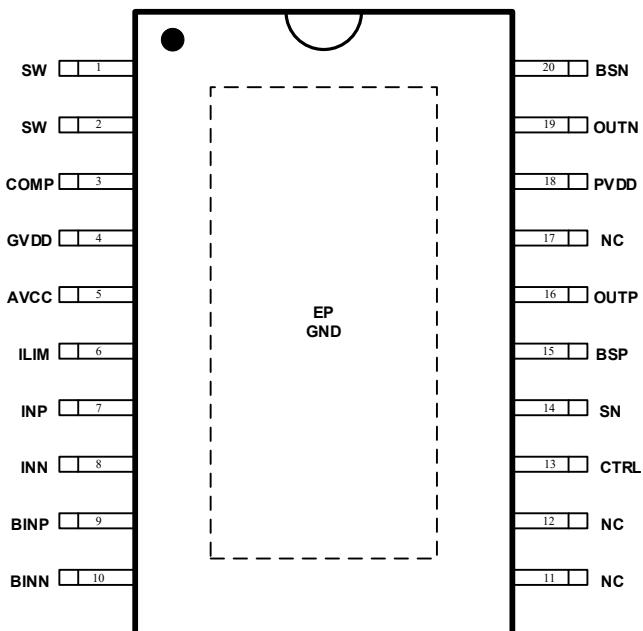


Production Tracking Code



¹ YYYMAAB is production tracking code

■ TERMINAL CONFIGURATION



HTA8111 Top View

■ TERMINAL FUNCTION

Terminal No.	Name	I/O ¹	Description
1, 2	SW	I	Boost and rectifying switch input. 升压整流开关输入端
3	COMP	O	Output of the internal error amplifier, the loop compensation network should be connected between this pin and the GND pin. 环路补偿脚, 接补偿电路到GND。
4	GVDD	O	Voltage regulator, connect 1uF to GND. 电压调节器, 接1uF到地。
5	AVCC	P	Analog power supply. 模拟供电
6	ILIM	I	Adjustable switch peak current limit. An external resistor should be connected between this pin and GND. 最大限流值设置端, 外部接电阻到地。
7	INP	I	Positive input (differential+) for audio amplifier. 功放输入正端
8	INN	I	Negative input (differential-) for audio amplifier. 功放输入负端
9	BINP	I	Audio positive input (differential+) for adaptive boost converter. 自适应升压的音频输入正端
10	BINN	I	Audio negative input (differential-) for adaptive boost converter. 自适应升压的音频输入负端
11,12,17	NC	-	No connection. 内部无连接
13	CTRL	I	Mode Control Terminal. 模式控制脚
14	SN	I	Boost converter output voltage selection. 升压电压选择
15	BSP	BST	Connection point for the OUTP bootstrap capacitor, which is used to create a power supply for the high-side gate drive for OUTP. OUTP自举电容位
16	OUTP	O	Positive pin for differential speaker amplifier output. 输出正端
18	PVDD	P	Power Supply for internal power circuitry. 功率电源
19	OUTN	O	Negative pin for differential speaker amplifier. 输出负端
20	BSN	BST	Connection point for the OUTN bootstrap capacitor, which is used to create a power supply for the high-side gate drive for OUTN. OUTN自举电容位
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

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

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