

带任意限幅的10.9W×2高保真音频功放

■ 特点

- 可任意配置的限幅功能
自由选择音频限制幅度，使输出音频信号限制在固定失真水平内
- 内置自动限温控制功能
- 支持并联单声道 (PBTL)
- 支持AB类与D类切换
- THD+N: 0.02% ($V_{DD} = 8.4V$, $R_L = 4\Omega$, $f_{IN} = 1kHz$, $P_o = 2 \times 1.0W$, BTL)
- 输出功率($f_{IN} = 1kHz$, THD+N = 10%)
2×10.9W ($V_{DD}=9.0V$, $R_L=4\Omega$, BTL)
18W ($V_{DD}=8.4V$, $R_L=2\Omega$, PBTL)
- VDD供电范围: 2.5V至9.8V
- 多种增益选择: 21dB, 25.5dB, 30dB
- 免滤波器数字调制, 直接驱动扬声器
- 保护功能: 过流/过热/欠压异常保护功能
- 无铅无卤封装, TSSOP20L-PP

■ 应用

- 蓝牙音箱/智能音响
- 便携式音箱
- 2.1声道小音箱
- 扩音器
- iphone/ipod/ipod docking
- 拉杆音箱
- 平板电脑, 笔记本电脑
- 便携式游戏机
- 小尺寸LCD电视/监视器
- MP4, 导航仪

■ 订购信息

| Part Number | Output Stage | Package Type | Marking | Operating Temperature Range | MOQ/Shipping Package |
|-------------|--------------|--------------|----------|-----------------------------|----------------------|
| HT876BMTET | BTL | TSSOP20L-PP | HT876MTE | -40°C ~ 85°C | Tube / 46PCS |
| HT876PMTET | PBTL | TSSOP20L-PP | HT876MTE | -40°C ~ 85°C | Tube / 46PCS |

■ 概述

HT876是一款立体声D类和AB类音频功率放大器。在D类模式, $V_{DD} = 9.0V$ 、THD+N=10%、4 Ω 负载、1kHz信号条件下, 能连续输出2×10.9W功率。

HT876具有可任意配置的限幅(Limiter)功能。限幅功能开启后, 即使输入信号很大, 音乐输出也能被限制在指定的功率和THD+N之内, 满足不同音质体验和保护喇叭的需求。

HT876还具有自动限温控制(TFB)功能, 在高功率输出、高环境温度、AB类模式低效率等情况下导致芯片片内温度较高时, 芯片能自动降低系统增益, 避免芯片进入过温关断保护模式, 在保证音乐品质的前提下显著提升音乐峰值功率。

此外, HT876内部集成免滤波器调制技术, 能够直接驱动扬声器, 内置的关断功能使待机电流最小化, 还集成了输出端过流保护、片内过温保护和电源欠压异常保护等功能。

2×10.9W Class D Audio Amplifier with Flexible Limiter

■ FEATURES

- Flexible Limiter Function adjusted by outside resistor so that the output music is limited under a preset THD+N and power
- Integrated Thermal Foldback (TFB) Function Significantly increase the peak audio power
- Paralleled Bridge Tied Load (PBTL)
- Both Class D and Class AB is available
- THD+N: 0.02% ($V_{DD} = 8.4V$, $R_L = 4\Omega$, $f_{IN} = 1kHz$, $P_o = 2 \times 1.0W$, BTL)
- Output Power ($f_{IN} = 1kHz$, THD+N = 10%)
 $2 \times 10.9W$ ($V_{DD} = 9.0V$, $R_L = 4\Omega$, BTL)
 $18W$ ($V_{DD} = 8.4V$, $R_L = 2\Omega$, PBTL)
- Power Supply V_{DD} : 2.5V~9.8V
- Multiple Gain Available: 21dB, 25.5dB, 30dB
- Filter-less Modulation
- Thermal/Low voltage malfunction prevention function with auto recovery
- Pb-free Packages, TSSOP20L-PP

■ APPLICATIONS

- Bluetooth/Smart Speakers
- Portable Speakers
- 2.1Channel Speakers
- Megaphone
- Portable Gamers
- MP4, GPS
- LCD TV/Monitor
- Tablet PC/Note Book

■ ORDERING INFORMATION

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■ DESCRIPTION

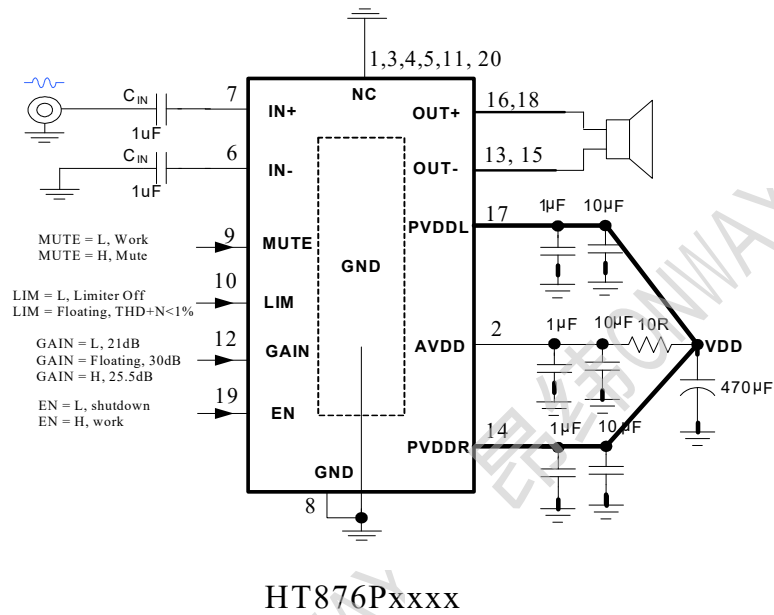
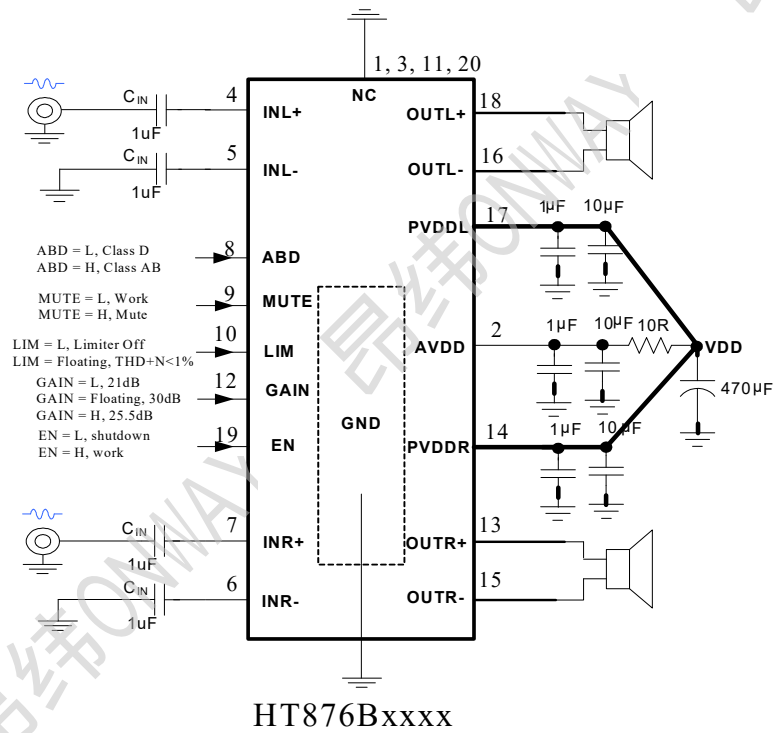
HT876 is a stereo Class D and Class AB audio amplifier, which can deliver 2×10.9W (4Ω Load, BTL mode) power at the condition of $V_{DD} = 9.0V$, THD+N = 10%, 1kHz sine wave in Class D mode.

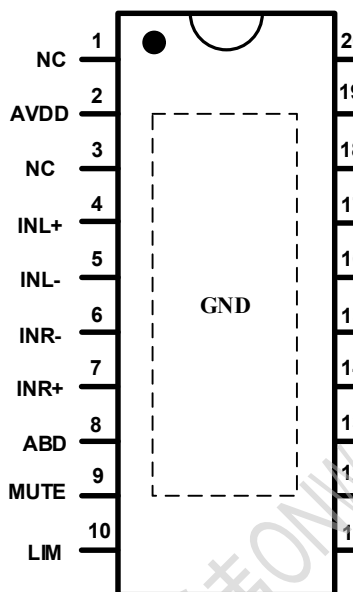
HT876 integrates adjustable Limiter Function, which can be set by a resistor at the LIM pin to ground or AVDD, so that the output music can be limited below the preset power and THD+N.

The HT876 Thermal Foldback (TFB) is designed to protect the HT876 from excessive die temperature in case of the device being operated beyond the recommended temperature or power limit (more easily happened in Class AB mode), or with a weaker thermal system than recommended. The TFB works by reducing the on-die power dissipation by reducing Gain if the temperature trig point is exceeded, so that the peak audio power is significantly increased.

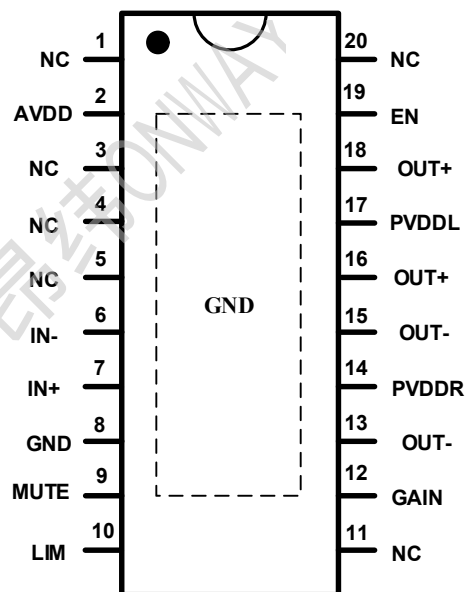
HT876 has a filter-less modulation circuit which can directly drive speakers. HT876 can be shut down so that the power consumption can be minimized. As for protection function, over temperature protection function and low supply voltage malfunction preventing function are also prepared.

■ TYPICAL APPLICATION



■ TERMINAL CONFIGURATION


HT876Bxxxx Top View



HT876P Top View

■ TERMINAL FUNCTION¹

| HT876B Terminal No. | PIN NAME | I/O | Description |
|---------------------|----------|-----|---|
| 1, 3, 11, 20 | NC | / | No connection inside the device, connect to GND for better thermal performance |
| 2 | AVDD | P | Analog power supply terminal |
| 4 | INL+ | I | Positive input terminal (differential+) for left channel |
| 5 | INL- | I | Negative input terminal (differential-) for left channel |
| 6 | INR- | I | Negative input terminal (differential-) for right channel |
| 7 | INR+ | I | Positive input terminal (differential+) for right channel |
| 8 | ABD | I | Class AB and Class D switch terminal; configure the device to operate in Class AB mode when it is pulled high, and Class D mode when it is pulled low |
| 9 | MUTE | I | Mute control terminal; configure the device to operate in mute mode when it is pulled high |
| 10 | LIM | I | Limiter function terminal; disable the function when it is pulled low |
| 12 | GAIN | O | Gain selection terminal |
| 13 | OUTR+ | O | Positive output terminal (BTL+) for right channel |
| 14 | PVDDR | O | Power supply terminal for right channel |
| 15 | OUTR- | O | Negative output terminal (BTL-) for right channel |
| 16 | OUTL- | O | Negative output terminal (BTL-) for left channel |
| 17 | PVDDL | P | Power supply terminal for left channel |
| 18 | OUTL+ | O | Positive output terminal (BTL+) for left channel |
| 19 | EN | I | Enable terminal; the device goes into shutdown mode when it is pulled low |
| PAD | GND | G | Power ground |

¹ I: input, O: output, P: power, G: ground