

3.2W高性能数字单声道D类音频功率放大器

3.2W High Performance, Mono Class D Audio Amplifier

■ FEATURES

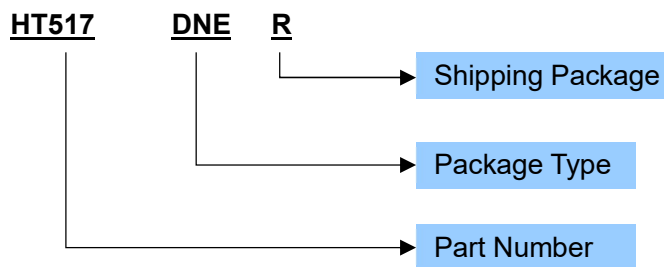
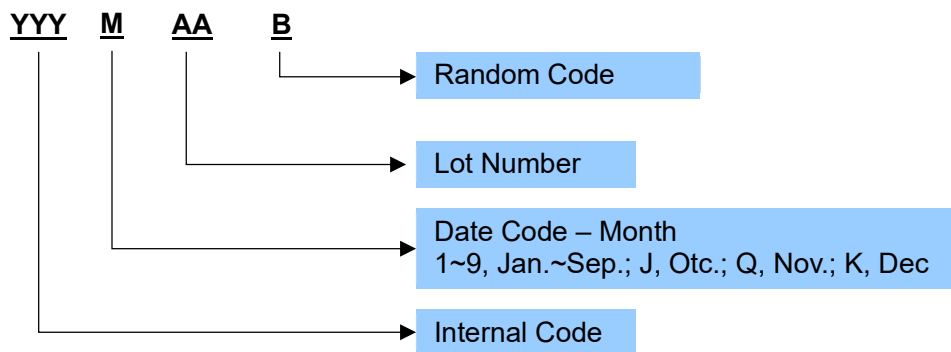
- Power Supply VDD: 2.5-5.5V;
- Low Quiescent Current: 2.7mA @VDD = 3.6V
- Low Output Noise: 50uV
- Low Pop Noise
- Flexible Audio I/O
 - LJ (Left, Right, or Left/2+Right/2 Output), 16bit, 24bit or 32 bit; TDM input, 16bit or 32bit
 - 8k, 16k, 32k, 44.1k, 48k, 88.2k, 96kHz Sample Rates
 - No MCLK Required
- Output Power
 - 1.60W (V_{DD}=3.6V, R_L=4Ω, THD+N=10%)
 - 3.20W (V_{DD}=5.0V, R_L=4Ω, THD+N=10%)
 - 180mW (V_{DD}=3.6V, R_L=32Ω, THD+N=1%)
- THD+N= 0.04% (P_o=1W, R_L=4Ω, V_{DD} = 3.7V)
- Adjustable Gain: -0.7, 5.3, 8.3, 12.3, 15.3dB
- Clock Error, Over Current, Undervoltage, and Overtemperature Protection
- Pb-free Packages, DFN2×3-8L, ESOP8
- 电源供电: VDD 2.5-5.5V;
- 低静态电流: 2.7mA @ VDD = 3.6V
- 低输出噪声: 50uV
- 低pop声
- 灵活的音频输入:
 - 左对齐 (输出左、右或左/2+右/2可选择), 16bit, 24bit 或 32 bit; TDM 输入, 16bit或32bit
 - 8k, 16k, 32k, 44.1k, 48k, 88.2k, 96kHz 采样频率
 - 无需MCLK
- 输出功率:
 - 1.60W (V_{DD}=3.6V, R_L=4Ω, THD+N=10%)
 - 3.20W (V_{DD}=5.0V, R_L=4Ω, THD+N=10%)
 - 180mW (V_{DD}=3.6V, R_L=32Ω, THD+N=1%)
- THD+N= 0.04% (P_o=1W, R_L=4Ω, V_{DD} = 3.7V)
- 增益可调: -0.7, 5.3, 8.3, 12.3, 15.3dB
- 保护: 时钟错误、过流、欠压、过温保护等
- DFN2×3-8L, ESOP8封装

■ APPLICATIONS

- OWS and other earphone devices
- Smart Home
- IoT Devices
- Smart Speakers
- Smart Toys
- Gaming Devices
- Other Li-ion cell/5V Devices
- OWS耳机或其他耳机设备
- 智能家居
- 游戏设备
- 智能玩具
- 智能音箱
- IoT设备
- 其他锂电/5V设备

ORDERING INFORMATION

Part Number	Package Type	Marking	Operating Temperature Range	MOQ/Shipping Package
HT517DNER	DFN2×3-8L	HT517 YYYMAAB ¹	-40℃~85℃	TBD / Tape and Reel
HT517SPER	ESOP8	HT517 YYYMAAB ²	-40℃~85℃	TBD / Tape and Reel

Ordering Number

Production Tracking Code

¹ YYYMAAB is production tracking code

² YYYMAAB is production tracking code

DESCRIPTION

The HT517 is an easy-to-use, low-cost, I²S input mono Class D audio amplifier that drives up to continuous 3.2W into 4ohm speaker with 5V power supply, and 180mW into 32ohm speaker with 3.7V power supply.

HT517 integrates an DA converter, the LJ interface supports up to 32bit width, 96kHz sample rate.

The built-in Class D amplifier also integrates spread spectrum function. The gain of the amplifier is also adjustable.

The Device is available in DFN2×3-8L and ESOP8 package.

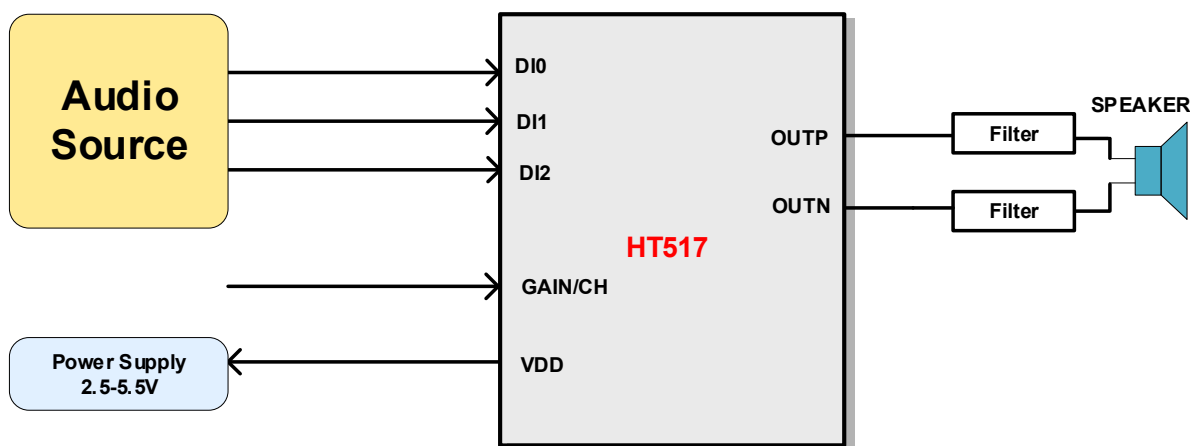
HT517是一款低成本的I²S输入单声道输出D类音频功率放大器。其在5V供电时可提供最大3.2W的输出功率；在3.7V供电时可提供最大180mW的输出功率。

HT517内部集成了DA转换器，其LJ输入最大支持32-bit字节，并且可自动监测采样频率，最高支持96kHz。

HT517集成的D类音频功放还具有增益可调、扩频等功能。

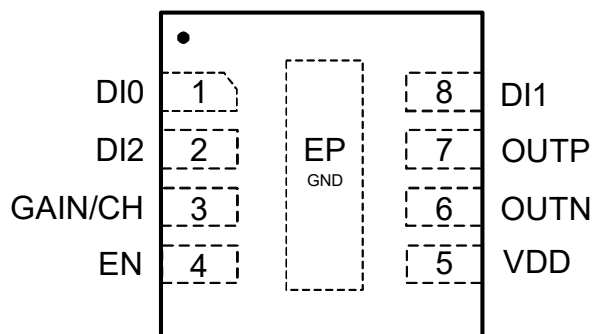
该产品提供DFN2×3-8L和ESOP8封装。

TYPICAL APPLICATION

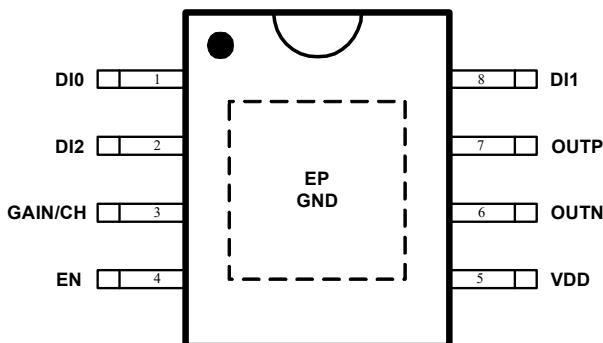


GAIN/CH pin	System Gain
Directly connected to GND	15.3dBV
Floating	11.3dBV
Directly connected to VDD	8.3dBV
Connected to VDD thru 100k resistor	5.3dBV
Connected to GND thru 100k resistor	-0.7dBV

■ TERMINAL CONFIGURATION



DFN2×3-8L Top View



ESOP8 Top View

■ TERMINAL FUNCTION

Terminal No.	Name	I/O ¹	Description
1	DI0	I	Digital Audio Interface 0. 数字音频接口 0
2	DI2	I	Digital Audio Interface 2. 数字音频接口 2
3	GAIN/CH	I	Gain and channel selection. Select the amplifier gain. Select the channel and DI configuration in TDM mode (in TDM mode, the gain is fixed at 12dB) 增益和通道选择。通过该引脚，可选择功放的增益，可选择 TDM 的通道和 DI 引脚的设置
4	EN	I	Enable pin, when EN pulls low, the device is in Shutdown mode. 使能脚，接地时器件关闭。
5	VDD	P	Power Supply. 电源
6	OUTN	O	Negative pin for differential speaker amplifier. 功放输出负端
7	OUTP	O	Positive pin for differential speaker amplifier. 功放输出正端
8	DI1	O	Digital Audio Interface 1. 数字音频接口 1
EP	GND	G	Ground pad, also provides thermal connection from the device to the board. 地，同时为器件散热通道。

¹ I: Input; O: Output; G: Ground; P: Power