

HT2145 产品简介

HT2145 Brief Introduction

中文版 (2-3页)

English Version (Page 4 - 6)

2.6W低EMI防削顶单声道免滤波D类音频功率放大器

■ 特点

- 防削顶失真功能(Anti-Clipping Function, ACF)
- 优异的全带宽EMI抑制性能
- 免滤波器数字调制, 直接驱动扬声器
- 高输出功率
 - 2.6 W×1ch ($V_{DD}=5.0V$, $R_L=4\Omega$, THD+N=10%)
 - 0.8 W×1ch ($V_{DD}=3.6V$, $R_L=8\Omega$, THD+N=10%)
- 高效率
 - 89% ($V_{DD}=5.0V$, $R_L=8\Omega$, $P_o=1W$)
 - 84% ($V_{DD}=3.6V$, $R_L=8\Omega$, $P_o=600mW$)
- 卓越的“咔嗒-噼啪”(Click-Pop)噪声抑制性能
- 高信噪比SNR: 95dB ($V_{DD}=3.6V$, $A_v=18dB$)
- 低关断电流: 0.01 μA
- 内置18dB恒定增益
- 过流保护功能
- 过热保护功能
- 欠压异常保护功能
- 无铅封装, SOP-8

■ 应用

- 手机, 移动电话
- 掌上电脑PDAs
- 导航仪GPS
- PMP/MP4播放器
- 便携式游戏机
- 便携式音箱
- USB音箱
- iphone, MP3/4 docking
- 数码相框

■ 概述

HT2145是一款低EMI的, 防削顶失真的, 单声道免滤波D类音频功率放大器, 在5V电源, 10% THD+N, 4 Ω 负载条件下, 输出3.4W高功率, 在手机终端应用中(平均功率100mW左右)维持高效率并提供AB类放大器的性能。

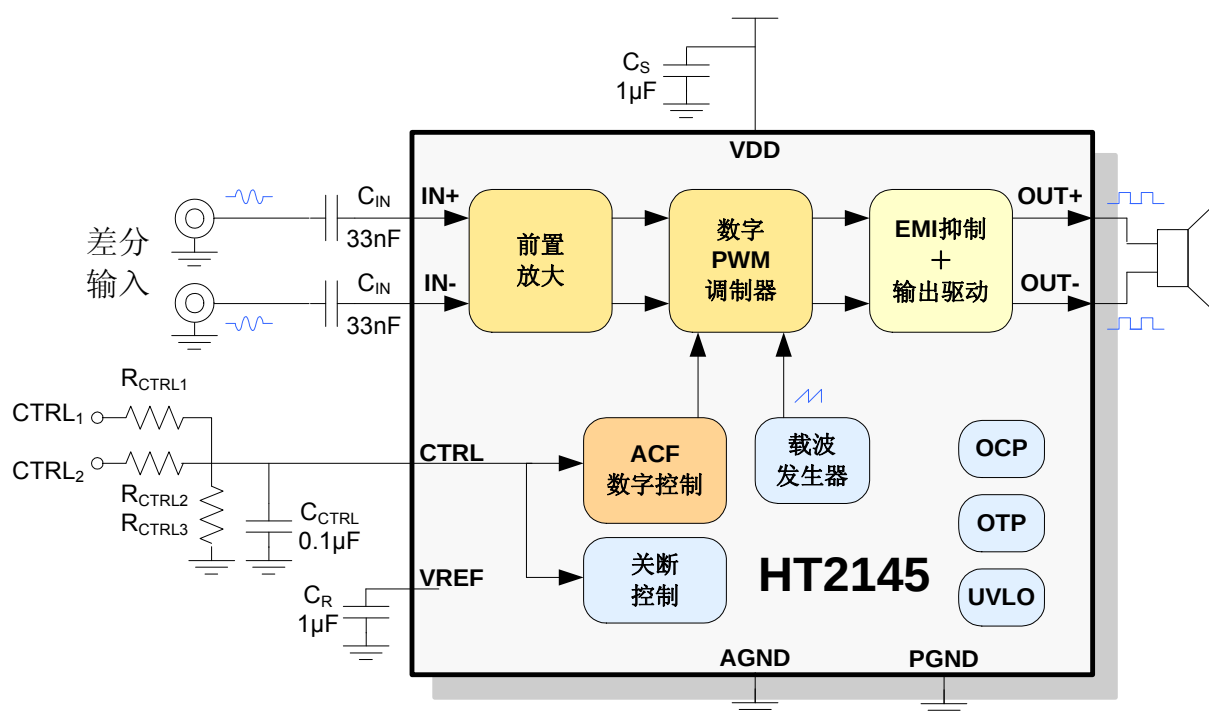
HT2145的最大特点是防削顶失真(ACF)输出控制功能, 可检测并抑制由于输入音乐、语音信号幅度过大所引起的输出信号削顶失真(破音), 也能自适应地防止在电池应用中由电源电压下降所造成的输出削顶, 显著提高音质, 创造非常舒适的听音享受, 并保护扬声器免受过载损坏。针对不同音源应用, 防削顶具有ACF-1和ACF-2两种模式, 以达到最佳音效, 同时芯片也提供了ACF-Off模式。

HT2145具有独有的电磁辐射(EMI)抑制技术和优异的全带宽低辐射性能, 辐射水平在不加任何辅助设计时仍远在FCC Part15 Class B 标准之下, 不仅避免了干扰其他敏感电路还降低了系统设计难度。

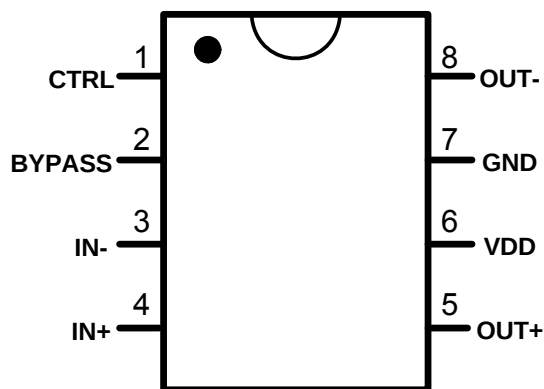
HT2145内部集成免滤波器数字调制技术, 能够直接驱动扬声器, 并最大程度减小脉冲输出信号的失真和噪音, 在同类的移动产品应用中, 其极低的失真和噪声指标位列同类前列。输出无需滤波网络, 极少的外部元器件节省了系统空间和成本, 是便携式应用的理想选择。

此外, HT2145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。

■ 典型应用图



■ 引脚分布图



8引脚SOP 顶视图

■ 订购信息

H T 2 1 4 5 X X

包装和供货形式

封装形式

产品型号	封装形式	顶面标记	工作温度范围 (扩展工业级)	包装和供货形式
HT2145MR	SOP-8	HT2145 WXYZ ^{*1}	-40℃~85℃	卷带装 2500颗/盘
HT2145MT	SOP-8	HT2145 UVWXYZ ^{*1}	-40℃~85℃	管装 100颗/盘

*1:WXYZ/UVWXYZ为内部生产跟踪随机编码。

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2.6W Low-EMI Anti-Clipping Mono Class D Audio Power Amplifier

■ FEATURES

- Anti-Clipping Function(ACF)
- Excellent EMI Suppression Performance
- Optimized PWM Output Stage Eliminating LC Output Filter
- Maximum Output
 - 2.6 W×1ch ($V_{DD}=5.0V$, $R_L=4\Omega$, THD+N=10%)
 - 0.8 W×1ch ($V_{DD}=3.6V$, $R_L=8\Omega$, THD+N=10%)
- Efficiency
 - 89% ($V_{DD}=5.0V$, $R_L=8\Omega$, $P_o=1W$)
 - 84% ($V_{DD}=3.6V$, $R_L=8\Omega$, $P_o=600mW$)
- Excellent Click-Pop Noise Reduction Function
- High S/N Ratio, 95dB ($V_{DD}=3.6V$, $A_v=18dB$)
- Low Shutdown Current, 0.01 μA
- Internal Fixed Gain of 8 V/V (18dB)
- Over-Current Protection Function
- Thermal Protection Function
- Low Voltage Malfunction Prevention Function
- Pb-Free Packages, 8-pin SOP

■ APPLICATIONS

- Mobile phones, iPhone, Mp3/Mp4 docking
- PDAs, GPS, Digital Photo Frame
- PMP/MP4 players, Portable Gamers
- Portable Speakers, USB Speakers

■ GENERAL DESCRIPTION

HT2145 is a low-EMI, Anti-Clipping, filter-less, monaural Class D power amplifier with an output power of 3.4W. It has a high efficiency for mobile applications with Class AB amplifier performance.

HT2145 features Anti-Clipping Function (ACF) which detects and suppresses output signal clippings due to the over level inputs of music or voice signals. The ACF function also can adapt the output clippings caused by power supply voltage down in battery applications. It improves acoustical quality considerably, gives great listening enjoyment, and prevents speaker from overload damaging. According to different audio sources, two modes, ACF-1 and ACF-2, could be selected to achieve a best audio performance.

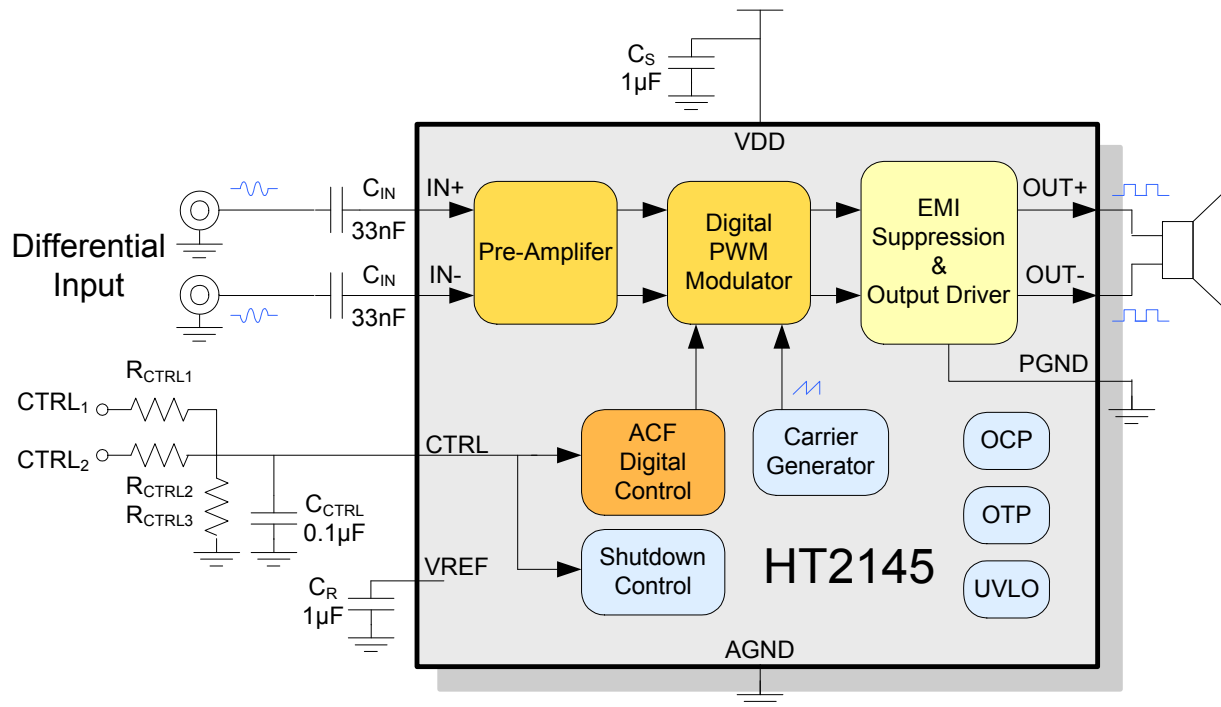
HT2145 has excellent EMI radiation suppression characteristics, well below the FCC Part15 Class B standards, simplifying system design and lowering system cost.

HT2145 has a filter-less modulation circuit which directly drives speakers, realizes highest standard low distortion and low noise characteristics among digital amplifier ICs for mobile use. Thanks to filter-less, circuit design with fewer external parts can be made in portable applications.

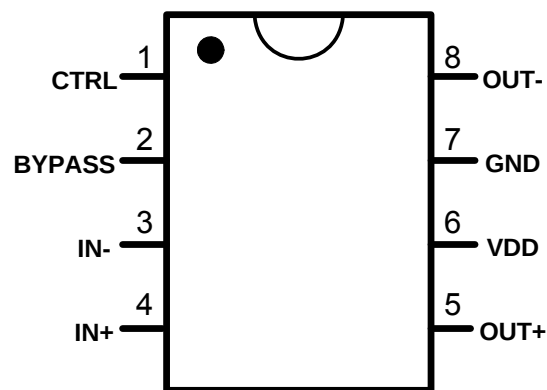
HT2145 has shutdown mode, over-current protection, over-temperature protection and low supply voltage malfunction preventing function.

HT2145 is available in SOP-8 package.

■ TYPICAL APPLICATION



■ TERMINAL CONFIGURATION



8-pin SOP Top View

ORDERING INFORMATION

H	T	2	1	4	5	X	X
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Shipping Package

Package Type

Part Number	Package Type	Marking	Operating Temperature Range	MOQ/Shipping Package
HT2145MR	SOP-8	HT2145 WXYZ *1	-40℃~85℃	Tape & Reel 2500 PCS
HT2145MT	SOP-8	HT2145 UVWXYZ *1	-40℃~85℃	Tube 100 PCS

*1:"WXYZ/UVWXYZ" is production track code.

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