



**2.2W×2 Class-D Audio Power Amp.  
with Headphone Output**

**Preliminary**

**PT2001**

## DESCRIPTION

The PT2001 is a Class-D power amplifier designed for audio equipments, maximum output power can reach up to 2.2W x 2 (VDD= 5V, RL= 4Ω, THD= 10%). The PT2001 composed of exclusively designed Class-D circuitry (patented) by PTC, along with the most advanced semi-conductor technology. When compared to the traditional Class-AB amplifiers, the PT2001's has a much higher efficiency (>85%), low heat dissipation, and produces superior audio quality. PT2001's external circuitry is simple and easily accessible, and consists of flawless self-protection capabilities. The chip's packaging is small, thus it occupies an insignificant amount of space on the circuit board; therefore, making it the predominant choice when it comes to audio amplifiers.

## FEATURES

- CMOS technology
- Stereo, differential input for improved CMRR.
- Maximum output power 2.2W (4Ω) x 2 @ THD=10%
- Operating on Both BTL (Bridged Tight Loaded) and SE (Single Ended) configuration
- No LC filter needed when driving speakers in BTL configuration.
- Driving 32Ω headphone on SE configuration.
- Highly Improved PSRR (>70dB) for powered from noisy PC-BUS power.
- Automatic gain-reduced during headphone attached to the amplifier.
- Shutdown function
- POP noiseless in shutdown and power ON/OFF period
- Built-in short circuit protection
- Built-in overheat protection
- High efficiency (8Ω load>85%), low heat dissipation
- TSSOP 20 pins miniature packages for saving PCB size.

## APPLICATIONS

- Portable media player
- Portable DVD player
- LCD monitor
- Small multimedia speakers
- Hand-free phone
- Laptop
- Other audio applications

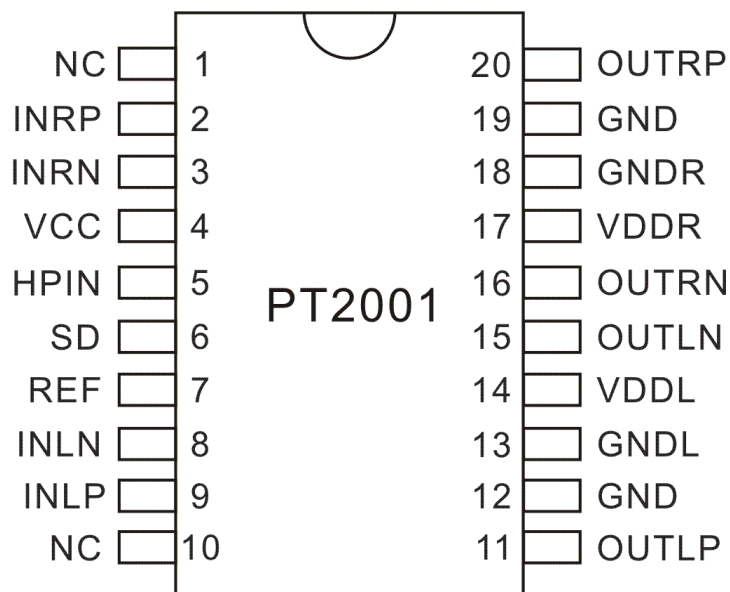


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**PIN CONFIGURATION**



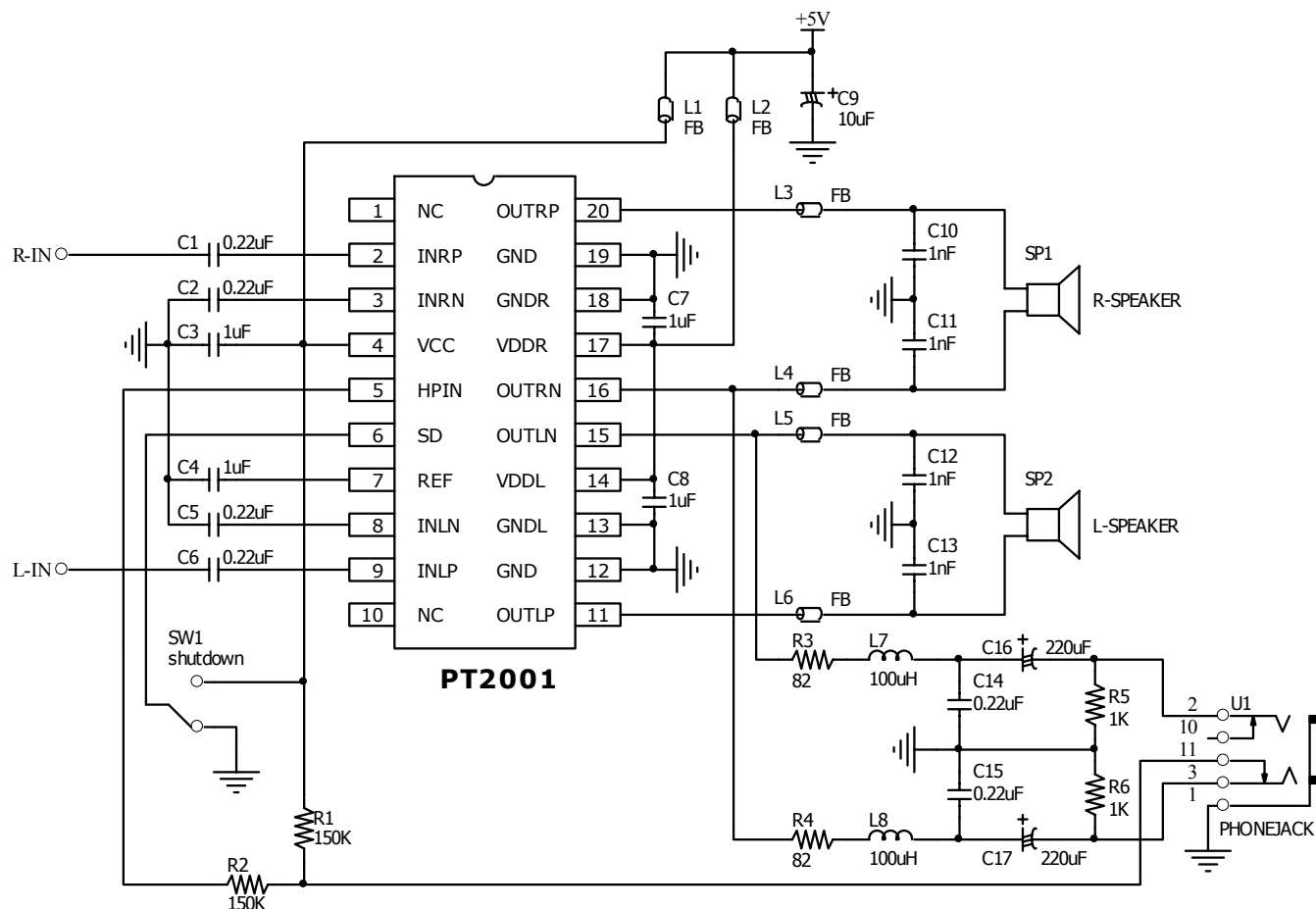


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# APPLICATION CIRCUIT DIAGRAM



## Notes:

1. R3 and R4 is use to reduce gain when headphone is attached to the PT2001, recommend range is from 56Ω to 82Ω value depends on headphone's sensitivity. Larger resistance will limit the maximum volume of headphone and also reduced residual noise.
2. Speaker Output CAN NOT use LC low pass filter because the chip would malfunction.
3. Parts List :

PTC Parts No.	Vendor's Name	Component Type	Vendor No.	Specification
L1, L2, L3, L4, L5, L6	3L COILS	Ferrite Bead	SMB-201209-F2-121P	DCR<0.1Ω Isat>3A, Z=120Ω@100MHz
L7, L8	3L COILS	Inductor	SMTSDR322520C-101K	L=100μH, Isat=100mA



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## ORDER INFORMATION

Valid Part Number	Package Type	Top Code
PT2001-TX	20 Pins, TSSOP, 173mil	PT2001-TX