

THE STYLE SUTRA PZINVC68052165

THE STYLE SUTRA TPA3255 Digital Audio Amplifier Board User Manual

1. INTRODUCTION

The THE STYLE SUTRA TPA3255 Digital Audio Amplifier Board is a high-performance Class D power amplifier designed to deliver true high-end sound quality with exceptional efficiency. This device incorporates an advanced integrated feedback design and proprietary high-speed gate driver error correction, ensuring low distortion across the entire audio frequency band.

Operating in AD mode, this amplifier board can drive significant loads, making it suitable for various audio applications. It combines high power efficiency with minimal idle losses, achieved through optimized MOSFETs and gate driver schemes. This manual provides essential information for the proper setup, operation, and maintenance of your TPA3255 amplifier board.

2. KEY FEATURES

- **High-Performance Class D Amplification:** Utilizes the TPA3255 chip for superior audio fidelity and efficiency.
- **Advanced Feedback Design:** Integrated feedback and gate driver error correction minimize distortion.
- **High Power Output:** Capable of driving up to 2x 315W into 4Ω or 2x 150W into 8Ω (at 1.5% THD).
- **Efficient Operation:** High power efficiency with low idle losses (less than 2.5W).
- **Analog Input Interface:** Features a 2VRMS analog input for seamless connection with DACs like TI's PCM5242.
- **Wide Power Supply Range:** Operates with a DC input from 19V to 50V.

3. SETUP INSTRUCTIONS

Follow these steps to correctly set up your TPA3255 Digital Audio Amplifier Board:

1. **Prepare Components:** Ensure you have a compatible DC power supply (19V-50V, recommended 5A current), audio source, and speakers.
2. **Connect Audio Input:** Use a 3.5MM stereo wired socket interface (3P) to connect your audio source to the amplifier board's input terminals. Ensure a secure connection.

3. **Connect Speakers:** Connect your speakers to the output terminals of the amplifier board. Pay close attention to speaker polarity (+ and -) to ensure correct audio phasing.
4. **Connect Power Supply:** Connect the DC power supply to the designated power input terminals on the board.
WARNING: Ensure the power supply voltage is within the specified range (DC19V to DC50V) and observe correct polarity to prevent damage to the board.
5. **Initial Power On:** After all connections are secure, power on the DC supply. The amplifier board should now be ready for operation.



Figure 3.1: Angled view of the amplifier board, highlighting the input and output terminals for connection.

4. OPERATING INSTRUCTIONS

Once the amplifier board is set up, follow these guidelines for operation:

- **Power On:** Turn on your audio source and then the amplifier's power supply.
- **Volume Control:** Adjust the volume level from your audio source or pre-amplifier. This board does not include onboard volume control.

- **Audio Playback:** Begin playing audio from your source. Verify that sound is being produced clearly through the connected speakers.
- **Power Off:** When finished, turn off the amplifier's power supply first, then your audio source.

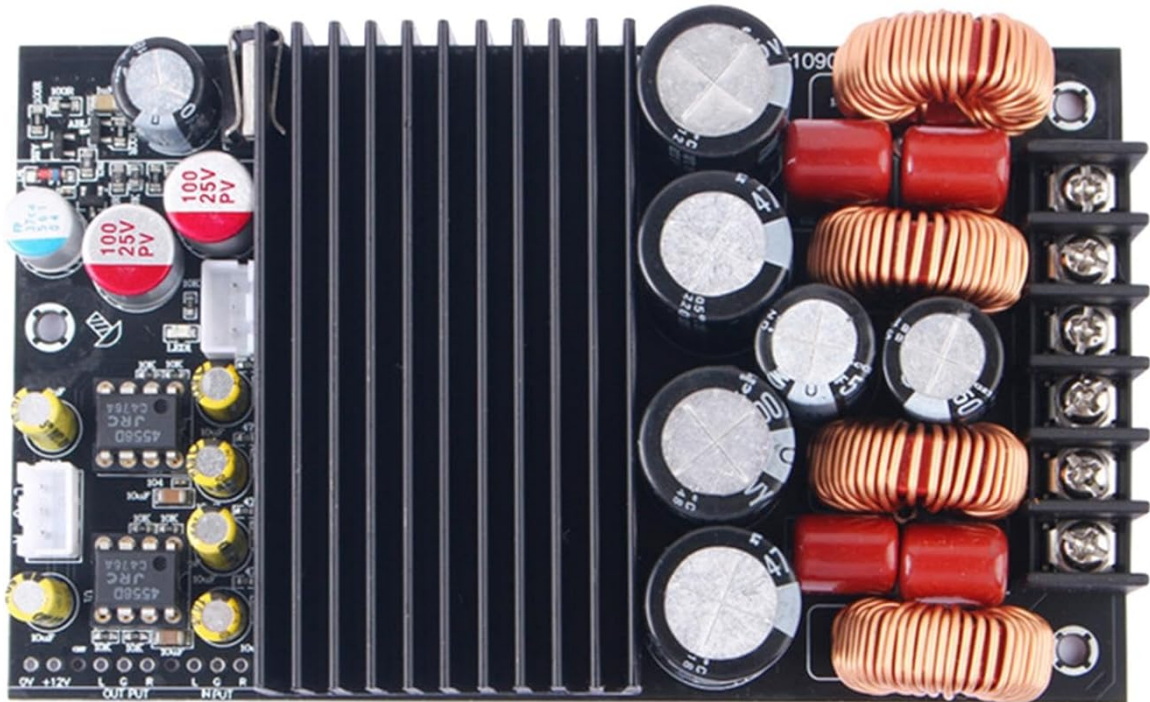


Figure 4.1: Top view of the amplifier board, showing the heatsink and main components.

5. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your amplifier board:

- **Keep Clean:** Regularly clean the board with a soft, dry cloth. Avoid using liquids or abrasive cleaners.
- **Ensure Ventilation:** The heatsink is crucial for dissipating heat. Ensure the board is placed in a location with adequate airflow and is not obstructed.
- **Avoid Extreme Conditions:** Do not expose the board to excessive moisture, dust, or extreme temperatures.
- **Secure Connections:** Periodically check all wiring connections to ensure they are tight and free from corrosion.



Figure 5.1: Close-up view of the amplifier board's capacitors and inductors, essential for stable operation.

6. TROUBLESHOOTING

If you encounter issues with your amplifier board, refer to the following troubleshooting guide:

Problem	Possible Cause	Solution
No Sound Output	• Incorrect power supply connection • Audio input not connected • Speaker wires loose or incorrect polarity • Faulty audio source	• Verify power supply voltage and polarity • Ensure audio input cable is securely connected • Check speaker connections and polarity • Test with a different audio source

Problem	Possible Cause	Solution
Distorted Sound	• Input signal too high • Speaker impedance mismatch • Power supply instability • Damaged speaker	• Reduce audio source volume • Ensure speakers match recommended impedance (4Ω or 8Ω) • Verify power supply stability and current capacity • Test with different speakers
Board Overheating	• Insufficient ventilation • Excessive load on outputs • Short circuit in speaker wiring	• Ensure adequate airflow around the heatsink • Verify speaker impedance is within limits • Check speaker wiring for any shorts

7. SPECIFICATIONS

Detailed technical specifications for the TPA3255 Digital Audio Amplifier Board:

- **Model:** PZINVC68052165
- **Input Method:** 3.5MM Stereo Wired Socket Interface (3P)
- **Work Efficiency:** >90%
- **Output Power (1.5% THD):**
 - 315W / 4Ω
 - 185W / 8Ω
- **Output Power (1% THD):**
 - 260W / 4Ω
 - 150W / 8Ω
- **Frequency Response:** 20Hz to 20KHz
- **Dynamic Range:** >100dB
- **Signal-to-Noise Ratio (SNR):** >111dB
- **Power Supply:** DC19V to DC50V (Recommended current: 5A)
- **Dimensions:** 122mm x 73mm x 30mm
- **Item Weight:** 287 g
- **Mounting Hardware:** 1 Car Audio Amplifier Board



Figure 7.1: Overhead view of the amplifier board, illustrating its compact design and component arrangement.

8. WARRANTY AND SUPPORT

For warranty information and technical support regarding your THE STYLE SUTRA TPA3255 Digital Audio Amplifier Board, please contact the seller or manufacturer directly. Specific warranty terms may vary based on your purchase location and retailer.

Manufacturer Contact Information:

Mukteshwarpuri Decor

Contact No: [7291860676](tel:7291860676)

Email: mukteshwarpuri3rd@gmail.com