

## Viodmss I500458602

# Viodmss SAMP-200 TPA3255 Stereo Amplifier Board User Manual

High-Performance Class D Digital Power Amplifier

## 1. INTRODUCTION

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Thank you for choosing the Viodmss SAMP-200 HiFi Dual Core TPA3255 Stereo Amplifier Board. This high-performance Class D digital power amplifier board is designed to deliver exceptional audio quality with high efficiency. It features two American TI-TPA3255 power amplifier modules, providing a robust output of up to 600W+600W. This manual provides essential information for the proper setup, operation, and maintenance of your amplifier board.

## 2. SAFETY INFORMATION

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- **Power Supply:** Use a stable DC power supply within the specified voltage range of 19V to 52V. Exceeding the maximum voltage can damage the board.
- **Polarity:** Ensure correct power supply polarity. Incorrect connection will cause damage.
- **Ventilation:** Ensure adequate ventilation around the amplifier board to prevent overheating, especially during high-power operation.
- **Handling:** Handle the board with care to avoid electrostatic discharge (ESD) damage. Avoid touching components unnecessarily.
- **Installation:** Installation should be performed by individuals familiar with electronic components and wiring.
- **Moisture:** Keep the amplifier board away from moisture and liquids.

## 3. PACKAGE CONTENTS

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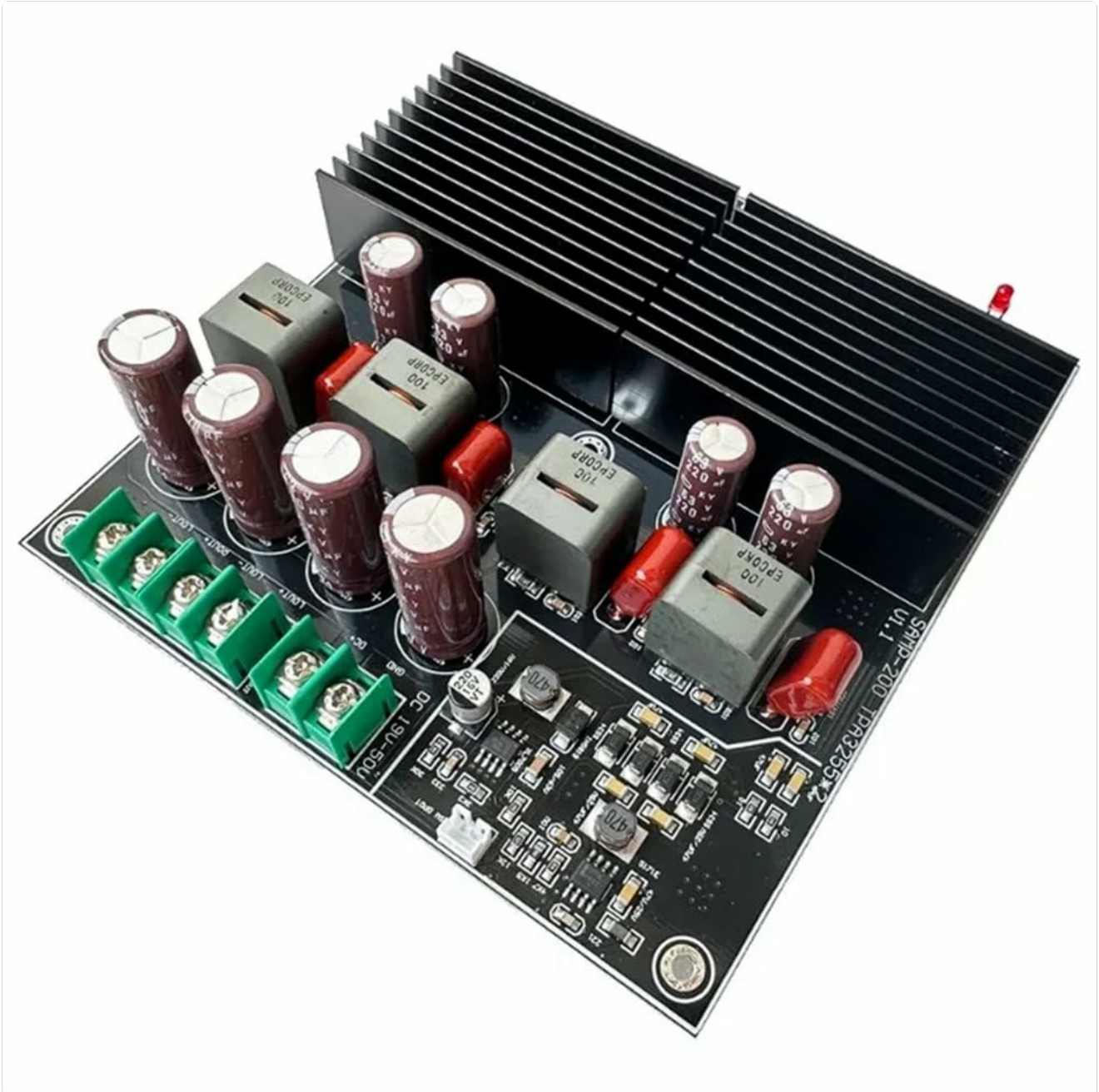
Please check the package for the following items:

- 1 x Viodmss SAMP-200 Digital Power Amplifier Board

If any items are missing or damaged, please contact your vendor.

## 4. PRODUCT OVERVIEW

The SAMP-200 amplifier board utilizes two TPA3255 modules, offering a dual-channel configuration for stereo audio. It incorporates an advanced integrated feedback design and proprietary high-speed gate driver error correction (PurePath Ultra HD) to maintain ultra-low distortion across the audio frequency band.



**Figure 1:** Viodmss SAMP-200 TPA3255 Stereo Amplifier Board. This image displays the top view of the amplifier board, highlighting the dual TPA3255 chips, inductors, capacitors, and various connection points for power input, audio input, and speaker outputs.

### Key Features:

- Dual TPA3255 power amplifier modules for enhanced output separation.
- Class D efficiency with high-end sound quality.
- Advanced integrated feedback design (PurePath Ultra HD).
- Low-loss sealed inductors and filter capacitors.
- 2 VRMS analog input interface for seamless DAC connection.

- Ultra-low power level idle losses (less than 2.5W).

## 5. SETUP INSTRUCTIONS

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### 5.1 Power Supply Connection

The amplifier board requires a DC power supply. Connect the positive (+) terminal of your power supply to the designated positive input terminal on the board, and the negative (-) terminal to the negative input terminal. The recommended voltage range is 19V to 52V DC. Ensure the power supply can provide sufficient current for your desired output power.

**Caution:** *Incorrect power supply polarity will cause irreversible damage to the amplifier board.*

### 5.2 Audio Input Connection

Connect your audio source (e.g., DAC, preamplifier) to the analog input interface of the amplifier board. The board supports a 2 VRMS analog input. Ensure proper left and right channel connections.

### 5.3 Speaker Output Connection

Connect your passive speakers to the corresponding output terminals on the amplifier board. Ensure correct polarity for each speaker (positive to positive, negative to negative). The board supports various speaker impedances:

- 2 ohms (up to 600W per channel)
- 4 ohms (up to 315W per channel)
- 8 ohms (up to 200W per channel)

**Note:** *The actual output power depends on the input power supply voltage and current. Higher voltage and current allow for greater output power.*

## 6. OPERATING INSTRUCTIONS

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### 6.1 Power On/Off

Once all connections are secure, apply power to the amplifier board. There is no dedicated power switch on the board itself; power is controlled by the external power supply. Remove power to turn off the board.

### 6.2 Audio Playback

Begin playing audio from your connected source. Adjust the volume level from your audio source or preamplifier. The amplifier board will amplify the incoming audio signal to drive the connected speakers.

### 6.3 Performance Considerations

- The front-end differential input circuit utilizes boost technology for improved dynamic range.
- The board is designed for low distortion across the 20Hz-30kHz frequency response range.
- Ensure the power supply voltage is appropriate for the desired output. For example, a 24V or 36V supply will result in lower output power compared to a 50V supply.

## 7. MAINTENANCE

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The Viodmss SAMP-200 amplifier board requires minimal maintenance. Follow these guidelines to ensure longevity:

- **Cleaning:** Keep the board free from dust and debris. Use a soft, dry brush or compressed air to gently clean

the surface. Do not use liquid cleaners.

- **Environment:** Operate the board in a clean, dry environment with stable temperature. Avoid extreme heat or cold.
- **Inspections:** Periodically inspect connections for looseness or corrosion.

## 8. TROUBLESHOOTING

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### 8.1 No Sound Output

- Check power supply connection and ensure it is within the specified voltage range (19V-52V DC) and correctly polarized.
- Verify audio input connections from your source.
- Ensure speaker wires are correctly connected to the output terminals and that speaker polarity is correct.
- Confirm your audio source is playing and its volume is turned up.

### 8.2 Distorted Sound

- Reduce the input volume from your audio source to prevent clipping.
- Check speaker impedance compatibility with the amplifier board.
- Ensure power supply is stable and providing sufficient current. Fluctuations can cause distortion.
- Inspect all connections for loose wiring or poor contact.

### 8.3 Overheating

- Ensure adequate ventilation around the amplifier board. Do not enclose it in a confined space without airflow.
- Reduce the output power or volume if operating at very high levels for extended periods.
- Verify speaker impedance is not too low, which can cause the amplifier to work harder and generate more heat.

## 9. SPECIFICATIONS

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Feature	Specification
Model Number	I500458602
Amplifier Chip	2 x TI TPA3255
Channels	2 (Stereo)
Output Power (Max)	600W + 600W (2 ohms)
Output Power (Typical)	315W + 315W (4 ohms), 200W + 200W (8 ohms)
Frequency Response	20Hz - 30kHz
Signal-to-Noise Ratio (+N)	0.006% at 1W/4 ohms; Less than 0.01% at clipping
Power Supply Voltage	19V to 52V DC
Maximum Supply Voltage	52 Volts
Input Interface	2 VRMS Analog Input

Feature	Specification
Mounting Type	Surface Mount
Material	ABS
Compliance	FCC
PCB Size	138mm x 128mm

## 10. WARRANTY AND SUPPORT

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For warranty information and technical support, please refer to the documentation provided by your retailer or contact Viodmss customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.