

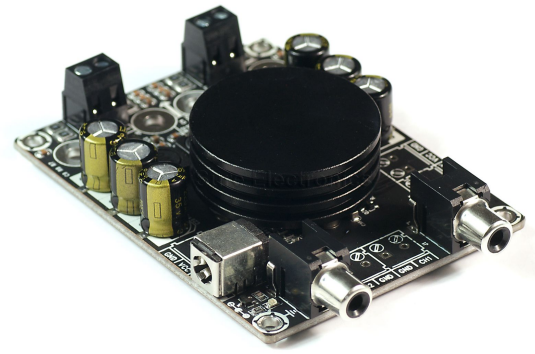
Low Power Stereo Series

2 x 50 Watt 4 Ohm

Class D

Audio Amplifier Board - TPA3116

(AA-AB32178)



Key Features:

- Output Power
50W@4Ohm 21V DC THD+N 10%
36W@4Ohm 21V DC THD+N 1%
- Power and Clip Indicator
- Temperature Control Fan (Optional)
- Full Protection
- 4-screw Easy Installation
- Weight: 144g/0.32 lbs (±10%)
- Size: 3.60inchX2.70inchX0.94inch

Electrical Specifications

Specifications typical @ +25°C , Powered by 21V DC, unless otherwise noted. Specifications subject to change without notice.

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|--------------------------|------------------------------|------|------|------|-------|
| Power Supply | - | 4.5 | 21 | 26 | VDC |
| Idle Power | SD Floating, FAN ON | - | - | - | W |
| | SD Floating, FAN OFF | - | 1.3 | 2.5 | W |
| Standby Power | SD Connected to GND, FAN OFF | - | 0.1 | 0.3 | W |
| Maximum Current | 100W @ 4Ohm | - | 5.29 | - | A |
| Efficiency | 50W @ 4Ohm | 87 | - | 92 | % |
| Minimum Load Impedance | - | 3.2 | - | - | Ω |
| Switching Frequency | SD Floating | - | 394 | - | KHz |
| Fan Active @ Temperature | - | - | - | - | °C |

Audio Performance

Specifications typical @ +25°C , Powered by 21V DC, unless otherwise noted. Specifications subject to change without notice.

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|------------------------|-------------------------------------|------|--------|------|-------|
| Gain | - | 24 | 25 | 26 | dB |
| Input Sensitivity(RMS) | @4Ω, 50W, 1KHz | - | 808 | - | mV |
| Input Impedance | - | - | 22 | - | KΩ |
| Output Power | @4Ω THD+N 1% | - | 36 | - | W |
| | @4Ω THD+N 10% | - | 50 | - | W |
| Bandwidth @ ±3dB | @4Ω | 20 | - | 20K | Hz |
| THD | @4Ω, 1W, 1KHz | - | 0.0299 | - | % |
| | @4Ω, 10W, 1KHz | - | 0.073 | - | % |
| Output Noise Level | A-weighting, Input Connected to GND | - | 82.8 | - | μV |
| SNR | 36W @4Ω THD+N 1% | - | 100 | - | dB |

Environmental Conditions:

- Humidity: 5-85% RH Non-condensing
- Operating Temperature Ambient: 0°C to +55°C
- Storage Temperature: -40°C to 85°C

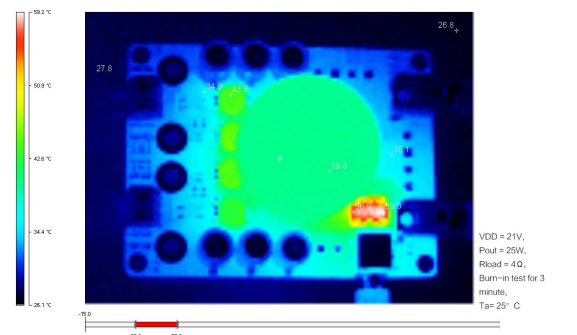
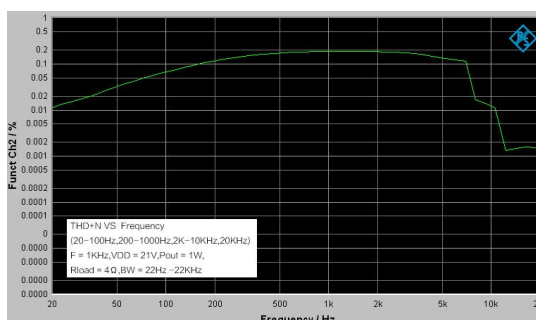
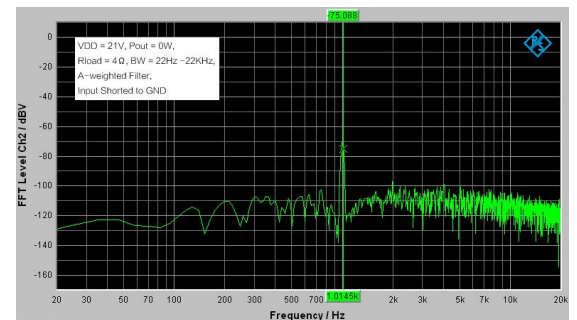
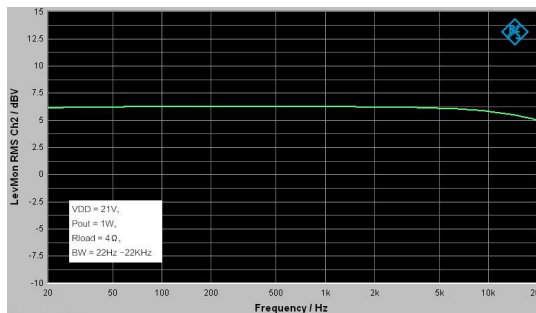
All these boards are per-tested with our power supply solution to comply with FCC and CE. For all customers who need those information, please contact our distributor or Sure Electronics. RoHS compliant will need an MOQ of 1000pcs per order.

Ready for:



RoHS

Typical Performance Graphs



All parameters were tested with Rohde & Schwarz UPV audio analyzer (AES17 filter enabled) and AP AUX0025 filter. For authorized distributors and OEM customers who need more detailed performance graphs and parameter settings, please send an inquiry e-mail to us. (Not available for retail customers)

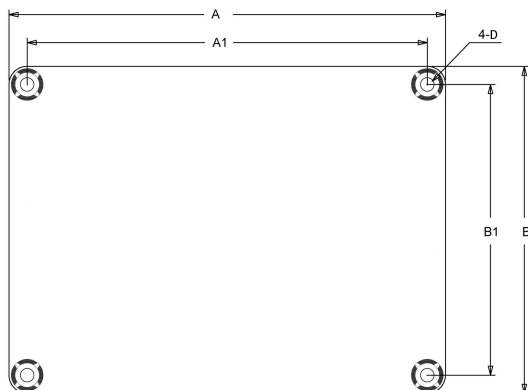
Model Selection Guide

| Model Number | Output Power | Power Supply Range | Typical Load | Amplifier IC | Dimension |
|--------------|--------------|--------------------|--------------|--------------|---------------|
| AA-AB32131 | 2 X 2Watt | DC6-12V | 4Ω | PAM8803 | 3"X2", #1 |
| AA-AB32232 | 2 X 10Watt | DC7-15V | 8Ω | PAM8610 | 3"X2" |
| AA-AB32999 | 2 X 15Watt | DC10-26V | 4Ω | PAM8615 | 3"X2" |
| AA-AB32231 | 2 X 8Watt | DC8-19V | 8Ω | TPA3110 | 3"X2" |
| AA-AB32233 | 2 X 10Watt | DC7-18V | 4Ω | SSM3302 | 3.6"X2.7", #2 |
| AA-AB32992 | 2 x 15Watt | DC8-28V | 4Ω | MAX9736A | 3.6"X2.7" |
| AA-AB32993 | 2 X 15Watt | DC10-28V | 4Ω | MP7740 | 3.6"X2.7" |
| AA-AB32996 | 2 X 15Watt | DC8-26V | 8Ω | TPA3110 | 3.6"X2.7" |
| AA-AB32155 | 2 X 15Watt | DC9-14V | 4Ω | TA2024 | 3.6"X2.7" |
| AA-AB32254 | 2 X 20Watt | DC8-28V | 8Ω | MAX98400A | 3.6"X2.7" |
| AA-AB32166 | 2 X 25Watt | DC8-26V | 6Ω | TDA7492P | 3.6"X2.7" |
| AA-AB32165 | 2 X 25Watt*1 | DC14-19V | 6Ω | TDA7492 | 4.8"X3.6", #3 |
| AA-AB32174 | 2 X 50Watt*1 | DC8-26V | 6Ω | TDA7492 | 4.8"X3.6" |
| AA-AB32179 | 2 X 50Watt | DC8-26V | 6Ω | TDA7492 | 3.6"X2.7" |
| AA-AB32167 | 2 X 25Watt | DC10-27V | 4Ω | TPA3123 | 3.6"X2.7" |
| AA-AB32472 | 2 X 30Watt | DC8-26V | 8Ω | TPA3118 | 3.6"X2.7" |
| AA-AB32178 | 2 X 50Watt | DC8-26V | 4Ω | TPA3116 | 3.6"X2.7" |

Notes:

- The output power is rated at the condition THD+N 10%, 1kHz sine wave.
- All amplifier boards don't employ power supply reverse polarity protection. Stresses beyond the power supply range maximum ratings may cause permanent damage.
- None typical load may cause rating power reduction.
- Dimensions mean length and width of PCB only, excluding excessive part out of the PCB outline.
- All parameters were tested with Rohde & Schwarz UPV audio analyzer (AES17 filter enabled) and AP AUX0025 filter. Linear Power Supply units were used for testing.
- Sure Electronics promise all standard products life cycle more than 5 years. Sure Electronics reserve the right to update the version without notice. All the products sent to retail customers are the latest version. We will provide back-to-order service (100 Pieces MOQ needed) for our distributors in 5 years.
- Suggested power supply solution:
Mean Well SE-100-15 AC/DC Single Output Switching Power Supply 15V 7A 100W (PS-SP11511)
If you have other power supply requirements, please feel free to contact us.

Mechanical Dimensions

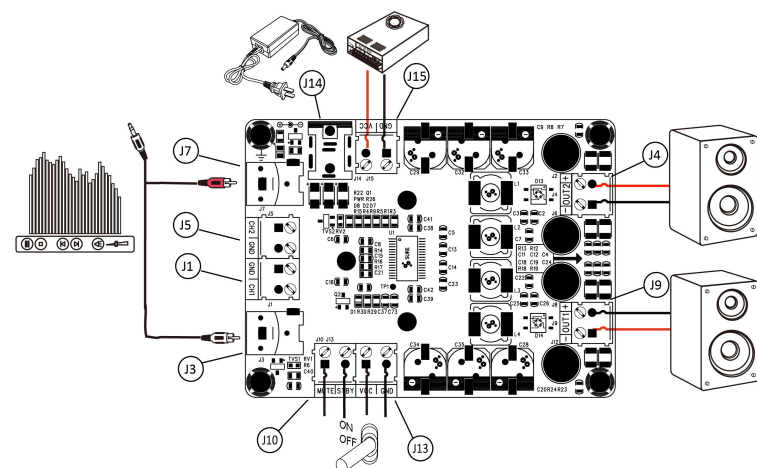


| Dimension | A (inch/mm) | A1 (inch/mm) | B (inch/mm) | B1 (inch/mm) | R (inch/mm) |
|-----------|-------------|--------------|-------------|--------------|-------------|
| #1 | 3.00/76.2 | 2.70/68.6 | 2.00/50.8 | 1.70/43.2 | 0.14/3.6 |
| #2 | 3.60/91.4 | 3.30/83.8 | 2.70/68.6 | 2.40/61.0 | 0.14/3.6 |
| #3 | 4.80/121.9 | 4.40/111.8 | 3.60/91.4 | 3.20/81.3 | 0.15/3.8 |

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)
- Height:
- 1)AA-AB32178, AA-AB32179: 0.94inch/23.9mm
- 2)AA-AB32174: 1.53inch/37.5mm
- 3)AA-AB32165: 0.94inch/23.1mm
- Other models 0.65inch/16.5mm

Connections



Power Supply Connector:

- J14 DC Jack 5.5mm/2.5mm
- J15 Terminal Block RJ128 (optional)

| Pin | Function |
|-----|----------|
| 1 | GND |
| 2 | VCC |

Mute/Standby Control Connector:

- J10, J13 Terminal Block RJ128 (optional)

| Pin | Function |
|-----|----------|
| 1 | MUTE |
| 2 | STBY |
| 3 | VCC |
| 4 | GND |

Audio Input Connector:

- J7, J3 RCA Jack
- J1, J5 Terminal Block RJ128 (optional)

| Pin | Function |
|-----|----------|
| 1 | CH2 |
| 2,3 | GND |
| 4 | CH1 |

Speaker Output Connector:

- J4, J9 Terminal Block RJ128

| Pin | Function |
|-----|----------|
| 1 | OUT1- |
| 2 | OUT1+ |
| 3 | OUT2- |
| 4 | OUT2+ |