

# High Power Mono Series

## 1 x 500 Watt 4 Ohm Class D Audio Amplifier Board - IRS2092 (AA-AB31512)



### Key Features:

- Output Power  
500W @ 4Ohm ±60V DC THD+N 10%  
405W @ 4Ohm ±60V DC THD+N 1%
- Power and Shutdown Indicator
- Overcurrent Protection
- Overtemperature Protection
- Optimized Heatsink Design
- Low Noise Cooling Fan
- 4-screw Easy Installation
- Weight: 780g/ 1.72 lbs (±10%)
- Size: 6.00 x 4.50 x 2.50 inches

### Electrical Specifications

Specifications typical @ +25°C, powered by ±60V DC, unless otherwise noted. Specifications subject to change without notice.

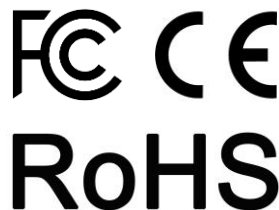
| Parameter                   | Conditions                   | Min. | Typ. | Max. | Units |
|-----------------------------|------------------------------|------|------|------|-------|
| Power Supply                | -                            | ±55  | ±60  | ±65  | VDC   |
| Idle Power                  | SD Floating, FAN ON          | -    | 4.5  | 7    | W     |
|                             | SD Floating, FAN OFF         | -    | 3    | 5    | W     |
| Standby Power               | SD Connected to GND, FAN OFF | -    | 0.6  | 3    | W     |
| Maximum Current             | 500W @ 4 Ohm                 | -    | 9.1  | -    | A     |
| Efficiency                  | 500W @ 4 Ohm                 | 88   | -    | 93   | %     |
| Minimum Load Impedance      | -                            | -    | 3    | -    | Ω     |
| Switching Frequency         | SD Floating                  | -    | 396  | -    | KHz   |
| Under Voltage Production    | -                            | -    | ±50  | -    | V     |
| Over Voltage Production     | -                            | -    | ±72  | -    | V     |
| Over Temperature Production | -                            | -    | 100  | -    | °C    |

### Distributors:



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:



### Contact info

• Email:  
info@sure-electronics.com

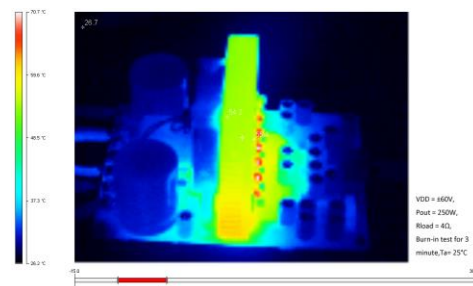
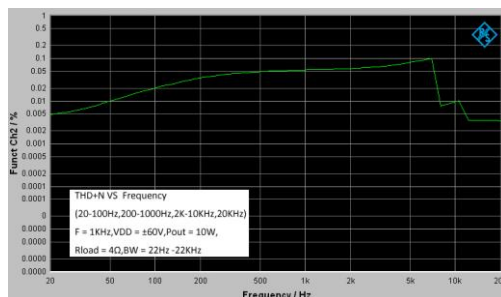
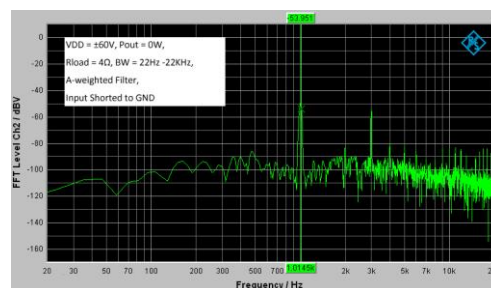
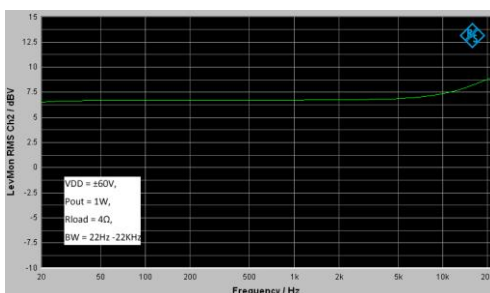


### Audio Performance

Specifications typical @ +25°C, powered by ±60V DC, unless otherwise noted. Specifications subject to change without notice.

| Parameter              | Conditions                          | Min. | Typ. | Max. | Units |
|------------------------|-------------------------------------|------|------|------|-------|
| Gain                   | -                                   | 28   | 30   | 32   | dB    |
| Input Sensitivity(RMS) | @4 Ohm, 500W, 1KHz                  | -    | 1.44 | -    | V     |
| Input Impedance        | -                                   | -    | 3.3  | -    | KΩ    |
| Output Power           | @4 Ohm, THD+N 1%                    | -    | 405  | -    | W     |
|                        | @4 Ohm, THD+N 10%                   | -    | 500  | -    | W     |
| Bandwidth @ ±3dB       | @4 Ohm                              | 20   | -    | 20K  | Hz    |
| THD                    | @4 Ohm, 1W, 1KHz                    | -    | 0.03 | -    | %     |
|                        | @4 Ohm, 10W, 1KHz                   | -    | 0.04 | -    | %     |
| Output Noise Level     | A-weighting, Input Connected to GND | -    | 262  | -    | μV    |
| SNR                    | 405W @ 4 Ohm, THD+N 1%              | -    | 98   | -    | dB    |

### Typical Performance Graphs



All parameters were tested with Rohde & Schwarz UPV audio analyzer (AES17 filter enabled) and Audio Precision 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)

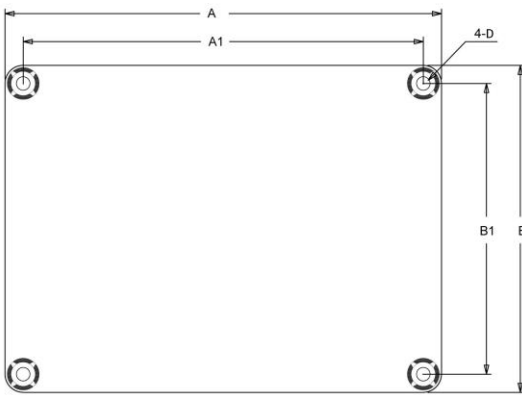
## Model Selection Guide

| Model Number            | Output Power | Power Supply Range | Typical Load | Amplifier IC | Dimensions  |
|-------------------------|--------------|--------------------|--------------|--------------|-------------|
| AA-AB31512              | 1 X 500Watt  | ±55-±65V           | 4Ω           | IRS2092      | 6"X4.5"#1   |
| AA-AB31431              | 1 X 750Watt  | ±55-±75V           | 4Ω           | IRS2092      | 6"X4.5"     |
| AA-AB31391              | 1 X 1000Watt | ±55-±65V           | 2Ω           | IRS2092      | 6" X 4.5"   |
| AA-AB31411              | 1 X 1500Watt | ±55-±75V           | 2Ω           | IRS2092      | 6" X 4.5"   |
| AA-AB31381              | 1 X 2000Watt | ±55-±85V           | 2Ω           | IRS2092      | 6" X 4.5"   |
| AA-AB31491              | 1 X 2500Watt | ±55-±95V           | 2Ω           | IRS2092      | 6" X 4.5"   |
| AA-AB31341              | 1 X 3000Watt | ±55-±85V           | 4Ω           | IRS2092      | 9" X 6" #2  |
| AA-AB32321              | 2 X 125Watt  | ±55-±75V           | 8Ω           | IRS2092      | 5.7" x 4"#3 |
| AA-AB32291              | 2 X 250Watt  | ±60-±80V           | 8Ω           | IRS2092      | 5.7" x 4"   |
| AA-AB32511              | 2 X 500Watt  | ±55-±65V           | 4Ω           | IRS2092      | 6"X4.5"     |
| AA-AB32431              | 2 X 750Watt  | ±55-±75V           | 4Ω           | IRS2092      | 6"X4.5"     |
| AA-AB32391              | 2 X 1000Watt | ±55-±65V           | 2Ω           | IRS2092      | 9"X6"       |
| AA-AB32411              | 2 X 1500Watt | ±55-±75V           | 2Ω           | IRS2092      | 9"X6"       |
| AA-AB32381              | 2 X 2000Watt | ±55-±85V           | 2Ω           | IRS2092      | 6"X9"       |
| AA-AB32491 <sup>2</sup> | 2 X 2500Watt | ±55-±95V           | 2Ω           | IRS2092      | 6"X9"       |

### 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.
- If any model within product series is out of stock, another model with compatible size and function, featuring more rating output power will be sent as the substitute without notice.
- 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 promises all standard products life cycle more than 5 years. Sure Electronics reserves 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:  
1000VA Hand Made Toroidal Transformer (PS-RT11111)  
30A/75V 18,800Uf Rectifier Board (AA-AB41121)  
If you have other power supply requirements, please feel free to contact us.

## Mechanical Dimensions

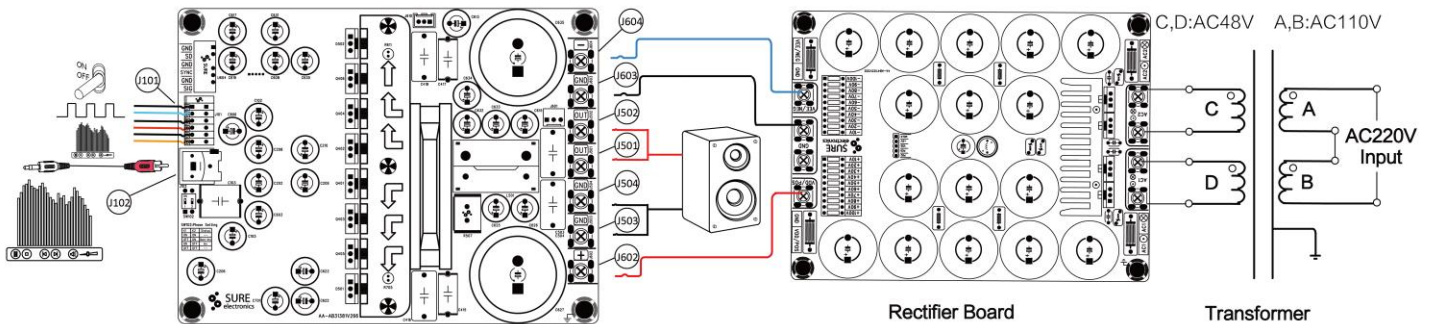


| Dimensions | A<br>(inch/mm) | A1<br>(inch/mm) | B<br>(inch/mm) | B1<br>(inch/mm) | D<br>(inch/mm) |
|------------|----------------|-----------------|----------------|-----------------|----------------|
| #1         | 6.00/152.40    | 5.60/142.24     | 4.50/114.30    | 4.10/104.14     | 0.15/3.8       |
| #2         | 9.00/228.6     | 8.60/218.44     | 6.00/152.40    | 5.60/142.24     | 0.15/3.8       |
| #3         | 5.7/144.78     | 5.3/134.62      | 4/101.6        | 3.6/91.44       | 0.14/3.6       |

### Notes:

- All dimensions are typical in inches/ mm
- Tolerance x.xx = ±0.02(±0.50)
- Height: 2.50inch/ 63.5mm

## Connections



### Power Supply Connector:

- J602, J604, J603 Terminal Block

| Pin | Function |
|-----|----------|
| 602 | +        |
| 603 | GND      |
| 604 | -        |

### Audio Input Connector:

- J102 RCA Jack

### Speaker Output Connector:

- J501, J502, J503, J504 Terminal Block

| Pin        | Function |
|------------|----------|
| J501, J502 | OUT      |
| J503, J504 | GND      |

### Control Connector:

- J101 Terminal Block RJ141V

| Pin | Function |
|-----|----------|
| ■   | GND      |
| ●   | SD       |
| ●   | GND      |
| ●   | SYNC     |
| ●   | GND      |
| ●   | SIG      |



# Sure Electronics

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