

# High Power Mono Series

## 1 x 500 Watt 1.5 Ohm Class D Audio Amplifier Board - T-AMP (AA-AB31513)



### Key Features:

- Output Power  
500W@1.5Ohm 40V DC THD+N 10%  
393W@1.5Ohm 40V DC THD+N 1%
- Power and Clip Indicator
- Support Volume Control Board (VC01)
- BTL Architecture
- Temperature Control Fan
- Overcurrent Protection
- Optimized Heatsink Design
- Overtemperature Protection
- Weight: 686g/1.51 lbs (±10%)
- Size: 6.00 x 4.50 x 1.53 inches

### Electrical Specifications

Specifications typical @ +25°C, powered by 40V DC, unless otherwise noted. Specifications subject to change without notice.

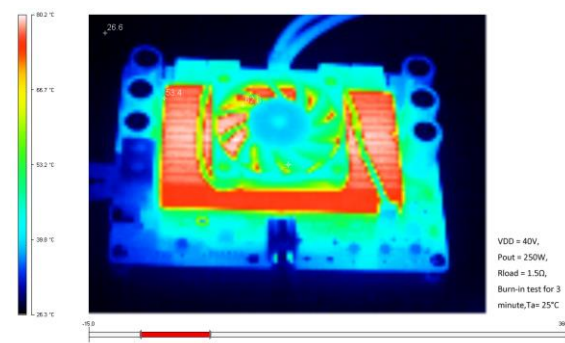
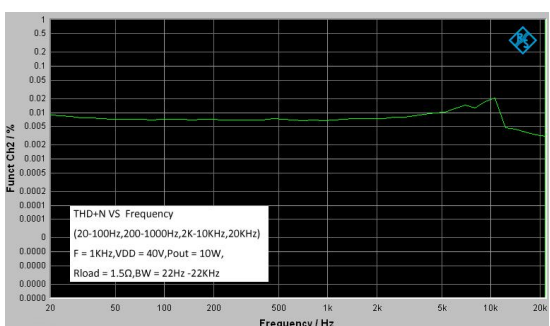
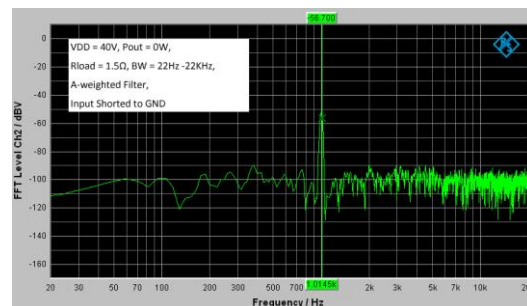
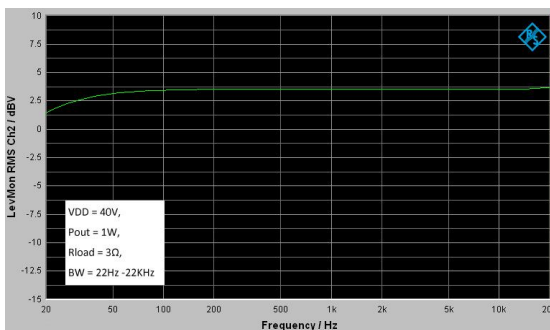
Parameter	Conditions	Min.	Typ.	Max.	Units
Power Supply	-	24	40	-	VDC
Idle Power	SD Floating, FAN ON	-	10	14	W
	SD Floating, FAN OFF	-	9.2	12	W
Standby Power	SD Connected to GND, FAN OFF	-	0.8	2	W
Maximum Current	500W @ 1.5Ohm	-	13.4	-	A
Efficiency	500W @ 1.5Ohm	89	93	94	%
Minimum Load Impedance	-	-	1.5	-	Ω
Switching Frequency	SD Floating	-	730	-	KHz
Fan Active @ Temperature	-	-	50	-	°C

### Audio Performance

Specifications typical @ +25°C, powered by 40V DC, unless otherwise noted. Specifications subject to change without notice.

Parameter	Conditions	Min.	Typ.	Max.	Units
Gain	-	28	30	32	dB
Input Sensitivity(RMS)	@ 1.5Ω, 500W, 1KHz	-	812	-	mV
Input Impedance	-	-	10	-	KΩ
Output Power	@ 1.5Ω THD+N 1%	-	393	-	W
	@ 1.5Ω THD+N 10%	-	500	-	W
Bandwidth @ ±3dB	@ 1.5Ω	20	-	20K	Hz
THD	@3Ω, 1W, 1KHz	-	0.07	-	%
	@3Ω, 10W, 1KHz	-	0.076	-	%
Output Noise Level	A-weighting, Input Connected to GND	-	319	-	μV
SNR	393W @ 1.5Ω THD+N 1%	-	92	-	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)

### 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

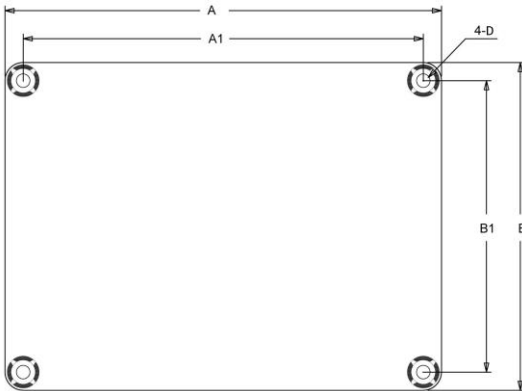
• Email:  
info@sure-electronics.com



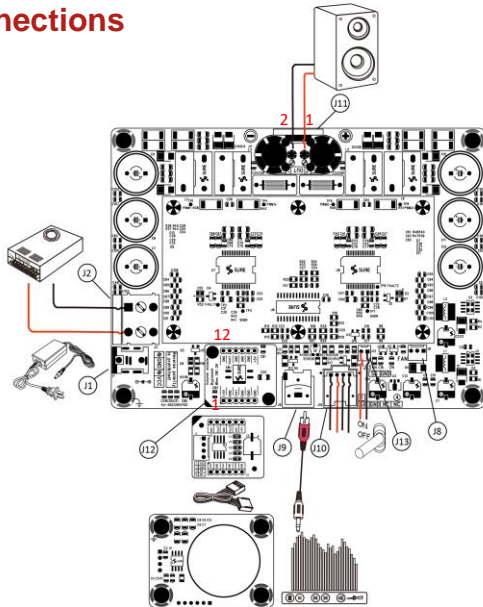
## Model Selection Guide

Model Number	Output Power	Power Supply Range	Typical Load	Amplifier IC	Dimensions
AA-AB31184	1 X 100Watt	DC 10-24V	2Ω	TPA3116	3.6"X2.7" #1
AA-AB31371	1 X 220Watt	DC 15-36V	4Ω	TDA7498E	4.8"X3.6" #2
AA-AB31282*1	1 X 200Watt	DC 15-36V	3Ω	T-AMP	4.8"X3.6"
AA-AB31194*1	1 X 300Watt	DC 15-40V	3Ω	T-AMP	4.8"X3.6"
AA-AB31315*1	1 X 400Watt	DC 15-44V	3Ω	T-AMP	4.8"X3.6"
AA-AB31511*1	1 X 500Watt	DC 15-50V	3Ω	T-AMP	4.8"X3.6"
AA-AB31243	1 X 600Watt	DC 25-48V	2Ω	TAS5630B	4.8"X3.6"
AA-AB31191	1 X 300Watt	DC 20-36V	2Ω	TAS5613	6"X4.5" #3
AA-AB31241	1 X 600Watt	DC 25-48V	2Ω	TAS5630B	6"X4.5"
AA-AB31316*2	1 X 400Watt	DC 15-36V	1.5Ω	T-AMP	6"X4.5"
AA-AB31513*2	1 X 500Watt	DC 15-40V	1.5Ω	T-AMP	6"X4.5"
AA-AB31242*2	1 X 600Watt	DC 15-40V	1.5Ω	T-AMP	6"X4.5"
AA-AB31321*2	1 X 800Watt	DC 15-46V	1.5Ω	T-AMP	6"X4.5"
AA-AB31512	1 X 500Watt	DC ±55-±65V	4Ω	IRS2092	6"X4.5"
AA-AB31431	1 X 750Watt	DC ±55-±75V	4Ω	IRS2092	6"X4.5"

## Mechanical Dimensions



## Connections



### 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. For example, \*1 AA-AB31282's alternative model is AA-AB31194. \*2 AA-AB31316's alternative model is AA-AB31513.
- 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:  
Mean Well MW 48V 9.4A 450W AC/DC Switching Power Supply SE-450-48 (PS-SP11187)  
If you have other power supply requirements, please feel free to contact us.

Dimensions	A (inch/mm)	A1 (inch/mm)	B (inch/mm)	B1 (inch/mm)	D (inch/mm)
#1	3.60/91.44	3.30/83.8	2.70/68.6	2.40/61.0	0.14/3.6
#2	4.80/121.92	4.40/111.76	3.60/91.44	3.20/81.28	0.14/3.60
#3	6.00/152.40	5.60/142.24	4.50/114.3	4.10/104.14	0.14/3.60

### Notes:

- All dimensions are typical in inches/mm
- Tolerance x.xx = ±0.02(±0.50)

### Height:

- AA-AB31184: 0.93inch/23.6mm
- AA-AB31282, AA-AB31316: 0.95inch/24.2mm
- AA-AB31512, AA-AB31431: 2.50inch/61.3mm
- Others: 1.53inch/37.5mm

### Power Supply Connector:

- J1 DC Jack 5.5mm/2.5mm
- J2 Terminal Block RJ128 (optional)

Pin	Function
■	GND
●	VCC

### Shutdown Control Connector:

- J13 2Pin 2510 Socket

Pin	Function
■	GND
●	SD

### Audio Input Connector:

- J9 RCA Jack
- J10 Molex Connector (optional)

Pin	Function
1	SIG
2	GND
3,4	NC

### Speaker Output Connector:

- J11 Terminal Block RJ128

Pin	Function
1	OUT+
2	OUT-

### Volume Control Board Socket (Volume module bypassed when SW1 ON)

Pin	Function	Pin	Function
1, 7	+5V	3	Vin1
2, 4, 5, 6, 8, 9, 10, 12	GND	11	Vout1



# Sure Electronics

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NO.9, Weidi Road, Xianlin University City, Qixia District,  
Nanjing, Jiangsu Province, P.R.C

www.sure-electronics.com

www.wondom.com

Mail: store@surrelectronics.com

Skype: surewebstore