

DATA SHEET

ALUMINUM HOUSED RESISTORS

High Power, Wirewound

Trapezium

ATH Series

$\pm 1\%$, $\pm 2\%$, $\pm 5\%$, $\pm 10\%$

40W to 1800W

RoHS compliant & Halogen Free



YAGEO

Product specification – August 31, 2023 V.1





APPLICATIONS

- Power, pulse application
- Industry electronic
- Large-sized machinery

FEATURES

- Reduced size
- High power rating up to 1800W
- Excellent surge performance
- Aluminum case for severe environments
- RoHS compliant & halogen-free

ORDERING INFORMATION

Part number of the aluminum housed power wirewound resistor is identified by the series, power rating, tolerance, packing, temperature coefficient, type and resistance value.

PART NUMBER

ATH 30B J B - AAK 100R
 (1) (2) (3) (4) (5) (6) (7)

(1) SERIES NAME

ATH Series

(2) POWER RATING

40A = 40W	20B = 200W	10C = 1000W
60A = 60W	30B = 300W	12C = 1200W
80A = 80W	40B = 400W	15C = 1500W
10B = 100W	50B = 500W	18C = 1800W
12B = 120W	60B = 600W	80S = 80W
15B = 150W	80B = 800W	1BS = 100W

(3) TOLERANCE

F = ±1%	J = ±5%
G = ±2%	K = ±10%

(4) PACKAGING TYPE

B = Bulk

(5) TEMPERATURE COEFFICIENT OF RESISTANCE

- = Based on spec.

(6) TYPE

Optional code, represents specific requirement

Example:

AAK = 500mm leaded wire length

TUC = 300mm leaded wire length

AAP = 500mm leaded wire length, 2-5s connector

ABA = 500 leaded wire length, RV2-4 connector

Null = 200mm leaded wire length

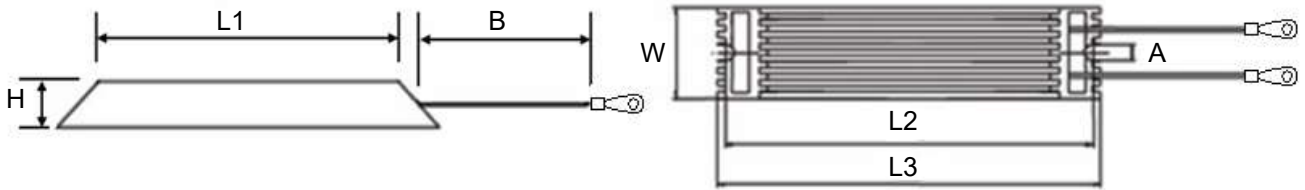
(7) RESISTANCE VALUE

E24 & E96 Series

Example:

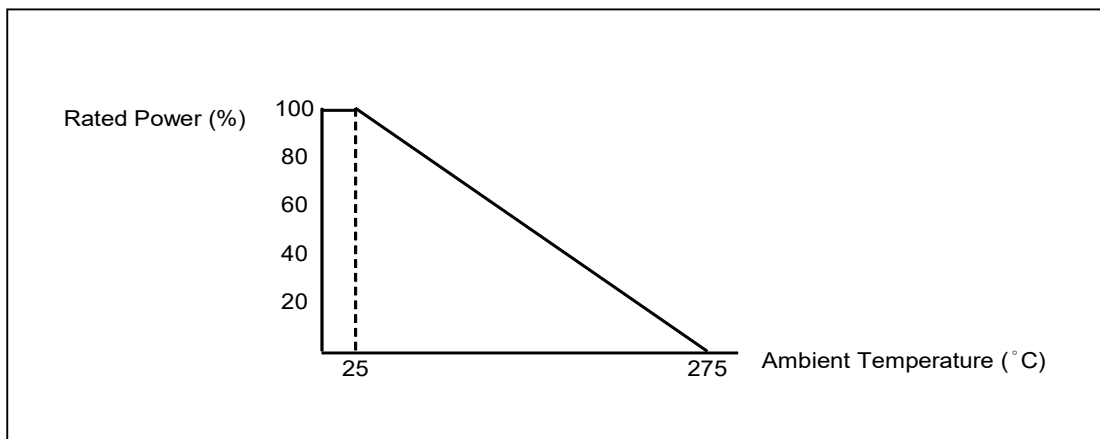
1R = 1Ω, 10R = 10Ω, 1K = 1,000Ω.....

DIMENSIONS



TYPE	DIMENSIONS							Unit: mm
Normal	$L1 \pm 1.5$	$L2 \pm 1.5$	$L3 \pm 1.5$	$H \pm 1.0$	$W \pm 1.0$	$A \pm 0.5$	$B \pm 10$	
ATH40A	65	80	95	20	40	5.5 (one assembly hole)	Standard : 200 (w/o connector)	
ATH60A	85	100	115	20	40	5.5 (one assembly hole)	Type code	
ATH80A	110	125	140	20	40	5.5 (one assembly hole)	TUC: 300	
ATH1BS	90	99.5	120	20	25	5.5 (one assembly hole)	AAK: 500	
ATH10B	135	150	165	20	40	5.5 (one assembly hole)	AAP: 500 , 2-5S connector	
ATH12B	155	170	185	20	40	5.5 (one assembly hole)	ABA: 500, RV2-4 connector	
ATH15B	185	200	215	20	40	5.5 (one assembly hole)		
ATH20B	135	150	165	30	60	5.5 (one assembly hole)		
ATH30B	180	200	215	30	60	5.5 (one assembly hole)		
ATH40B	225	250	265	30	60	5.5 (one assembly hole)		
ATH50B	315	320	335	30	60	5.5 (one assembly hole)		
ATH60B	295	344	355	60	60	5.5 (two assembly hole)		
ATH80B	310	335	350	107	50	5.5 (two assembly hole)		
ATH10C	360	385	400	107	50	5.5 (two assembly hole)		
ATH12C	410	435	450	107	50	5.5 (two assembly hole)		
ATH15C	460	485	500	107	50	5.5 (two assembly hole)		
ATH18C	540	565	580	107	50	5.5 (two assembly hole)		
ATH80S	102	123	137	20	40	5.5 (one assembly hole)		

DERATING CURVE



ELECTRICAL CHARACTERISTICS

CHARACTERISTICS	ATH40A	ATH60A	ATH80A	ATH10B	ATH12B	ATH15B	ATH20B	ATH30B	ATH40B
Power Rating at 25 °C	40W	60W	80W	100W	120W	150W	200W	300W	400W
Maximum Working Voltage	300V	400V	500V	600V	700V	900V	1000V	1500V	1600V
Maximum Overload Voltage	300V	400V	500V	600V	700V	900V	1000V	1500V	1600V
Voltage Proof on Insulation (Vrms)	1500V	3000V	3000V	3000V	3000V	3000V	3000V	3000V	3000V
Resistance Range	0.5Ω ~ 2.2KΩ	0.5Ω ~ 4.7KΩ	1Ω ~ 6KΩ	1.5Ω ~ 8KΩ	2Ω ~ 10KΩ	2Ω ~ 12KΩ	2Ω ~ 15KΩ	3Ω ~ 18KΩ	3Ω ~ 20KΩ
Operating Temp. Range	- 55°C to +275°C								
Temperature Coefficient	±300ppm/°C								

Note: For resistance value out of above range is by request.

CHARACTERISTICS	ATH50B	ATH60B	ATH80B	ATH10C	ATH12C	ATH15C	ATH18C	ATH80S	ATH1BS
Power Rating at 25 °C	500W	600W	800W	1000W	1200W	1500W	1800W	80W	100W
Maximum Working Voltage	1600V	1700V	1800V	2000V	2100V	2200V	2300V	500V	500V
Maximum Overload Voltage	1600V	1700V	1800V	2000V	2100V	2200V	2300V	500V	500V
Voltage Proof on Insulation (Vrms)	3000V	3000V	3000V	3000V	3000V	3000V	3000V	3000V	3000V
Resistance Range	3Ω ~ 25KΩ	3Ω ~ 25KΩ	3Ω ~ 25KΩ	3Ω ~ 30KΩ	3Ω ~ 30KΩ	3Ω ~ 35KΩ	3Ω ~ 35KΩ	3Ω ~ 7.2KΩ	3Ω ~ 7.2KΩ
Operating Temp. Range	- 55°C to +275°C								
Temperature Coefficient	±300ppm/°C								

Note: For resistance value out of above range is by request.

TEST AND REQUIREMENTS

TEST	TEST METHOD	PROCEDURE	APPRAISE
Short Time Overload	IEC 60115-1 4.13	5 times of rated power for 5 sec.(Not more than maximum overload voltage)	±2.0%+0.05Ω
Voltage Proof on Insulation	IEC 60115-1 4.7	In V-Block for 60 sec. test voltage as above table	No Breakdown
Temperature Coefficient	IEC 60115-1 4.8	Between -55°C to +275°C	By Type
Insulation Resistance	IEC 60115-1 4.6	In V-Block for 60 sec.	>100MΩ
Solderability	IEC 60115-1 4.17	245±5°C for 3±0.5 Sec.	95% Min. coverage
Robustness of Terminations	IEC 60115-1 4.16	Direct load for 10 Sec. in the direction of the terminal leads	≥10N
Periodic-pulse Overload	IEC 60115-1 4.39	4 times RCWV 10,000 cycles (1 Sec. on, 25 Sec.off)	±2.0%+0.05Ω
Damp Heat Steady State	IEC 60115-1 4.24	40±2°C,90-95% RH for 56 days, loaded with 0.1 times RCWV	±5.0%+0.05Ω
Endurance at 25°C	IEC 60115-1 4.25	25±2°C at RCWV(or Umax., whichever less) for 1,000 Hr.(1.5 Hr.on,0.5 Hr. off)	±5.0%+0.05Ω
Temperature Cycling	IEC 60115-1 4.19	→ -55°C → Room Temp. → +155°C Room Temp.(5 cycles)	±1.0%+0.05Ω
Resistance to Soldering Heat	IEC 60115-1 4.18	260±3°C for 10±1 Sec., immersed to a point 3±0.5mm from the body	±1.0%+0.05Ω

Note:

RCWV (Rated Continuous Working Voltage):

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

$$V=\sqrt{(P \times R)}$$

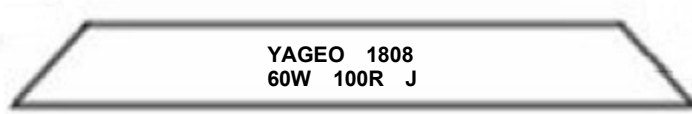
or max. working voltage whichever is less

Where

V=Continuous rated DC or
AC (rms) working voltage (V)

P=Rated power (W)

R=Resistance value (Ω)

MARKING**Example:**

YAGEO	= Brand
1808	= Date code
60W	= Power rating
100R	= Resistance
J	= Tolerance

REVISION HISTORY

REVISION	DATE	CHANGE NOTIFICATION	DESCRIPTION
Version 1	Aug.31, 2023	-	- Revised LEGAL DISCLAIMER
Version 0	Aug.4, 2021	-	- First issue of this specification

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