Aluminum Housed Power Resistors

Outstanding Heatsink Aluminum Housed Power Resistor (AH)

Preview

Token Electronics aluminum chassis mount units are designed for maximum heat dissipation mounting solidly to metal chassis surface for maximum heat transfer. AH series are outstanding for their high power dissipation with precision tolerances in minimum physical sizes.

Lower hot spot ratings due to exclusive complete encapsulation of element within anodized aluminum body. AH series high-performance welded construction throughout assures long stable load life with threaded heavy stud axial-terminals.

Materials :

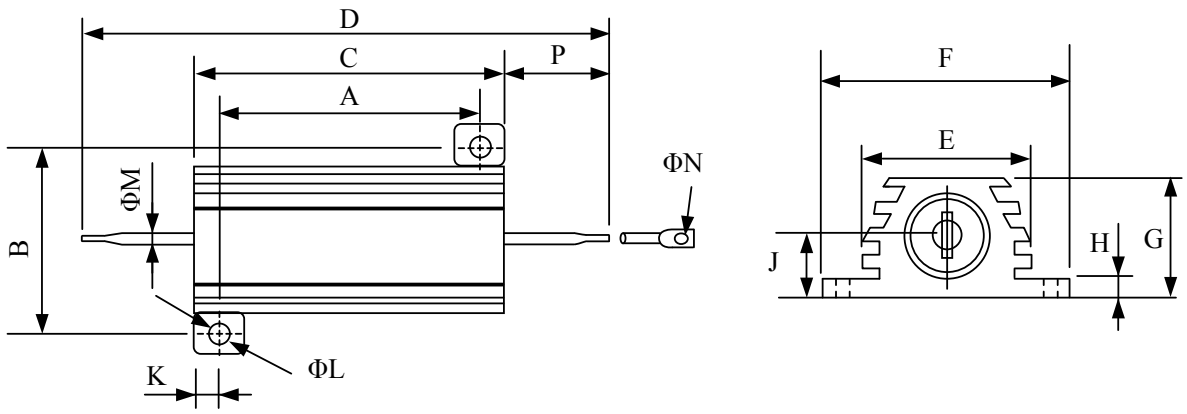
- Encapsulant: S: Silicone, C: Cement; End caps: Stainless steel.
- Core: Ceramic steatite or alumina.
- Housing: Aluminum with hard anodic coating.
- Element: Copper-nickel alloy, nickel-chrome alloy or manganese copper.
- Standard Terminals: 5~50 W Tinned terminals, 100~250 W Threaded terminals.

General Specification :

- Ayrton Perry type non-inductive winding is available. When required add “N” to the part number.
- Standard winding & non-inductive winding avaiable. High power rating, strong construction, small size, and ultra precision.
- Aluminum housing allows chassis mounting and provides heat sink capability

The AH Series is RoHS compliant and lead free.
For non-standard technical requirements and custom special applications, please contact us to discuss the details.

5W ~ 50W Dimensions



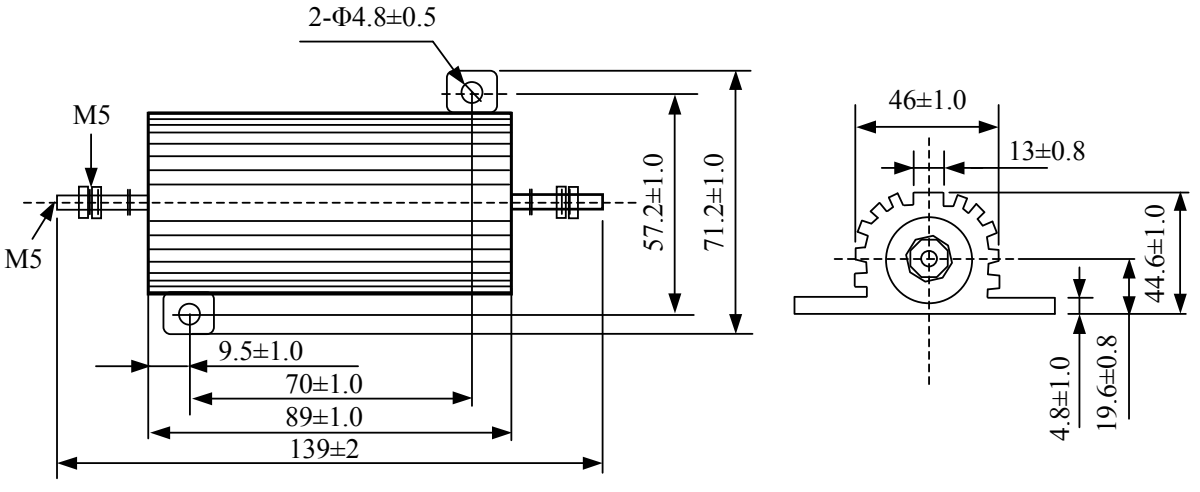
Type	Dimensions(mm)													
	A	B	C	D	E	F	G	H	J	K	L	M	N	P
	± 1.0	± 1.0	± 1.0	± 2.0	± 1.0	± 1.0	± 1.0	± 0.8	± 1.0	± 0.8	± 0.5	± 0.5	± 0.2	± 0.8
AH-5	11.2	12.5	15.2	28.6	8.5	16.4	8.1	1.7	3.8	2	2.4	1.5	1.3	6.7
AH-5N	11.2	12.5	15.2	28.6	8.5	16.4	8.1	1.7	3.8	2	2.4	1.5	1.3	6.7
AH-10	14.2	15.9	19	34.9	10.7	20.3	9.9	1.9	4.2	2.4	2.4	2	2.2	7.95
AH-10N	14.2	15.9	19	34.9	10.7	20.3	9.9	1.9	4.2	2.4	2.4	2	2.2	7.95
AH-25	18.2	19.8	27	49.2	14	27.4	13.9	1.9	5.9	4.4	3.2	1	2.2	11.1
AH-25N	18.2	19.8	27	49.2	14	27.4	13.9	1.9	5.9	4.4	3.2	1	2.2	11.1
AH-50	40	21.4	50	70.6	16	29	15.5	2.2	6.6	5	3.2	2	2.2	10.3
AH-50N	40	21.4	50	70.6	16	29	15.5	2.2	6.6	5	3.2	2	2.2	10.3

Notice: All dimensions might be changed or modified, please refer to last updating specification.

Token's AH resistor wattage ratings are based on mounting to the following heat sink:

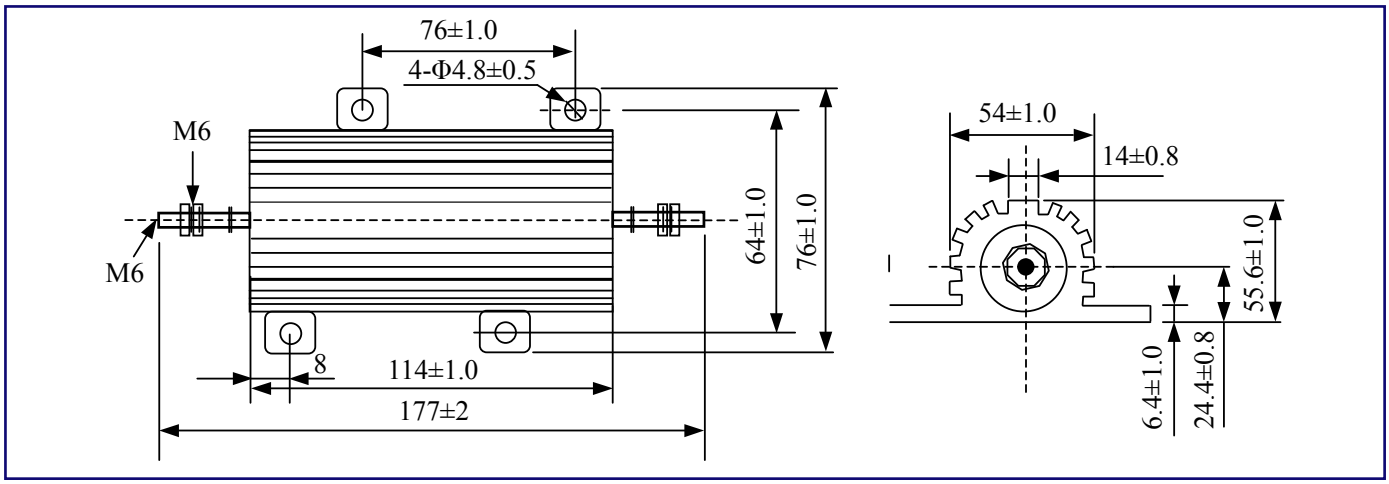
- AH-5W/10W: aluminum chassis area is 832 cm2 × 1.0 mm thick or equiv.
- AH-25W: aluminum chassis area is 1077 cm2 × 1.0 mm thick or equiv.
- AH-50W: aluminum chassis area is 1877 cm2 × 1.5 mm thick or equiv.
- AH-100W: aluminum chassis area is 1896 cm2 × 3.2 mm thick or equiv.
- AH-250W: aluminum chassis area is 5780 cm2 × 3.2 mm thick or equiv.

AH-100, AH-100N Dimensions



Note: All values might be changed or modified, please consult factory for details.

AH-250, AH-250N Dimensions



Note: All values might be changed or modified, please consult factory for details.

Silicone Filler Aluminum Resistor (AHS) Electrical Specification

Type	MIL Type	25°C Rated Power (W)		Resistance Range (Ω)	Resistance Range (Ω)	Temperature Coefficient
		Industry	Military			
AHS-5	RE60G	5	5	0.1, 0.25, 0.5	10~1K	25
				0.5, 1	1.0~3.32K	25, 50
				5, 10	0.1~3.32K	100, 250
				10	0.01~3.32K	100, 250
AHS-5N	RE60N	5	5	1, 5	10~200	25, 50
				5	1.0~860	100
				5, 10	0.1~860	100, 250
				10	0.01~1K	100, 250
AHS-10	RE65G	10	10	0.1, 0.25, 0.5	10~1.2K	25, 50
				0.5, 1	1.0-2.7K	50, 100
				5, 10	0.1~2.7K	100, 250
				10	0.01~5.62K	100, 250
AHS-10N	RE65N	10	10	1, 5	10~860	25, 50
				5	1.0~1.2K	100
				5, 10	0.1~1.2K	100, 250
				10	0.01~1.5K	100, 250
AHS-25	RE70G	25	20	0.1, 0.25, 0.5	10~2.7K	25, 50
				0.5, 1	1.0~3.9K	50, 100
				5, 10	0.1~3.9K	100, 250
				10	0.01~12.1K	100, 250
AHS-25N	RE70N	25	20	1, 5	10~1.2K	25, 50
				5	1.0~2.7K	100
				5, 10	0.1~2.7K	100, 250
				10	0.01~6.04K	100, 250

5W ~ 50W Dimensions

Type	MIL Type	25°C Rated Power (W)		Resistance Tolerance (± %)	Resistance Range (Ω)	Temperature Coefficient (±PPM/°C)
		Industry	Military			
AHS-50	RE75G	50	30	0.1, 0.25, 0.5	10~3.9K	25, 50
				0.5, 1	1.0~5.6K	50, 100
				5, 10	0.1~5.6K	100, 250
				10	0. 01~39.2K	100, 250
AHS-50N	RE75N	50	30	1, 5	10~2.7K	25, 50
				5	1.0~3.9K	100
				5, 10	0.1~3.9K	100, 250
				10	0.01~19.6K	100, 250
AHS-100	RE77G	100	75	0.1, 0.25, 0.5	10~5.6K	25, 50
				0.5, 1	1.0~8.2K	50, 100
				5, 10	0.1~12K	100, 250
				10	0.01~29.4K	100, 250
AHS-100N	RE77N	100	75	1, 5	10~3.9K	25, 50
				5	1.0~5.6K	100
				5, 10	0.1~5.6K	100, 250
				10	0.01~14.7K	100, 250
AHS-250	RE80G	250	120	0.1, 0.25, 0.5	10~12K	25, 50
				0.5, 1	1.0~27K	50, 100
				5, 10	0.1~27K	100, 250
				10	0.01~35.7K	100, 250
AHS-250N	RE80N	250	120	1, 5	10~5.6K	25, 50
				5	1.0~8.2K	100
				5, 10	0.1~8.2K	100, 250
				10	0.01~17.4K	100, 250

Note: All values might be changed or modified, please consult factory for details.

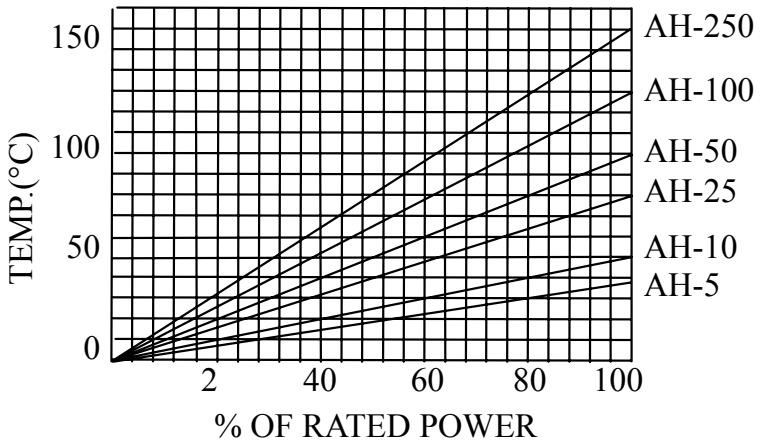
Cement Filler Aluminum Resistor (AHC) Electrical Specification

Type	25°C Rated Power (W)	Resistance Tolerance (± %)	Resistance Range (Ω)	Temperature Coefficient (±PPM/°C)
AHC-5	5	0.1, 0.25, 0.5	10~1K	25
		0.5, 1	1.0~3.32K	25, 50
		5, 10	0.1~3.32K	100, 250
		10	0.01~3.32K	100, 250
AHC-5N	5	1, 5	10~200	25, 50
		5	1.0~860	100
		5, 10	0.1~860	100, 250
		10	0.01~1K	100, 250

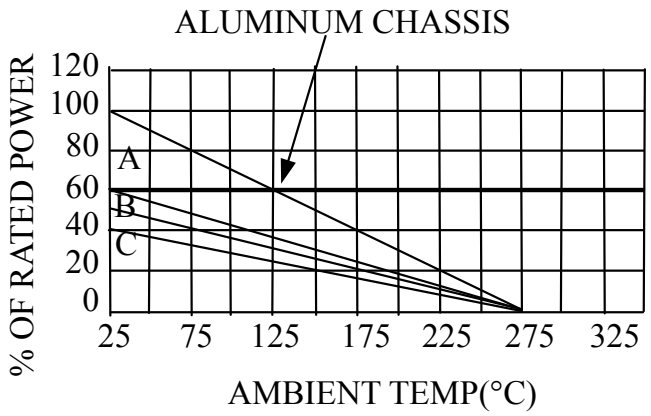
Type	25°C Rated Power (W)	Resistance Tolerance (± %)	Resistance Range (Ω)	Temperature Coefficient (±PPM/°C)
AHC-10	10	0.1, 0.25, 0.5	10~1.2K	25, 50
		0.5, 1	1.0-2.7K	50, 100
		5, 10	0.1~2.7K	100, 250
		10	0.01~5.62K	100, 250
AHC-10N	10	1, 5	10~860	25, 50
		5	1.0~1.2K	100
		5, 10	0.1~1.2K	100, 250
		10	0.01~1.5K	100, 250
AHC-25	25	0.1, 0.25, 0.5	10~2.7K	25, 50
		0.5, 1	1.0~3.9K	50, 100
		5, 10	0.1~3.9K	100, 250
		10	0.01~12.1K	100, 250
AHC-25N	25	1, 5	10~1.2K	25, 50
		5	1.0~2.7K	100
		5, 10	0.1~2.7K	100, 250
		10	0.01~6.04K	100, 250
AHC-50	50	0.1, 0.25, 0.5	10~3.9K	25, 50
		0.5, 1	1.0~5.6K	50, 100
		5, 10	0.1~5.6K	100, 250
		10	0. 01~39.2K	100, 250
AHC-50N	50	1, 5	10~2.7K	25, 50
		5	1.0~3.9K	100
		5, 10	0.1~3.9K	100, 250
		10	0.01~19.6K	100, 250
AHC-100	100	0.1, 0.25, 0.5	10~5.6K	25, 50
		0.5, 1	1.0~8.2K	50, 100
		5, 10	0.1~12K	100, 250
		10	0.01~29.4K	100, 250
AHC-100N	100	1, 5	10~3.9K	25, 50
		5	1.0~5.6K	100
		5, 10	0.1~5.6K	100, 250
		10	0.01~14.7K	100, 250
AHC-250	250	0.1, 0.25, 0.5	10~12K	25, 50
		0.5, 1	1.0~27K	50, 100
		5, 10	0.1~27K	100, 250
		10	0.01~35.7K	100, 250
AHC-250N	250	1, 5	10~5.6K	25, 50
		5	1.0~8.2K	100
		5, 10	0.1~8.2K	100, 250
		10	0.01~17.4K	100, 250

Note: All values might be changed or modified, please consult factory for details.

Surface Temperature Versus Power Load (Mounted on heat-sink chassis)



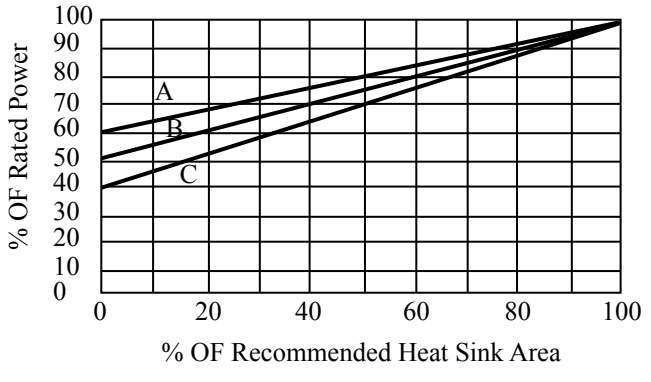
Ambient Temperature Derating



Derating is required for ambient temperatures above 25°C, see the graph.
Curve Aluminum Chassis applies to all types when mounted to specified heat sink.
Curves A, B, C apply to operation of unmounted resistors.

- Curves A:
  AH 5 and 10 watt unites, unmounted.
- Curves B:
  AH 25 watt units, unmounted.
- Curves C:
  AH 50, 100 and 250 watt units, unmounted.

Reduced Heat Sink Derating



Derating is also required when recommended heat sink area is reduced.

- Curves A:
  AH-5 and AH-10 size resistor.
- Curves B:
  AH-25 size resistor.
- Curves C:
  AH-50, AH-100 and AH-250 size resistor.

AH Aluminum Housed Power Resistors

Characteristics

Parameters	Test Conditions	Specifications
Short Time Over Load	5 × wattage rating-5sec.	Δ R±(2%+0.05Ω)Max.
Moistrue Resistance	temp 40°C moisture 95% DC 100V 100Hr	Δ R±(5%+0.05Ω)Max.
Load Life	Load Rating (chassis mounted) 25°C (1.5 Hour on 0.5 Hour OFF) Repeat 1000 Hours	Δ R±(5%+0.05Ω)Max.
Vibration	10~50~10Hz/Min -X- Y- Z Axis 2 Hours each.	Δ R±(0.2%+0.05Ω)Max.
Heat Resistance	275°C 2Hours	Δ R±(0.5%+0.05Ω)Max.
Dielectric Strength	AHS-5 AHS-10 AHS-25 1000V AHS-50 1500V AHS-100 AHS-250 2500V	Δ R±(0.5%+0.05Ω)Max.
	AHC-5 AHC-10 AHC-25 1000V AHC-50 1500V AHC-100 AHC-250 2500V	
Insulation Resistance	Under the same test condition of Dielectric Strength, Load DC500V and measure the Insulation R.	100MΩMin.
Terminal Strength	(1)Pull Test (30 sec Min) AH-5 1kg, AH-10 2.3kg, AH-25, AH-50 4.5kg (2)Torque Test(5~15sec) AH-100 27kg-cm, AH-250 36kg-cm	Δ R±(0.2%+0.05Ω) Max.

How to Order

AH	S	10	20Ω	D
❶	❷	❸	❹	❺

❶ Part Number

❷ Encapsulant: S: Silicon,
C: Cement

❸ Rated Power (W)

Code	Rated Power
10	10W
10N	10W
250	250W
250N	250W
N	Non-Inductive

❹ Resistance Value (Ω)

Code	Resistance Value
R51	0.51Ω
5R1	5.1Ω
51R	51Ω
510R	510Ω
5K1	5.1KΩ

❺ Resistance Tolerance (%)

Code	Resistance Tolerance
A5	±0.05%
B	±0.10%
C	±0.25%
D	±0.5%
F	±1%
J	±5%
K	±10%

Back to 1st Page - Aluminum Housed Power Resistors (AH)