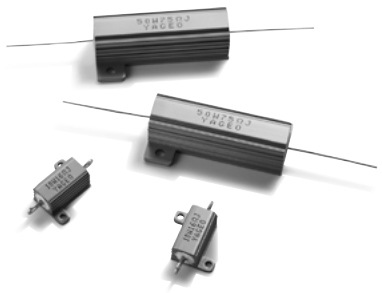
Aluminum Housed Resistors

Power Wirewound Type

Lug / Threaded Style [AHA Series]
Straight Leadwire Style [AHP Series]

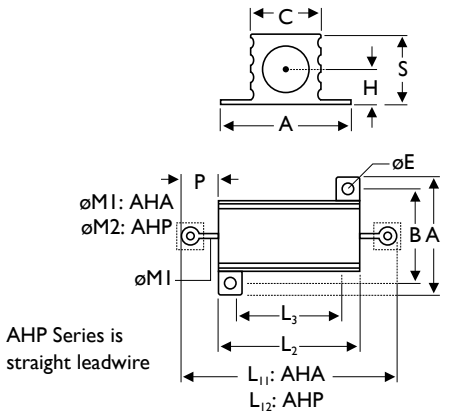


FEATURES

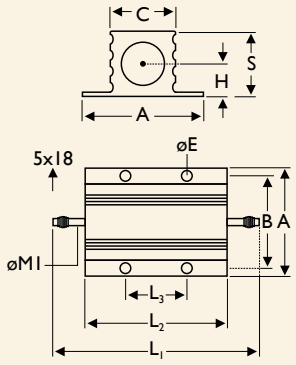
Power Rating	5W, 10W, 25W, 50W, 80W, 100W, 250W
Resistance Tolerance	±0.25%, ±0.5%, ±1%, ±5%, ±10%
T.C.R.	±50ppm/°C, ±100ppm/°C, ±200ppm/°C

DIMENSIONS

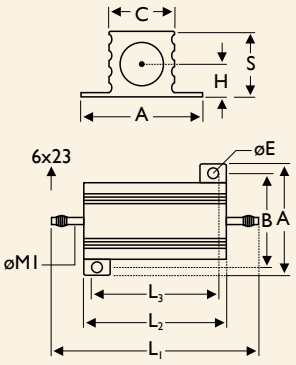
Unit: mm



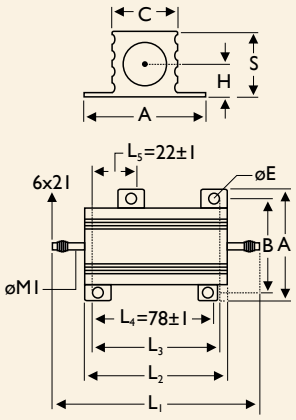
AHA500 / AHP500; AHA10A / AHP10A
AHA25A / AHP25A; AHA50A / AHP50A



AHA80A



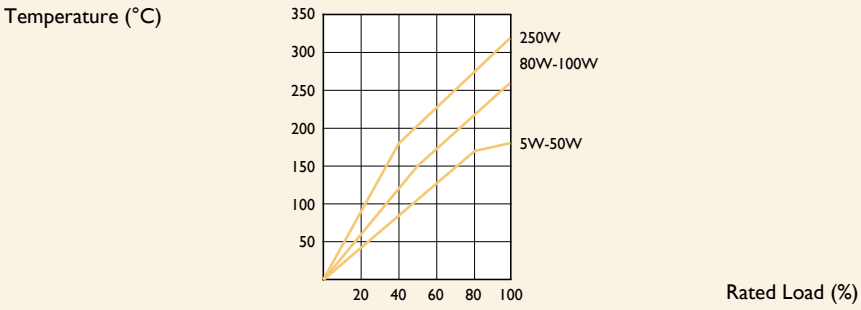
AHA10B



AHA25B

STYLE	DIMENSION												
Normal	**L11**	**L12**	**L2**	**L3**	**A**	**B**	**C**	**ØE**	**S**	**H**	**P**	**M1**	**M2**
AHA500/AHP500	28.6±1.5	71.2±1.5	15.2±0.5	11.5±0.5	16.4±0.5	12.5±0.5	8.5±0.5	2.4±0.3	8.1±1.0	3.8±1.0	6.7±1.0	1.5±0.05	0.8±0.05
AHA10A/AHP10A	34.9±1.5	75.0±1.5	19.0±0.5	14.2±0.5	20.3±0.5	15.9±0.5	10.7±0.5	2.4±0.3	9.9±1.0	4.2±1.0	7.95±1.0	2.0±0.05	0.8±0.05
AHA25A/AHP25A	49.2±1.5	80.0±1.5	27.0±0.5	18.2±0.5	27.4±0.5	19.8±0.5	14.0±0.5	3.2±0.3	13.9±1.0	5.9±1.0	11.1±1.0	2.0±0.05	0.8±0.05
AHA50A/AHP50A	70.6±1.5	106±1.5	50.0±0.5	40.0±0.5	29.0±0.5	21.4±0.5	16.0±05	3.2±0.3	15.5±1.0	6.6±1.0	10.3±1.0	2.0±0.05	0.8±0.05
AHA80A	102±2.0	-	66.0±1.0	35.0±0.5	47.0±0.5	37.0±0.5	28.0±05	4.5±0.3	25.0±1.0	12.0±1.0	-	2.0±0.05	-
AHA10B	139±2.0	-	89.0±1.0	70.0±0.5	71.2±0.5	57.2±0.5	46.0±0.8	4.8±0.3	44.6±1.0	19.6±1.0	-	5.0±0.05	-
AHA25B	177±2.0	-	144.4±1.0	76.2±0.5	76.0±0.5	64.0±0.5	54.0±0.8	4.8±0.3	55.6±1.0	24.4±1.0	-	6.0±0.05	-

TEMPERATURE RISE



ELECTRICAL CHARACTERISTICS

STYLE	AHA500 AHP500	AHA10A AHP10A	AHA25A AHP25A	AHA50A AHP50A	AHA80A	AHA10B	AHA25B
Power Rating on std. heatsink at 25°C	5W	10W	25W	50W	80W	100W	250W
Voltage Proof on Insulation	1,000V			2,000V		4,500V	
Resistance Range	0.1Ω - 1KΩ	0.1Ω - 1.5KΩ	0.1Ω - 10KΩ	0.1Ω - 33KΩ	0.1Ω - 39KΩ	0.1Ω - 51KΩ	
Operating Temp. Range	-55°C to +250°C						
Temperature Coefficient	±50ppm/°C, ±100ppm/°C, ±200ppm/°C						

Note: Special value is available on request.

ENVIRONMENTAL CHARACTERISTICS

PERFORMANCE TEST	TEST METHOD		APPRAISE
Short Time Overload	IEC 60115-1 4.13	5 times of rated power for 5 sec.	±1.0%+0.05Ω
Voltage Proof on Insulation	IEC 60115-1 4.7	in V-block for 60 Sec., test voltage by type	By type
Temperature Coefficient	IEC 60115-1 4.8	-55°C to +250°C	By type
Insulation Resistance	IEC 60115-1 4.6	in V-block for 60 Sec.	>100MΩ
Solderability	IEC 60115-1 4.17	235±5°C for 3±0.5 Sec.	95% Min. coverage
Solvent Resistance of Marking	IEC 60115-1 4.30	IPA for 5±0.5 Min. with ultrasonic	No deterioration of coatings and markings
Robustness of Terminations	IEC 60115-1 4.16	Pull test (30 Sec. Min): 5W: 1kg, 10W: 2.3kg, 25 - 50W: 4.5kg Torque test (5 - 15 Sec): 80W: 2N, 100W: 2.7N, 250W: 3.7N	±0.2%+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 70°C	IEC 60115-1 4.25	70±2°C at RCWV 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: Rated Continuous Working Voltage (RCWV) = $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$ or Max. working voltage listed above, whichever less.

EXPLANATIONS OF ORDERING CODE

MFR	-12	F	T	F	52-	100R
Code 1 - 3 **Series Name** See Index	Code 4 - 6 **Power Rating** -05 = ød0.5mm -06 = ød0.6mm -07 = ød0.7mm -08 = ød0.8mm -10 = ød1.0mm -14 = ød1.4mm -12 = 1/6W -25 = 1/4W 25S = 1/4WS -50 = 1/2W 50S = 1/2WS 100 = 1W 1WS = 1WS 200 = 2W 2WS = 2WS 204 = 0.4W 207 = 0.6W 300 = 3W 3WS = 3WS 3WM = 3WM 400 = 4W 500 = 5W 5WS = 5WS 5SS = 5WSS 700 = 7W 7WS = 7WS 10A = 10W 20A = 20W 30A = 30W 40A = 40W 50A = 50W 10S = 10WS 15A = 15W 25A = 25W 10B = 100W 25B = 250W	Code 7 **Tolerance** P = ±0.02 % A = ±0.05 % B = ±0.1 % C = ±0.25% D = ±0.5 % F = ±1 % G = ±2 % J = ±5 % K = ±10 % - = Base on Spec.	Code 8 **Packing Style** T = Tape/Box R = Tape/Reel B = Bulk	Code 9 **Temperature Coefficient of Resistance** - = Base on Spec. A = ±5 ppm/°C B = ±10 ppm/°C C = ±15 ppm/°C S = ± 20ppm/°C D = ±25 ppm/°C E = ±50 ppm/°C F = ±100 ppm/°C G = ±200 ppm/°C H = ±250 ppm/°C I = ±300 ppm/°C J = ±350 ppm/°C	Code 10 - 12 **Forming Type** 26- = 26mm 52- = 52.4mm 73- = 73mm 81- = 81mm 91- = 91mm F = F Type FK = FK Type FKK = FKK Type FFK = F-form Kink M = M-Type Forming MB = M-form W/flat MT = MT Type Forming MR = MR Type AV = AVIsert PN = PANAsert	Code 13 - 17 **Resistance Value** 0R1 = 0.1 100R = 100 10K = 10,000 10M = 10,000,000

EXCEPTION:

• Cement series:

<Code 8>: Special packing style code

B: Bulk with wirewound or metal oxide sub-assembly for resistance value
W: Bulk with ceramic based wirewound sub-assembly for resistance value
M: Bulk with metal oxide sub-assembly for resistance value
F: Bulk with Fiberglass based wirewound sub-assembly for resistance value

<Code 10-12>: Without forming code

Example: SQP500J**B**-10R

• JPW series:

<Code 13-17>: without resistance value code

Example: JPW-06-T-52-