

# DATA SHEET

## ALUMINUM HOUSED RESISTORS

High Power, Wirewound  
Threaded, Chassis Mount

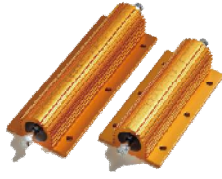
AHB Series

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

75W to 500W

RoHS compliant & Halogen Free





**APPLICATIONS**

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

**FEATURES**

- Reduced size
- Heatsink mounted
- Excellent surge performance
- Corrosion-resistant aluminum are corrugated for added strength and power dissipation
- 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**

AHB    10B    J    B    -    U    100R  
 (1)    (2)    (3)    (4)    (5)    (6)    (7)

**(1) SERIES**

AHB Series

**(2) POWER RATING**

|            |            |
|------------|------------|
| 75A = 75W  | 25B = 250W |
| 10B = 100W | 30B = 300W |
| 15B = 150W | 50B = 500W |
| 20B = 200W |            |

**(3) TOLERANCE**

|         |          |
|---------|----------|
| F = ±1% | J = ±5%  |
| G = ±2% | K = ±10% |

**(4) PACKAGING**

B = Bulk

**(5) TEMPERATURE COEFFICIENT OF RESISTANCE**

|              |                    |
|--------------|--------------------|
| E=±50ppm/°C  | - = Based on spec. |
| F=±100ppm/°C |                    |

**(6) TYPE**

Optional code, represents specific requirement,

Example:

U = Resin glue filling

W = Silicone sealant filling

GW = Silicone sealant filling, terminal diameter in 2 mm

Null = Quartz filling, resin glue sealing

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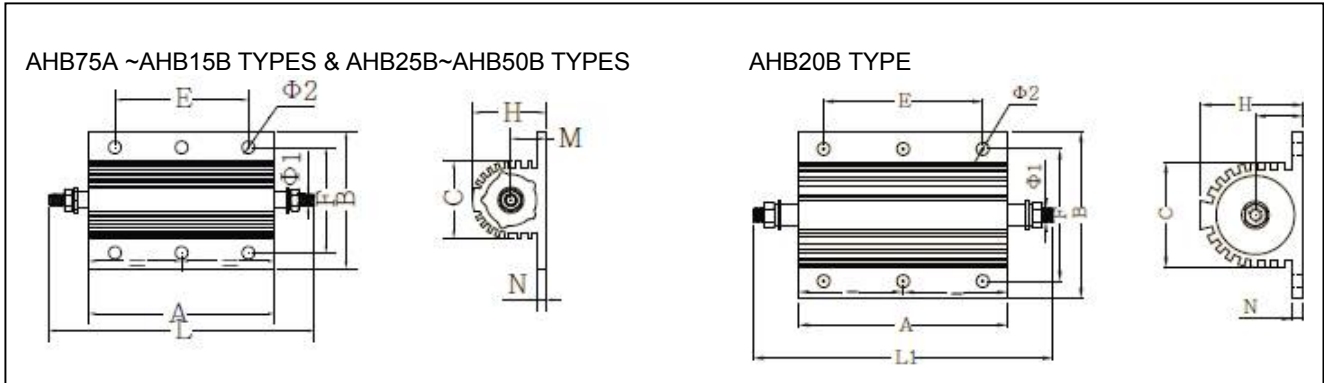
**(7) RESISTANCE VALUE**

E24 & E96 Series

Example:

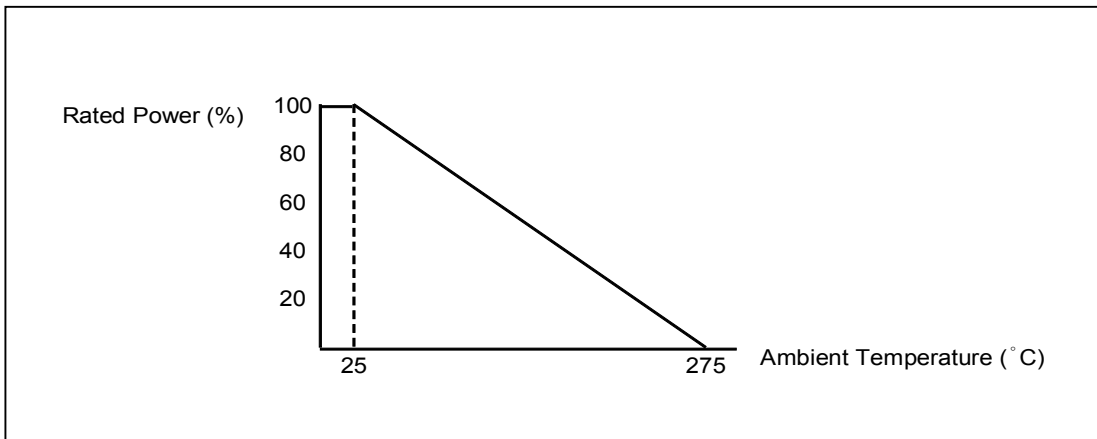
0R1 = 0.1Ω, 10R = 10Ω, 1K = 1,000Ω

**DIMENSIONS**



| TYPE   | DIMENSIONS |          |          |          |          |          |          |          |           |         | Unit: mm |         |
|--------|------------|----------|----------|----------|----------|----------|----------|----------|-----------|---------|----------|---------|
|        | Normal     | A        | B        | L        | H        | C        | E        | F        | M         | N       | Ψ1       | Ψ2      |
| AHB75A |            | 65.5±2.0 | 48.0±2.0 | 93.5±3.0 | 26.0±1.0 | 27.0±1.5 | 47.0±2.0 | 37.0±1.5 | 13± 1.5   | 3.5±0.5 | M4       | 4.4±0.5 |
| AHB10B |            | 98.0±2.0 | 48.0±2.0 | 126±3.0  | 26.0±1.0 | 27.0±1.5 | 70.0±2.0 | 37.0±1.5 | 13± 1.5   | 3.5±0.5 | M4       | 4.4±0.5 |
| AHB15B |            | 130±2.0  | 48.0±2.0 | 158±3.0  | 26.0±1.0 | 27.0±1.5 | 104±2.0  | 37.0±1.5 | 13± 1.5   | 3.5±0.5 | M4       | 4.4±0.5 |
| AHB20B |            | 92.0±2.0 | 73.0±2.0 | 132±3.0  | 45.0±1.0 | 46.5±1.5 | 70.0±2.0 | 58.0±1.5 | 21.0± 1.5 | 5.0±0.5 | M6       | 5.5±0.5 |
| AHB25B |            | 112±2.0  | 73.0±2.0 | 152±3.0  | 45.0±1.0 | 46.5±1.5 | 90.0±2.0 | 58.0±1.5 | 21.0± 1.5 | 5.0±0.5 | M6       | 5.5±0.5 |
| AHB30B |            | 130±2.0  | 73.0±2.0 | 170±3.0  | 45.0±1.0 | 46.5±1.5 | 102±2.0  | 58.0±1.5 | 21.0± 1.5 | 5.0±0.5 | M6       | 5.5±0.5 |
| AHB50B |            | 204±2.0  | 73.0±2.0 | 244±3.0  | 45.0±1.0 | 46.5±1.5 | 174±2.0  | 58.0±1.5 | 21.0± 1.5 | 5.0±0.5 | M6       | 5.5±0.5 |

**DERATING CURVE**



**ELECTRICAL CHARACTERISTICS**

| CHARACTERISTICS  | AHB75A                 | AHB10B      | AHB15B      | AHB20B      | AHB25B      | AHB30B      | AHB50B      |
|--|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Power Rating on standard heatsink at 25 °C             | 75W                    | 100W        | 150W        | 200W        | 250W        | 300W        | 500W        |
| Power Rating without heatsink at 25 °C                 | 45W                    | 50W         | 55W         | 50W         | 60W         | 75W         | 200W        |
| Maximum Working Voltage (On standard heatsink )        | 1400V                  | 1900V       | 2500V       | 1900V       | 2200V       | 2500V       | 2500V       |
| Standard Heatsink Surface area(cm <sup>2</sup> )       | 995                    | 995         | 995         | 3750        | 4765        | 5780        | 8500        |
| Standard Heatsink Thickness (mm)                       | 3                      | 3           | 3           | 3           | 3           | 3           | 3           |
| Voltage Proof on Insulation                            | 2000V                  | 2000V       | 2000V       | 2500V       | 2500V       | 2500V       | 2500V       |
| Voltage Proof on Insulation (Resin glue filling)       | 2000V                  | 2000V       | 2000V       | 2500V       | 2500V       | 2500V       | 2500V       |
| Voltage Proof on Insulation (Silicone sealant filling) | 4500V                  | 4500V       | 4500V       | 4500V       | 4500V       | 4500V       | 4500V       |
| Resistance Range                                       | 0.1Ω ~ 20KΩ            | 0.1Ω ~ 24KΩ | 0.1Ω ~ 27KΩ | 0.1Ω ~ 30KΩ | 0.1Ω ~ 33KΩ | 0.1Ω ~ 39KΩ | 0.1Ω ~ 43KΩ |
| Operating Temp. Range                                  | - 55°C to +275°C       |             |             |             |             |             |             |
| Temperature Coefficient                                | ±50ppm/°C , ±100ppm/°C |             |             |             |             |             |             |

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

**SCREW FASTENNGTORQUE STANDARD ( FOR REFERENCE )**

| THREAD SPECIFICATION | M2  | M4  | M6  | M8  |
|----------------------|-----|-----|-----|-----|
| Torque(Kgf.cm)       | 1.5 | 12  | 30  | 70  |
| Tolerance            | 10% | 10% | 10% | 10% |

**TEST AND REQUIREMENTS**

| TEST                          | TEST METHOD      | PROCEDURE   | 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 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                         |
| 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 | Direct load for 10 Sec. in the direction of the terminal leads                | ≥40N                                      |
| 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 70°C             | IEC 60115-1 4.25 | 70±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)

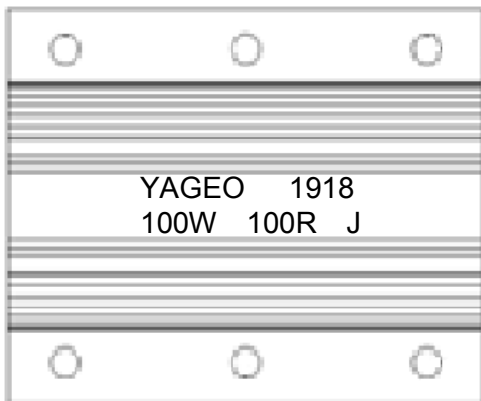
R=Resistance value (Ω)

**BULK PACKING**

Unit: Piece

| Normal | PACKAGE | Quantity |
|--------|---------|----------|
| AHB75A | Bulk    | 12       |
| AHB10B | Bulk    | 9        |
| AHB15B | Bulk    | 6        |
| AHB20B | Bulk    | 4        |
| AHB25B | Bulk    | 2        |
| AHB30B | Bulk    | 2        |
| AHB50B | Bulk    | 1        |

**MARKING**



**Example:**

- |       |                |
|-------|----------------|
| YAGEO | = Brand        |
| 1918  | = Date code    |
| 100W  | = Power rating |
| 100R  | = Resistance   |
| J     | = Tolerance    |

**REVISION HISTORY**

| REVISION  | DATE        | CHANGE NOTIFICATION | DESCRIPTION                         |
|-----------|-------------|---------------------|-------------------------------------|
| Version 0 | Aug.2, 2021 | -                   | - First issue of this specification |

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