

# A Series

## PulsEater® Ceramic Composition Available in E12 Ohmic values



The “A” Series non-inductive, ceramic composite resistors are designed for a variety of applications where high energy handling capabilities are crucial. These resistors are ideal for any application which is subject to surges, high peak power, or impulse energy.

Their unique design allows uniform distribution of energy throughout their structure which results in low thermal stress. The high-temperature, solvent-resistant epoxy coating carries a UL94V0 flammability rating which is suitable for almost any environment.



\*AZ style is provided with dual terminal wires

### FEATURES

- High Surge Energy
- Non-Inductive
- Small Size

### APPLICATIONS

- Motor Drives
- Power Supplies, UPS
- Power Conversion
- In-Rush Current Limiting

### SERIES SPECIFICATIONS

| Series | Resistance <sup>1</sup><br>(ohms) | P<br>avg. <sup>2</sup><br>(watts) | Impulse<br>Voltage <sup>3</sup><br>(volts) | Energy <sup>4</sup><br>(joule) |
|--------|-----------------------------------|-----------------------------------|--------------------------------------------|--------------------------------|
| AV     | 3.3 to 10K                        | 2.0                               | 1000                                       | 250                            |
| AW     | 4.7 to 15K                        | 2.5                               | 1500                                       | 400                            |
| AX     | 1.0 to 3.3K                       | 3.5                               | 1000                                       | 700                            |
| AY     | 2.2 to 6.8K                       | 4.5                               | 2000                                       | 1400                           |
| AZ     | 1.5 to 4.7K                       | 5.5                               | 2500                                       | 2800                           |

<sup>1</sup>E12 Standard Values  $\pm 10\%$ ; <sup>2</sup>Free Air 40°C Ambient; <sup>3</sup>In Air; <sup>4</sup>Single Impulse

### CHARACTERISTICS

|                              |                                                                            |
|------------------------------|----------------------------------------------------------------------------|
| <b>Resistance Element</b>    | Bulk Ceramic                                                               |
| <b>Terminals</b>             | Radial; 100% Sn solder coated radial (60/40 solder available upon request) |
| <b>Coating</b>               | UL94V0, solvent resistant epoxy                                            |
| <b>Tolerance</b>             | $\pm 10\%$ Standard                                                        |
| <b>Operating Temp. Range</b> | -55°C to 150°C                                                             |
| <b>Derating</b>              | Derates linearly from 100% @ 50°C to 0% @ 150°C                            |
| <b>Temperature Rise</b>      | 100°C @ 100% rated power, 50°C ambient                                     |

| Parameter                    | Max. $\Delta R$ | Test Method                                                                                                |
|------------------------------|-----------------|------------------------------------------------------------------------------------------------------------|
| <b>Life Test</b>             | +5%             | MIL-STD-202F, method 108A, except 50°C, 1000 hrs. @ rated power; 1.5 hrs. ON, 0.5 hrs. OFF                 |
| <b>Single Pulse Energy</b>   | $\pm 1.5\%$     | Single pulse, capacitor discharge at Rated Energy; 350VDC for AW and AX sizes; 650VDC for AY and AZ sizes. |
| <b>Repetitive HV Pulsing</b> | $\pm 2.0\%$     | 10 joules @ 5.0KV, 10,000 cycles                                                                           |
| <b>Short-time Overload</b>   | $\pm 1.5\%$     | 10x rated power. 5 sec. ON, 5 sec. OFF, 5 cycles                                                           |
| <b>Short-term High Temp</b>  | $\pm 1.5\%$     | 250°C for 30 seconds                                                                                       |
| <b>Long-term High Temp</b>   | $\pm 2.0\%$     | 1000 hours @ 150°C                                                                                         |
| <b>Thermal Shock Cycle</b>   | $\pm 2.0\%$     | MIL-STD-202F, method 107D. -55°C to +125°C, 5 cycles                                                       |
| <b>Moisture Resistance</b>   | $\pm 1.0\%$     | 90% to 95% rh @ 40°C, 1000 hrs.                                                                            |

### Mounting clip



This saddle clip conforms to the configuration of Ohmite's A Series resistor to provide secure mounting. Made of a durable thermoplastic polyester, the saddle clip is designed to secure the A Series in place while safely withstanding its operating temperatures. Use (2) saddle clips per resistor for extra stability.

| Part No. | Dim. (mm)<br>D | H  | L  | for Series | Color |
|----------|----------------|----|----|------------|-------|
| 5911E    | 20             | 23 | 13 | AX and AY  | White |
| 5910E    | 25             | 26 | 15 | AZ         | Black |

(continued)

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## DIMENSIONS



| Series | P<br>avg. 2<br>(watts) | L<br>max.<br>(mm) | D<br>max.<br>(mm) | H<br>max.<br>(mm) | S<br>norm.<br>(mm) | Term. wire<br>gauge<br>(AWG) | Weight<br>(g) |
|--------|------------------------|-------------------|-------------------|-------------------|--------------------|------------------------------|---------------|
| AV     | 2.0                    | 15                | 13                | 22                | 12.5               | 20                           | 3.9           |
| AW     | 2.5                    | 20                | 13                | 19                | 17.5               | 20                           | 5.4           |
| AX     | 3.5                    | 15                | 21                | 26                | 12.5               | 18                           | 10            |
| AY     | 4.5                    | 25                | 21                | 26                | 22.5               | 18                           | 19            |
| AZ     | 5.5                    | 30                | 26                |                   | 27                 | 18                           | 33            |

## ORDERING INFORMATION

RoHS compliant

**A W 5 6 G K E**

Size      Ohm Value      Tolerance  
Example:  
33G = 3.3 Ohms      K = 10% std.  
330 = 33 Ohms      M = 20%  
331 = 330 Ohms

### Standard Values

| Ohmic value | Part No.<br>Prefix<br>Suffix | Series | Ohmic value | Part No.<br>Prefix<br>Suffix | Series | Ohmic value | Part No.<br>Prefix<br>Suffix | Series | Ohmic value | Part No.<br>Prefix<br>Suffix | Series |
|-------------|------------------------------|--------|-------------|------------------------------|--------|-------------|------------------------------|--------|-------------|------------------------------|--------|
| 1.0 — 10GK  |                              | ✓      | 5.6 — 56GK  |                              |        | 33 — 330K   |                              | ✓      | 220 — 221K  |                              | ✓      |
| 1.2 — 12GK  |                              |        | 6.8 — 68GK  |                              | ✓      | 39 — 390K   |                              | ✓      | 270 — 271K  |                              |        |
| 1.5 — 15GK  |                              |        | 8.2 — 82GK  |                              |        | 47 — 470K   |                              | ✓      | 330 — 331K  |                              |        |
| 1.8 — 18GK  |                              |        | 10 — 100K   |                              | ✓      | 56 — 560K   |                              | ✓      | 470 — 471K  |                              | ✓      |
| 2.2 — 22GK  |                              | ✓      | 12 — 120K   |                              | ✓      | 68 — 680K   |                              | ✓      | 560 — 561K  |                              |        |
| 2.7 — 27GK  |                              |        | 15 — 150K   |                              | ✓      | 82 — 820K   |                              | ✓      | 680 — 681K  |                              | ✓      |
| 3.3 — 33GK  |                              | ✓      | 18 — 180K   |                              |        | 100 — 101K  |                              | ✓      | 820 — 821K  |                              | ✓      |
| 3.9 — 39GK  |                              |        | 22 — 220K   |                              | ✓      | 120 — 121K  |                              |        | 1000 — 102K |                              | ✓      |
| 4.7 — 47GK  |                              | ✓      | 27 — 270K   |                              | ✓      | 150 — 151K  |                              | ✓      |             |                              |        |
|             |                              |        |             |                              |        | 180 — 181K  |                              |        |             |                              |        |

Check product availability at [www.ohmite.com](http://www.ohmite.com)

✓ = Standard values      Non-standard values subject to a minimum handling charge per item.