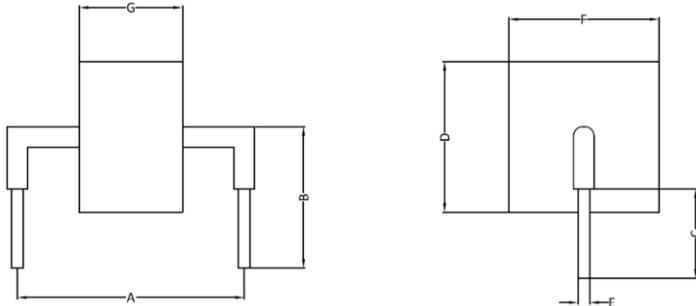


### AK Package Dimension



| Symbol | Dimension in mm |
|--------|-----------------|
| A      | 24.15 ± 0.72    |
| B      | 15.0 ± 1.0      |
| C      | 6.6 ± 1.0       |
| D      | 13.5 Max        |
| E      | 1.25 ± 0.05     |
| F      | 13.5 Max        |

### FEATURES

- Glass passivated junction
- Bi-directional
- RoHS compliant
- 6,000A surge current capability at 8/20µS waveform per IEC61000-4-5
- Excellent clamping capability
- Coating powder has Underwriters Laboratory Flammability 94V-0
- ESD protection of data lines in accordance with IEC61000-4-2
- EFT protection of data lines in accordance with IEC61000-4-4



### MECHANICAL DATA

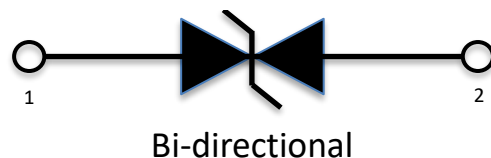
**Terminal:** Ag Plated leads, solderable per MIL-STD 750, Method 2026

**Mounting Position:** Any

### PRIMARY CHARACTERISTICS

|                  |                |
|------------------|----------------|
| V <sub>RWM</sub> | 58V to 430V    |
| V <sub>BR</sub>  | 64V to 490V    |
| I <sub>PPM</sub> | 6,000A         |
| Polarity         | Bi-directional |
| Package          | Axial Lead     |

### Functional Diagram



### MAXIMUM RATINGS (25°C ambient temperature unless otherwise specified)

| Parameter   | Symbol           | Value       | Unit |
|---|------------------|-------------|------|
| Peak Pulse Current of on 8/20µs waveform <sup>(1)</sup> | I <sub>PPM</sub> | 6,000       | Amps |
| Operating Storage Temperature Range                     | T <sub>STG</sub> | -55 to +150 | °C   |
| Operating Junction Temperature Range                    | T <sub>J</sub>   | -55 to +125 | °C   |

Note

(1) Non-repetitive current pulse above T<sub>A</sub> = 25 °C

**ELECTRICAL CHARACTERISTICS**

| PART NUMBER | MARKING CODE | TEST CURRENT<br>$I_T$ (mA) | BREAKDOWN VOLTAGE<br>$V_{BR}(V)$ @ $I_T$ |     | REVERSE STAND- OFF VOLTAGE<br>$V_{RWM}(V)$ | MAXIMUM REVERSE LEAKAGE CURRENT<br>$I_R(\mu A)$ @ $V_{RWM}$ | MAXIMUM CLAMPING VOLTAGE<br>@PEAK PULSE CURRENT <sup>(2)</sup> |              |
|-------------|--------------|----------------------------|--|-----|--|---|--|--------------|
|             |              |                            | MIN                                      | MAX |  |   | $V_{CL}$   | $I_{PP}(KA)$ |
| AK6-058C    | 6-058C       | 10                         | 64                                       | 70  | 58   | 10  | 110  | 6            |
| AK6-076C    | 6-076C       | 10                         | 85                                       | 95  | 76   | 10  | 140  | 6            |
| AK6-100C    | 6-100C       | 10                         | 110                                      | 130 | 100  | 10  | 180  | 6            |
| AK6-170C    | 6-170C       | 10                         | 180                                      | 220 | 170  | 10  | 260  | 6            |
| AK6-190C    | 6-190C       | 10                         | 200                                      | 240 | 190  | 10  | 290  | 6            |
| AK6-240C    | 6-240C       | 10                         | 250                                      | 285 | 240  | 10  | 340  | 6            |
| AK6-270C    | 6-270C       | 10                         | 280                                      | 320 | 270  | 10  | 380  | 6            |
| AK6-380C    | 6-380C       | 10                         | 401                                      | 443 | 380  | 10  | 520  | 6            |
| AK6-430C    | 6-430C       | 10                         | 440                                      | 490 | 430  | 10  | 625  | 6            |

Note:

(2) Using 8/20 $\mu$ S surge shaped waveform defined in IEC61000-4-5.

**Wave Solder Profile**

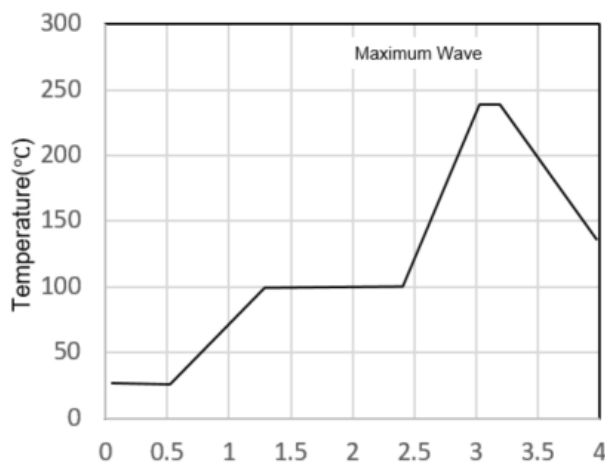


Fig 1. Non Lead-free profile

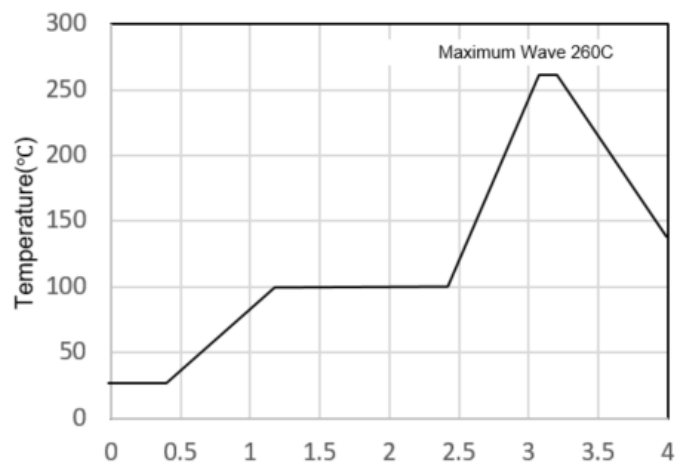


Fig 2. Lead-free profile

RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

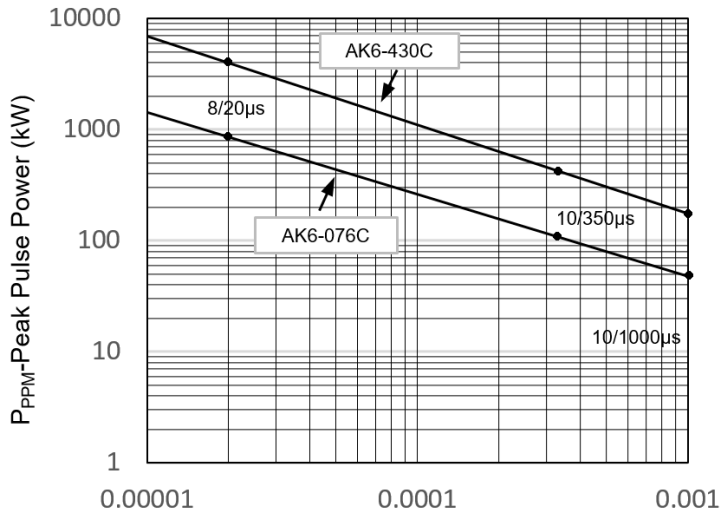


Fig 3. Peak Pulse Power Rating

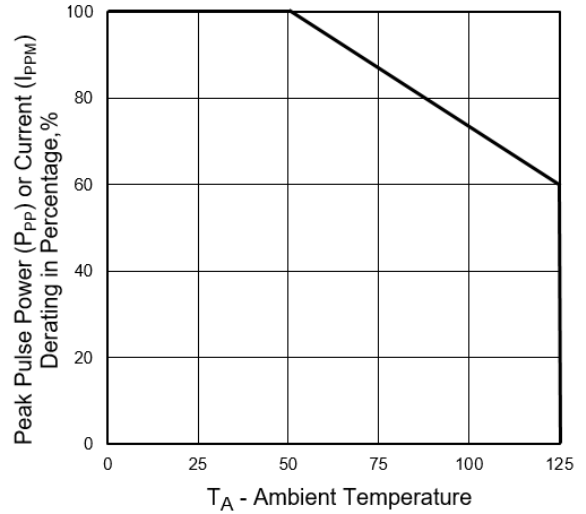


Fig 4. Pulse De-rating Curve

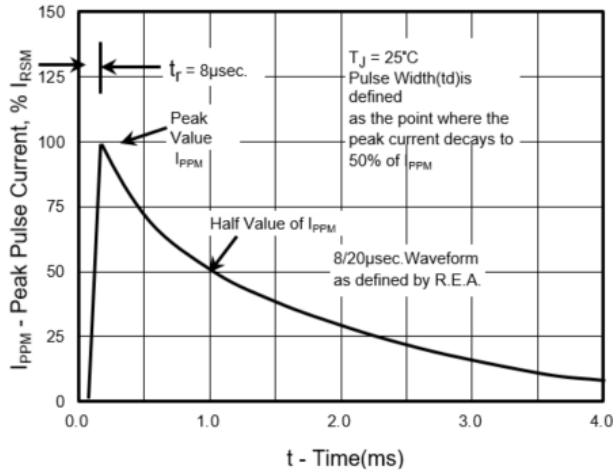


Fig 5. Pulse Waveform

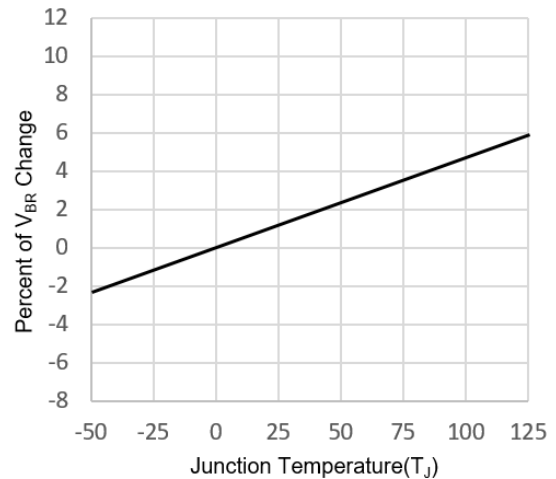


Fig 6. Typical  $V_{BR}$  Vs Junction Temperature

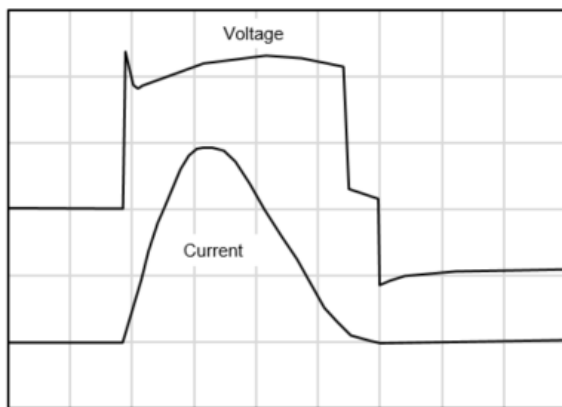


Fig 7. Surge Response (8/20 current waveform) <sup>(3)</sup>

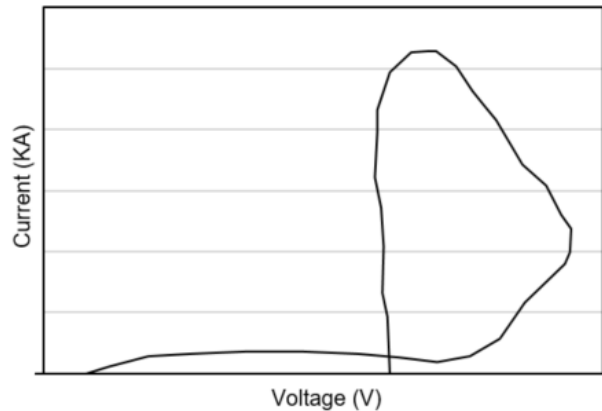


Fig 8. Surge Response

Note:

(3) The power dissipation causes a change in avalanche voltage during the surge and the avalanche voltage eventually returns to the original value when the transient has passed.

## Ordering Information

| Part Number | Quantity | Packing Option | Component Package |
|-------------|----------|----------------|-------------------|
| AK6-xxxC    | 30       | Bulk           | AK Package        |



AOS Green Products use reduced levels of Halogens, and are also RoHS compliant. Please visit [www.aosmd.com/media/AOSGreenPolicy.pdf](http://www.aosmd.com/media/AOSGreenPolicy.pdf) for additional information.

Note: Green Product means Pb-free, RoHS and Halogens free compliant.

| Part Number  | Part Marking  |
|--|---|
| <p><b>AK6- XXXX</b></p> <p>Reverse working voltage</p> <p>Series</p> | <p>6-XXXX — Marking Code</p> <p>Logo</p> <p>Date Code</p> |

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