

AK1 Series



Agency Approvals

| AGENCY | AGENCY FILE NUMBER |
|---|--------------------|
|  | E128662 |

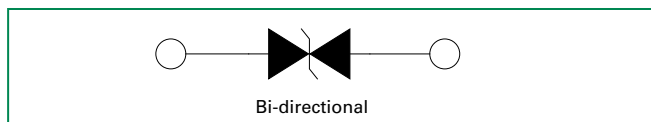
Maximum Ratings and Thermal Characteristics (T_A=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--------------------------------------|------------------|-------------|------|
| Operating Storage Temperature Range | T _{STG} | (-55 to 150 | °C |
| Operating Junction Temperature Range | T _J | (-55 to 125 | °C |
| Current Rating ¹ | I _{PP} | 1 | kA |


Note:

1. Rated I_{PP} measured with 8/20μs pulse.

Functional Diagram



Electrical Characteristics (T_A=25°C unless otherwise noted)

| Part Numbers | Part Marking | Standoff Voltage (V _{SO}) Volts | Max. Reverse Leakage (I _R) @ V _{SO} μA | Typical I _R @ 85°C (μA) | Reverse Breakdown Voltage (V _{BR}) @ I _T | | Test Current I _T (mA) | Max. Clamping Voltage V _{CL} @ I _{PP} Peak Pulse Current (I _{PP}) (Note 1) | | Max. Temp Coefficient OF V _{BR} (%/°C) | Max. Capacitance 0 Bias 10kHz (nF) | Agency Approval  |
|--------------|--------------|---|---|------------------------------------|---|-----------|----------------------------------|--|----------------------|---|------------------------------------|---|
| | | | | | Min Volts | Max Volts | | V _{CL} Volts | I _{PP} Amps | | | |
| AK1 - 076C | 1-076C | 76 | 10 | 15 | 85 | 95 | 10 | 140 | 1,000 | 0.1 | 8.5 | X |

Note: Using 8/20μs wave shape as defined in IEC 61000-4-5.

Description

The AK1 series of high current transient suppressors have been specially designed for use in A.C. line protection and any demanding applications (AC or DC). Any voltage rise due to increased current conduction is contained to a minimum, providing the best possible protection level. They can also be connected in series and/or parallel to create very high capacity protection solutions.

Features

- Very low clamping voltage
- Ultra compact: less than one-tenth the size of traditional discrete solutions
- Sharp breakdown voltage
- Low slope resistance
- Bi-directional
- IEC-61000-4-2 ESD 15kV(Air), 8kV (Contact)
- Symmetric in leads width for easier soldering during assembly
- ESD protection of data lines in accordance with IEC 61000-4-2 (IEC801-2)
- EFT protection of data lines in accordance with IEC 61000-4-4 (IEC801-4)
- Halogen-free
- RoHS compliant
- Glass passivated junction

Additional Information



Datasheet



Resources



Samples

Physical Specifications

| | |
|-----------------|--|
| Weight | Contact manufacturer |
| Case | Epoxy encapsulated |
| Terminal | Silver plated leads, solderable per MIL-STD-750, Method 2026 |

Flow/Wave Soldering (Solder Dipping)

| | |
|---------------------------|------------|
| Peak Temperature : | 265°C |
| Dipping Time : | 10 seconds |
| Soldering : | 1 time |

Wave Solder Profile

Figure 1 - Non Lead-free Profile

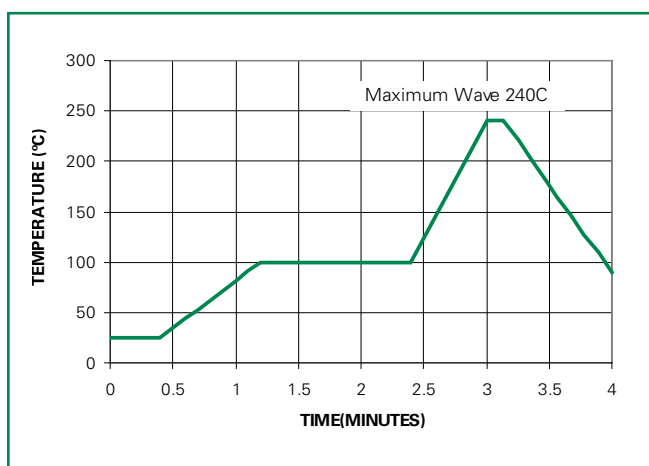
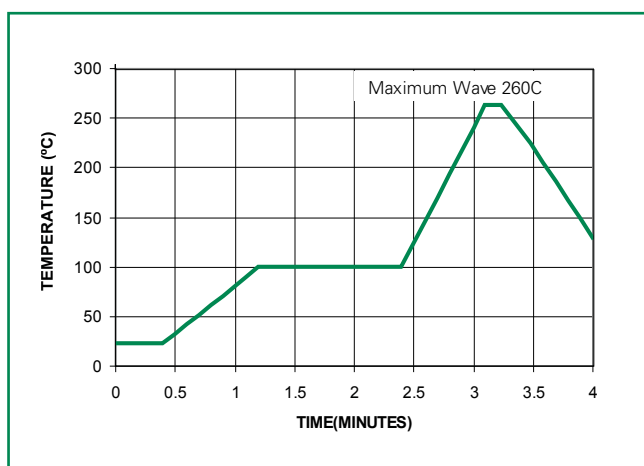


Figure 2 - Lead-free Profile



Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 3 - Peak Power Derating

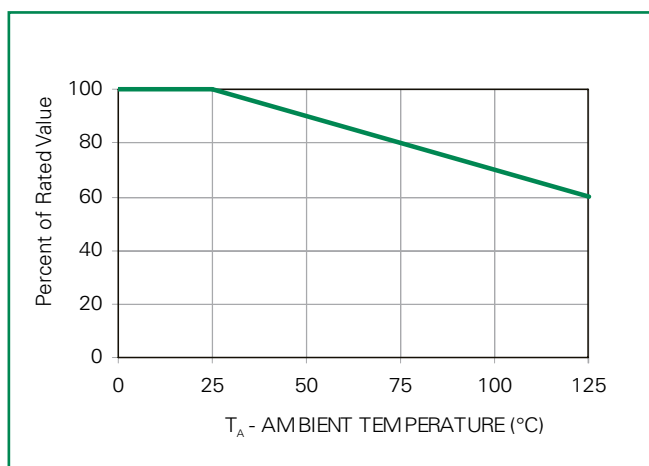
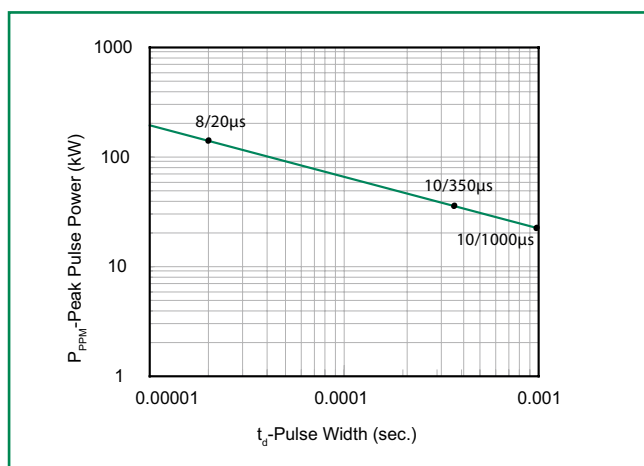


Figure 4 - Typical Peak Pulse Power Rating Curve



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Figure 5 - Typical V_{BR} Vs Junction Temperature

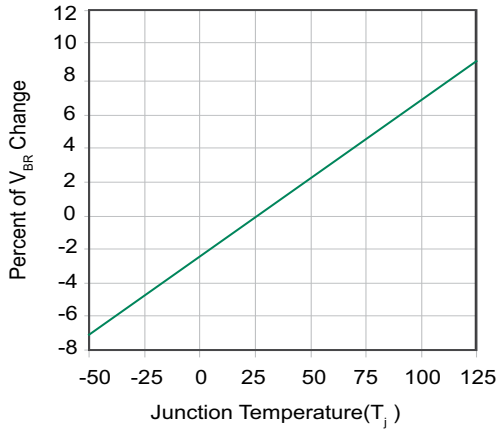
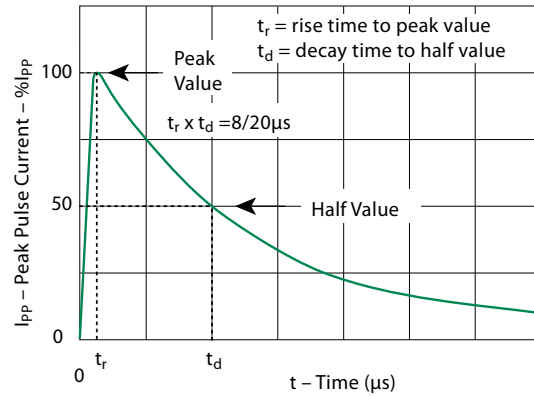
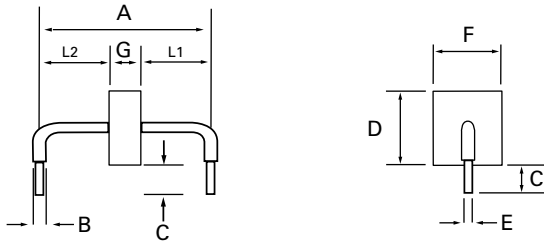


Figure 6 - Pulse Waveform

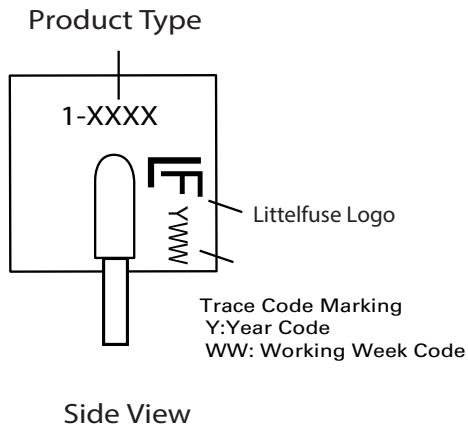


Dimensions

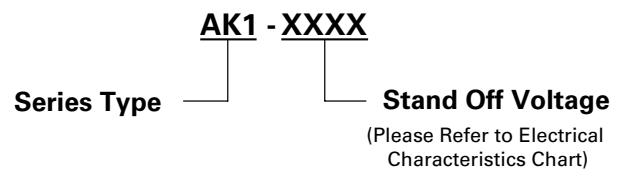


| Dimensions | Inches | Millimeters |
|--------------|--|----------------|
| A | 0.950 +/- 0.040 | 24.15 +/- 1.00 |
| B | 0.095 +/- 0.024 | 2.4 +/- 0.60 |
| C | 0.145 +/- 0.040 | 3.68 +/- 1.00 |
| D | 0.570 max. | 14.48 max. |
| E | 0.050 +/- 0.002 | 1.270 +/- 0.05 |
| F | 0.500 max. | 12.70 max. |
| G | 0.096 +/- 0.040 | 2.44 +/- 1.00 |
| L1/L2 | L1 = L2 tolerance +/- 0.04 inch (1.0 mm) | |

Part Marking System



Part Numbering System



Packing Options

| Part Number | Component Package | Quantity | Packaging Option |
|-------------|-------------------|----------|------------------|
| AK1-XXXX | AK Package | 56 | Bulk |