

Radial Lead Transient Voltage Suppressors (TVS)

KB Series 6KA

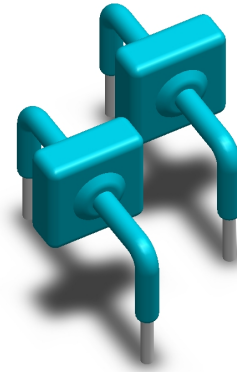
Description

The KB 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.

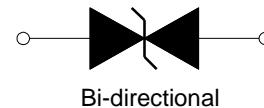
Features

- u Axial lead terminals
- u High current transient suppressor
- u Excellent Clamping Capability
- u Glass Passivated Junction
- u Bi-directional
- u Low Slope Resistance
- u Repetition Rate (duty cycle):0.01%
- u Hazardous Substances Free
- u RoHS Compliant
- u High Temperature soldering: 260°C/10 seconds at terminals
- u Epoxy Encapsulated
- u Silver plated leads
- u Solderable per MIL-STD-202 Method 208

Bi-directional



Functional Diagram



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

| Parameter | Symbol | Value | Unit |
|-----------------------------|------------------|-------------|------|
| Operating junction | T _J | -55 to +150 | °C |
| Storage Temperature Range | T _{STG} | -55 to +150 | °C |
| Current Rating ¹ | I _{PP} | 6 | KA |

Notes:

1. Rated IPP measured with 8 × 20μs pulse.

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

| Part Number | Reverse Stand-Off Voltage | | Breakdown Voltage | Test Current | Current Rating | Maximum Clamping Voltage | Reverse Leakage |
|-------------|---------------------------|---------------------|---------------------------------------------|------------------------|--------------------------------|----------------------------------------|-----------------------------------------|
| | V _{AC} (V) | V _{DC} (V) | V _{BR} (V) MIN. @I _T | I _T (mA) | I _{PP} 8/20μs (KA) | V _C (V) @I _{PP} | I _R (μA) @V _{DC} |
| KB-058 | 40 | 58 | 64 | 10 | 6 | 110 | 20 |
| KB-076 | 54 | 76 | 83 | 10 | 6 | 135 | 20 |
| KB-170 | 130 | 170 | 180 | 10 | 6 | 260 | 20 |
| KB-190 | 145 | 190 | 200 | 10 | 6 | 290 | 20 |
| KB-240 | 180 | 240 | 250 | 10 | 6 | 340 | 20 |
| KB-380 | 275 | 380 | 401 | 10 | 6 | 520 | 20 |
| KB-430 | 310 | 430 | 440 | 10 | 6 | 625 | 20 |

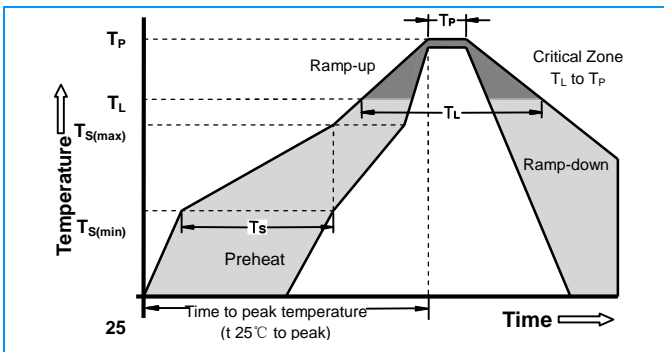
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Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted) (Continued)

Physical Specifications

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

Soldering Parameters



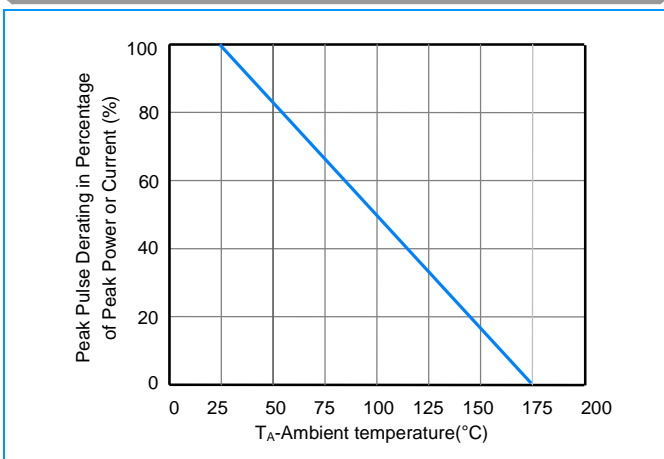
| Reflow Condition | | Lead-free assembly |
|------------------------------------------------------|-------------------------------------|--------------------|
| Pre Heat | - Temperature Min ($T_{s(\min)}$) | 150°C |
| | - Temperature Max ($T_{s(\max)}$) | 200°C |
| | - Time (min to max) (t_s) | 60 - 180 Seconds |
| Average ramp up rate (Liquidus Temp T_L) to peak | | 3°C/second max |
| $T_{s(\max)}$ to T_L - Ramp-up Rate | | 3°C/second max |
| Reflow | - Temperature (T_L) (Liquidus) | 217°C |
| | - Time (min to max) (t_s) | 60 - 150 Seconds |
| Peak Temperature (T_P) | | 260 +0/-5°C |
| Time within 5°C of actual peak Temperature (t_p) | | 20 - 40 Seconds |
| Ramp-down Rate | | 6°C/second max |
| Time 25°C to peak Temperature (T_P) | | 8 minutes Max |
| Do not exceed | | 280°C |

Flow/Wave Soldering (Solder Dipping)

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

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

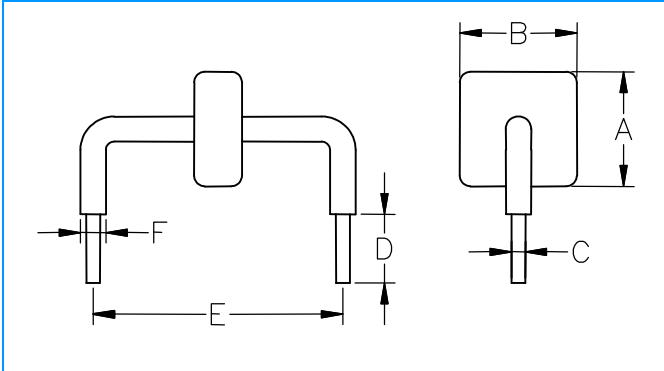
Pulse Derating Curve



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Dimensions



| Dimensions | Inches | Millimeters |
|------------|------------------------|---------------------|
| A | max 0.571 | max 14.5 |
| B | Max0.500 | max 12.7 |
| C | $\Phi 0.051 \pm 0.004$ | $\Phi 1.30 \pm 0.1$ |
| D | 0.236 ± 0.040 | 6.0 ± 1.0 |
| E | 0.950 ± 0.028 | 24.15 ± 0.7 |
| F | max 0.10 | max 2.5 |

Part Numbering

