

Transient Voltage Suppressors 1V5KE6V8(C)A - 1V5KE440(C)A

Features

- Glass passivated junction.
- 1500W Peak Pulse Power capability at 1.0 ms.
- Excellent clamping capability.
- Low incremental surge resistance.
- Fast response time; typically less than 1.0 ps from 0 volts to BV for unidirectional and 5.0 ns for bidirectional.
- Typical I_R less than 1.0 μ A above 10V.
- UL certified, UL #E210467.



DO-201AE
COLOR BAND DENOTES CATHODE ON UNIDIRECTIONAL DEVICES ONLY. NO COLOR BAND ON BIDIRECTIONAL DEVICES.

DEVICES FOR BIPOLAR APPLICATIONS

- Bidirectional types use CA suffix.
- Electrical Characteristics apply in both directions.

1500 Watt Transient Voltage Suppressors

Absolute Maximum Ratings* $T_A = 25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Value | Units |
|-----------|---|-------------|------------------|
| P_{PPM} | Peak Pulse Power Dissipation at $T_P=1\text{ms}$ | 1500 | W |
| I_{PPM} | Peak Pulse Current | see table | A |
| P_D | Power Dissipation .375 " lead length @ $T_A = 75^\circ\text{C}$ | 5.0 | W |
| I_{FSM} | Non-repetitive Peak Forward Surge Current superimposed on rated load (JEDEC method) (Note 1) | 200 | A |
| T_{stg} | Storage Temperature Range | -65 to +175 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature | + 175 | $^\circ\text{C}$ |

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Note 1: Measured on 8.3 ms single half-sine wave; Duty cycle = 4 pulses per minute maximum.

1V5KE6V8(C)A - 1V5KE440(C)A

Transient Voltage Suppressors

(continued)

Electrical Characteristics

T_A = 25°C unless otherwise noted

| Uni-directional Bi-directional (C) Device | Reverse Stand-off Voltage V _{RWM} (V) | Breakdown Voltage V _{BR} (V) | | Test Current I _T (mA) | Clamping Voltage @I _{PPM} V _C (V) | Peak Pulse Current I _{PPM} (A) | Reverse Leakage V _{RWM} I _R (μ A)* |
|---|--|--|-------|--|---|--|---|
| | | Min | Max | | | | |
| 1V5KE6V8(C)A | 5.80 | 6.45 | 7.14 | 10 | 10.5 | 143 | 1000 |
| 1V5KE7V5(C)A | 6.40 | 7.13 | 7.88 | 10 | 11.3 | 133 | 500 |
| 1V5KE8V2(C)A | 7.02 | 7.79 | 8.61 | 10 | 12.1 | 124 | 200 |
| 1V5KE9V1(C)A | 7.78 | 8.65 | 9.55 | 1 | 13.4 | 112 | 50 |
| 1V5KE10(C)A | 8.55 | 9.50 | 10.5 | 1 | 14.5 | 103 | 10 |
| 1V5KE11(C)A | 9.40 | 10.5 | 11.6 | 1 | 15.6 | 96.2 | 5 |
| 1V5KE12(C)A | 10.2 | 11.4 | 12.6 | 1 | 16.7 | 90.0 | 5 |
| 1V5KE13(C)A | 11.1 | 12.4 | 13.7 | 1 | 18.2 | 82.0 | 5 |
| 1V5KE15(C)A | 12.8 | 14.3 | 15.8 | 1 | 21.2 | 71.0 | 5 |
| 1V5KE16(C)A | 13.6 | 15.2 | 16.8 | 1 | 22.5 | 67.0 | 5 |
| 1V5KE18(C)A | 15.3 | 17.1 | 18.9 | 1 | 26.2 | 59.5 | 5 |
| 1V5KE20(C)A | 17.1 | 19.0 | 21.0 | 1 | 27.7 | 54.2 | 5 |
| 1V5KE22(C)A | 18.8 | 20.9 | 23.1 | 1 | 30.6 | 49.0 | 5 |
| 1V5KE24(C)A | 20.5 | 22.8 | 25.2 | 1 | 33.2 | 45.2 | 5 |
| 1V5KE27(C)A | 23.1 | 25.7 | 28.4 | 1 | 37.5 | 40.0 | 5 |
| 1V5KE30(C)A | 25.6 | 28.5 | 31.5 | 1 | 41.4 | 36.2 | 5 |
| 1V5KE33(C)A | 28.2 | 31.4 | 34.7 | 1 | 45.7 | 33.0 | 5 |
| 1V5KE36(C)A | 30.8 | 34.2 | 37.8 | 1 | 49.9 | 30.1 | 5 |
| 1V5KE39(C)A | 33.3 | 37.1 | 41.0 | 1 | 53.9 | 28.0 | 5 |
| 1V5KE43(C)A | 36.8 | 40.9 | 45.2 | 1 | 59.3 | 25.3 | 5 |
| 1V5KE47(C)A | 40.2 | 44.7 | 49.4 | 1 | 64.8 | 23.2 | 5 |
| 1V5KE51(C)A | 43.6 | 48.5 | 53.6 | 1 | 70.1 | 21.4 | 5 |
| 1V5KE56(C)A | 47.8 | 53.2 | 58.8 | 1 | 77.0 | 19.5 | 5 |
| 1V5KE62(C)A | 53.0 | 58.9 | 65.1 | 1 | 85.0 | 17.7 | 5 |
| 1V5KE68(C)A | 58.1 | 64.6 | 71.4 | 1 | 92.0 | 16.3 | 5 |
| 1V5KE75(C)A | 64.1 | 71.3 | 78.8 | 1 | 104.0 | 14.6 | 5 |
| 1V5KE82(C)A | 70.1 | 77.9 | 86.1 | 1 | 113.0 | 13.3 | 5 |
| 1V5KE91(C)A | 77.8 | 86.5 | 95.5 | 1 | 125.0 | 12.0 | 5 |
| 1V5KE100(C)A | 85.5 | 95.0 | 105.0 | 1 | 137.0 | 11.0 | 5 |
| 1V5KE110(C)A | 94.0 | 106.0 | 116.0 | 1 | 152.0 | 9.9 | 5 |
| 1V5KE120(C)A | 102.0 | 114.0 | 126.0 | 1 | 165.0 | 9.1 | 5 |
| 1V5KE130(C)A | 111.0 | 124.0 | 137.0 | 1 | 179.0 | 8.4 | 5 |
| 1V5KE150(C)A | 128.0 | 143.0 | 158.0 | 1 | 207.0 | 7.2 | 5 |
| 1V5KE160(C)A | 136.0 | 152.0 | 168.0 | 1 | 219.0 | 6.8 | 5 |
| 1V5KE170(C)A | 145.0 | 162.0 | 179.0 | 1 | 234.0 | 6.4 | 5 |
| 1V5KE180(C)A | 154.0 | 171.0 | 189.0 | 1 | 246.0 | 6.1 | 5 |
| 1V5KE200(C)A | 171.0 | 190.0 | 210.0 | 1 | 274.0 | 5.5 | 5 |
| 1V5KE220(C)A | 185.0 | 209.0 | 231.0 | 1 | 328.0 | 4.6 | 5 |
| 1V5KE250(C)A | 214.0 | 237.0 | 263.0 | 1 | 344.0 | 4.5 | 5 |
| 1V5KE300(C)A | 256.0 | 285.0 | 315.0 | 1 | 414.0 | 3.8 | 5 |
| 1V5KE350(C)A | 300.0 | 333.0 | 368.0 | 1 | 482.0 | 3.2 | 5 |
| 1V5KE400(C)A | 342.0 | 380.0 | 420.0 | 1 | 548.0 | 2.8 | 5 |
| 1V5KE440(C)A | 376.0 | 418.0 | 462.0 | 1 | 602.0 | 2.6 | 5 |

* For bidirectional parts with V_{RWM}<10V, the I_R max limit is doubled.

1V5KE6V8(C)A - 1V5KE440(C)A

Typical Characteristics

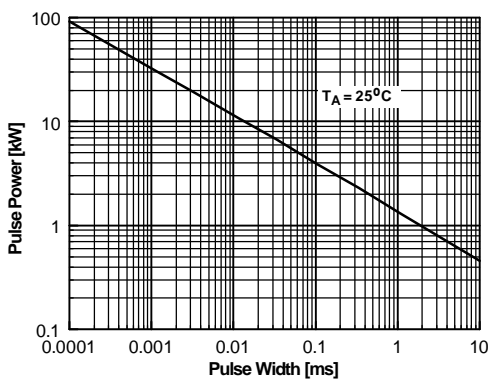


Figure 1. Peak Pulse Power Rating Curve

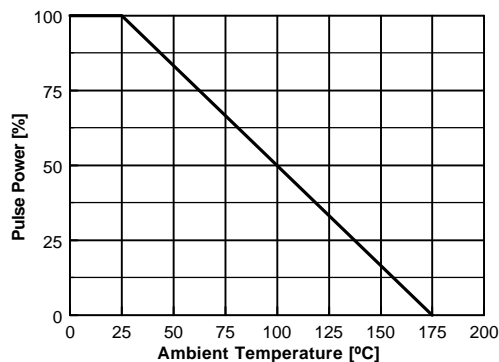


Figure 2. Pulse Derating Curve

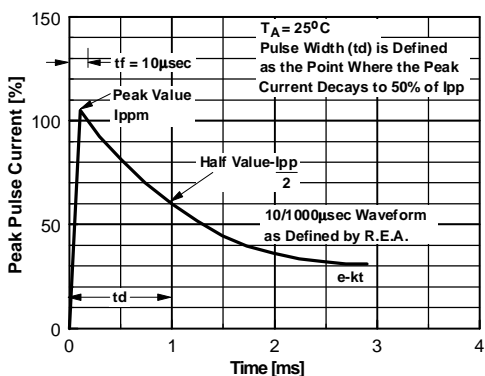


Figure 3. Pulse Waveform

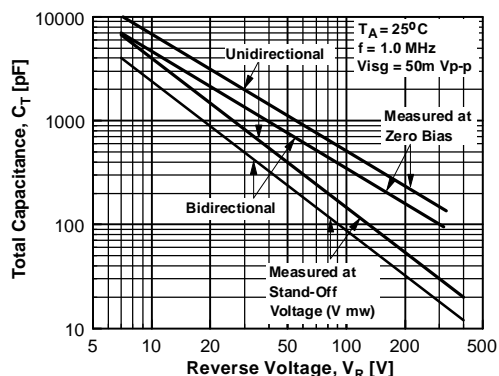


Figure 4. Total Capacitance

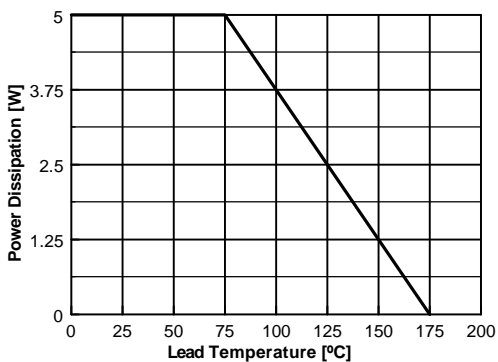


Figure 5. Steady State Power Derating Curve

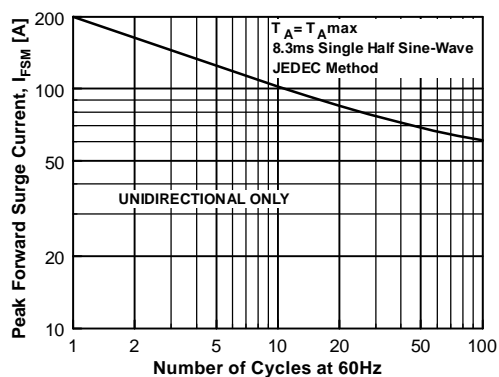


Figure 6. Non-Repetitive Surge Current

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