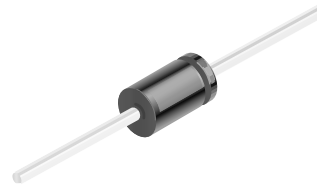


## Transient Voltage Suppressors 1V5KE6V8(C)A - 1V5KE440(C)A

### 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  $\mu$ 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<br>.375" lead length @ $T_A = 75^\circ\text{C}$                               | 5.0         | W                |
| $I_{FSM}$ | Non-repetitive Peak Forward Surge Current<br>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)

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

### Electrical Characteristics

$T_A = 25^\circ\text{C}$  unless otherwise noted

| Uni-directional<br>Bi-directional (C)<br>Device | Reverse<br>Stand-off Voltage<br>$V_{RWM}$ (V) | Breakdown Voltage<br>$V_{BR}$ (V) |       | Test<br>Current<br>$I_T$ (mA) | Clamping<br>Voltage @ $I_{PPM}$<br>$V_C$ (V) | Peak Pulse Current<br>$I_{PPM}$ (A) | Reverse<br>Leakage $V_{RWM}$<br>$I_R$ ( $\mu\text{A}$ )* |
|---|---|-----------------------------------|-------|-------------------------------|--|-------------------------------------|--|
|   |   | 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  $V_{RWM} < 10\text{V}$ , the  $I_R$  max limit is doubled.

Typical Characteristics

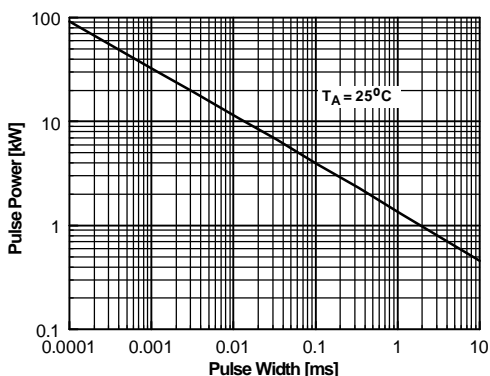


Figure 1. Peak Pulse Power Rating Curve

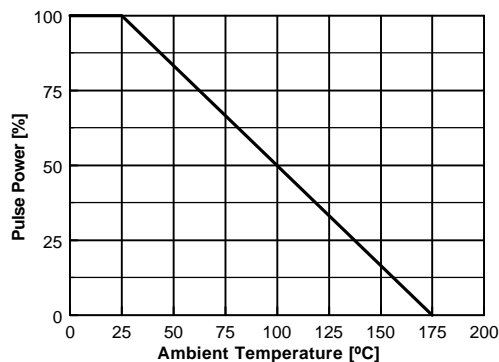


Figure 2. Pulse Derating Curve

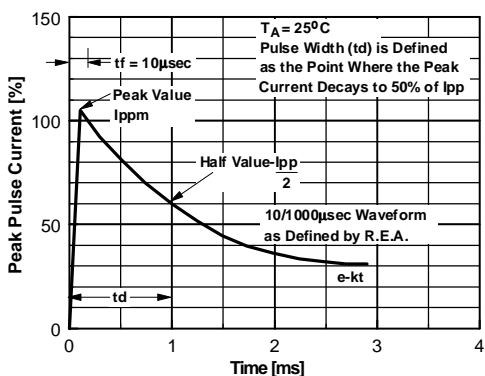


Figure 3. Pulse Waveform

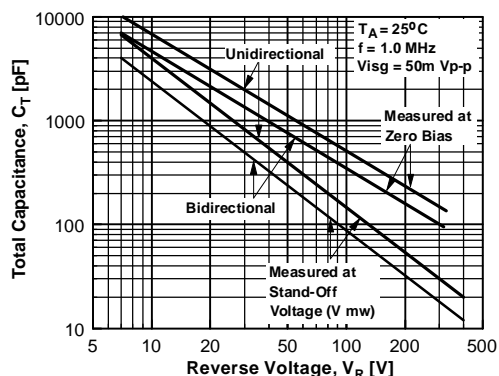


Figure 4. Total Capacitance

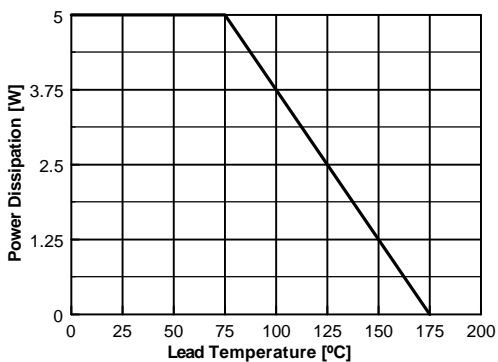


Figure 5. Steady State Power Derating Curve

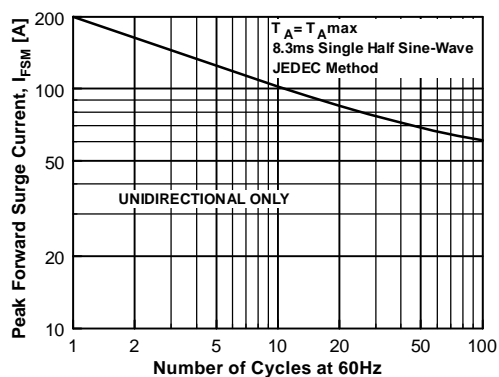


Figure 6. Non-Repetitive Surge Current

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