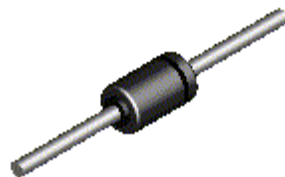


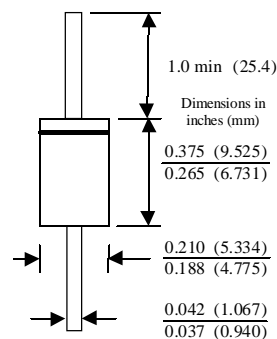
## 1.5KE6.8(C)A - 1.5KE440(C)A

### 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.



**DO-201AE**  
COLOR BAND DENOTES CATHODE



### 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 $T_A = 25^\circ\text{C}$ , $T_P=1\text{ms}$      | minimum 1500 | W                |
| $I_{PPM}$             | Peak Pulse Current   | see table    | A                |
| $P_D$                 | Steady State Power Dissipation<br>.375" lead length @ $T_A = 75^\circ\text{C}$   | 5.0          | W                |
| $i_{f(\text{surge})}$ | 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   | -65 to +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.

# Transient Voltage Suppressors

(continued)

## Electrical Characteristics

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

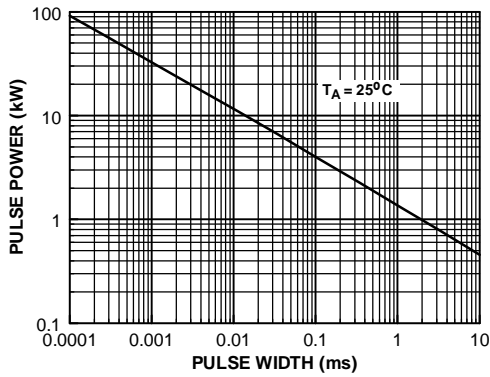
| Uni-directional<br>Bi-directional (C)<br>Device | Reverse<br>Stand-off Voltage<br>$V_{RWM}$ (V) | Breakdown Voltage<br>$V_{BR}$ (V) |       | Test<br>Current<br>$I_T$ (mA) | Max Clamping<br>Voltage @ IPPM<br>$V_C$ (V) | Max Peak Pulse<br>Surge Current<br>$I_{PPM}$ (A) | Max Reverse<br>Leakage $V_{RWM}$<br>$I_R$ (uA)* |
|---|---|-----------------------------------|-------|-------------------------------|---|--|---|
|   |   | min                               | max   |                               |   |  |   |
| 1.5KE6.8(C)A                                    | 5.80  | 6.45                              | 7.14  | 10                            | 10.5  | 143  | 1000  |
| 1.5KE7.5(C)A                                    | 6.40  | 7.13                              | 7.88  | 10                            | 11.3  | 133  | 500   |
| 1.5KE8.2(C)A                                    | 7.02  | 7.79                              | 8.61  | 10                            | 12.1  | 124  | 200   |
| 1.5KE9.1(C)A                                    | 7.78  | 8.65                              | 9.55  | 1                             | 13.4  | 112  | 50  |
| 1.5KE10(C)A                                     | 8.55  | 9.50                              | 10.5  | 1                             | 14.5  | 103  | 10  |
| 1.5KE11(C)A                                     | 9.40  | 10.5                              | 11.6  | 1                             | 15.6  | 96.2   | 5   |
| 1.5KE12(C)A                                     | 10.2  | 11.4                              | 12.6  | 1                             | 16.7  | 90.0   | 5   |
| 1.5KE13(C)A                                     | 11.1  | 12.4                              | 13.7  | 1                             | 18.2  | 82.0   | 5   |
| 1.5KE15(C)A                                     | 12.8  | 14.3                              | 15.8  | 1                             | 21.2  | 71.0   | 5   |
| 1.5KE16(C)A                                     | 13.6  | 15.2                              | 16.8  | 1                             | 22.5  | 67.0   | 5   |
| 1.5KE18(C)A                                     | 15.3  | 17.1                              | 18.9  | 1                             | 26.2  | 59.5   | 5   |
| 1.5KE20(C)A                                     | 17.1  | 19.0                              | 21.0  | 1                             | 27.7  | 54.2   | 5   |
| 1.5KE22(C)A                                     | 18.8  | 20.9                              | 23.1  | 1                             | 30.6  | 49.0   | 5   |
| 1.5KE24(C)A                                     | 20.5  | 22.8                              | 25.2  | 1                             | 33.2  | 45.2   | 5   |
| 1.5KE27(C)A                                     | 23.1  | 25.7                              | 28.4  | 1                             | 37.5  | 40.0   | 5   |
| 1.5KE30(C)A                                     | 25.6  | 28.5                              | 31.5  | 1                             | 41.4  | 36.2   | 5   |
| 1.5KE33(C)A                                     | 28.2  | 31.4                              | 34.7  | 1                             | 45.7  | 33.0   | 5   |
| 1.5KE36(C)A                                     | 30.8  | 34.2                              | 37.8  | 1                             | 49.9  | 30.1   | 5   |
| 1.5KE39(C)A                                     | 33.3  | 37.1                              | 41.0  | 1                             | 53.9  | 28.0   | 5   |
| 1.5KE43(C)A                                     | 36.8  | 40.9                              | 45.2  | 1                             | 59.3  | 25.3   | 5   |
| 1.5KE47(C)A                                     | 40.2  | 44.7                              | 49.4  | 1                             | 64.8  | 23.2   | 5   |
| 1.5KE51(C)A                                     | 43.6  | 48.5                              | 53.6  | 1                             | 70.1  | 21.4   | 5   |
| 1.5KE56(C)A                                     | 47.8  | 53.2                              | 58.8  | 1                             | 77.0  | 19.5   | 5   |
| 1.5KE62(C)A                                     | 53.0  | 58.9                              | 65.1  | 1                             | 85.0  | 17.7   | 5   |
| 1.5KE68(C)A                                     | 58.1  | 64.6                              | 71.4  | 1                             | 92.0  | 16.3   | 5   |
| 1.5KE75(C)A                                     | 64.1  | 71.3                              | 78.8  | 1                             | 104.0                                       | 14.6   | 5   |
| 1.5KE82(C)A                                     | 70.1  | 77.9                              | 86.1  | 1                             | 113.0                                       | 13.3   | 5   |
| 1.5KE91(C)A                                     | 77.8  | 86.5                              | 95.5  | 1                             | 125.0                                       | 12.0   | 5   |
| 1.5KE100(C)A                                    | 85.5  | 95.0                              | 105.0 | 1                             | 137.0                                       | 11.0   | 5   |
| 1.5KE110(C)A                                    | 94.0  | 106.0                             | 116.0 | 1                             | 152.0                                       | 9.9  | 5   |
| 1.5KE120(C)A                                    | 102.0   | 114.0                             | 126.0 | 1                             | 165.0                                       | 9.1  | 5   |
| 1.5KE130(C)A                                    | 111.0   | 124.0                             | 137.0 | 1                             | 179.0                                       | 8.4  | 5   |
| 1.5KE150(C)A                                    | 128.0   | 143.0                             | 158.0 | 1                             | 207.0                                       | 7.2  | 5   |
| 1.5KE160(C)A                                    | 136.0   | 152.0                             | 168.0 | 1                             | 219.0                                       | 6.8  | 5   |
| 1.5KE170(C)A                                    | 145.0   | 162.0                             | 179.0 | 1                             | 234.0                                       | 6.4  | 5   |
| 1.5KE180(C)A                                    | 154.0   | 171.0                             | 189.0 | 1                             | 246.0                                       | 6.1  | 5   |
| 1.5KE200(C)A                                    | 171.0   | 190.0                             | 210.0 | 1                             | 274.0                                       | 5.5  | 5   |
| 1.5KE220(C)A                                    | 185.0   | 209.0                             | 231.0 | 1                             | 328.0                                       | 4.6  | 5   |
| 1.5KE250(C)A                                    | 214.0   | 237.0                             | 263.0 | 1                             | 344.0                                       | 4.5  | 5   |
| 1.5KE300(C)A                                    | 256.0   | 285.0                             | 315.0 | 1                             | 414.0                                       | 3.8  | 5   |
| 1.5KE350(C)A                                    | 300.0   | 333.0                             | 368.0 | 1                             | 482.0                                       | 3.2  | 5   |
| 1.5KE400(C)A                                    | 342.0   | 380.0                             | 420.0 | 1                             | 548.0                                       | 2.8  | 5   |
| 1.5KE440(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.

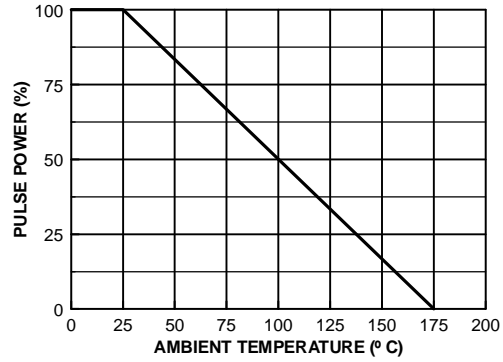
1.5KE6.8(C)A - 1.5KE440(C)A

Typical Characteristics

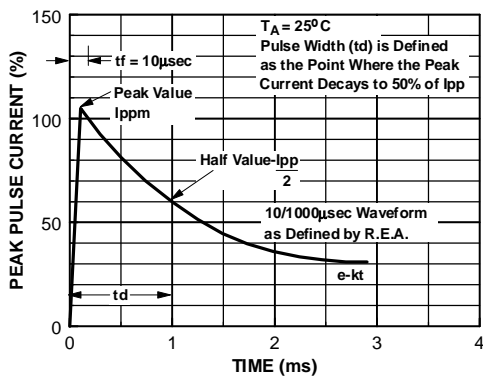
Peak Pulse Power Rating Curve



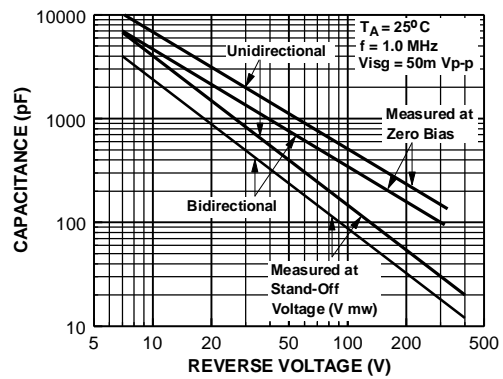
Pulse Derating Curve



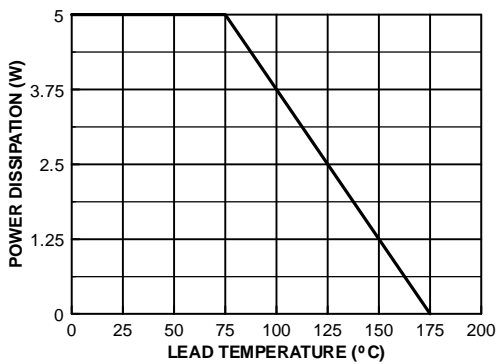
Pulse Waveform



Junction Capacitance



Steady State Power Derating Curve



Non-Repetitive Surge Current

