



# 1.5KE6.8A(CA) - 1.5KE600A(CA)

## AXIAL LEADED TRANSIENT VOLTAGE SUPPRESSOR DIODE

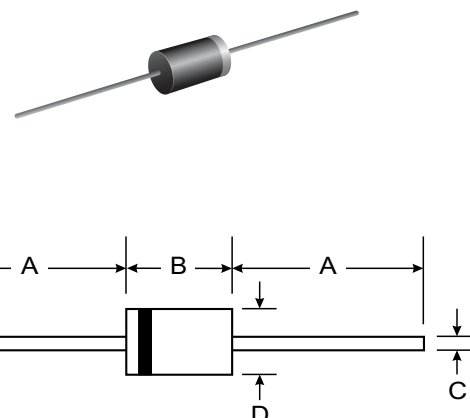
**VOLTAGE RANGE: 6.8 - 600 V**  
**POWER: 1500Watts**

### Features

- Glass Passivated Die Construction  
6.8V – 600V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability

### Mechanical Data

- Case: DO-201AD Molded Plastic
- Terminals: Axial Leads, Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Unidirectional – Device Code and Cathode Band
- Bidirectional – Device Code Only
- Weight: 1.20 grams (approx.)



| DO-201AD             |       |      |
|----------------------|-------|------|
| Dim                  | Min   | Max  |
| A                    | 25.40 | —    |
| B                    | 7.20  | 9.50 |
| C                    | 1.00  | 1.20 |
| D                    | 4.80  | 5.30 |
| All Dimensions in mm |       |      |

### Maximum Ratings and Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

| Characteristic                                                                | Symbol                            | Value        | Unit |
|-------------------------------------------------------------------------------|-----------------------------------|--------------|------|
| Peak Pulse Power Dissipation at T <sub>A</sub> = 25°C (Note 1, 2, 5) Figure 3 | PPPM                              | 1500 Minimum | W    |
| Peak Forward Surge Current (Note 3)                                           | I <sub>FSM</sub>                  | 200          | A    |
| Peak Pulse Current on 10/1000μS Waveform (Note 1) Figure 1                    | I <sub>PPM</sub>                  | See Table 1  | A    |
| Steady State Power Dissipation (Note 2, 4)                                    | P <sub>M(AV)</sub>                | 5.0          | W    |
| Operating and Storage Temperature Range                                       | T <sub>J</sub> , T <sub>STG</sub> | -65 to +175  | °C   |

Note: 1. Non-repetitive current pulse, per Figure 1 and derated above T<sub>A</sub> = 25°C per Figure 4.  
2. Mounted on 40mm<sup>2</sup> copper pad.  
3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.  
4. Lead temperature at 75°C = T<sub>L</sub>.  
5. Peak pulse power waveform is 10/1000μS.



| TYPE      |            | Reverse Stand- Off Voltage | Breakdown Voltage Min. @I <sub>T</sub> | Breakdown Voltage Max. @ I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @ V <sub>RWM</sub> |
|-----------|------------|----------------------------|----------------------------------------|-----------------------------------------|---------------------|-------------------------------------------|---------------------|------------------------------------|
| (UNI)     | (BI)       | V <sub>RWM</sub> (V)       | V <sub>BR</sub> MIN(V)                 | V <sub>BR</sub> MAX(V)                  | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (uA)                |
| 1.5KE6.8A | 1.5KE6.8CA | 5.80                       | 6.45                                   | 7.14                                    | 10                  | 10.5                                      | 144.8               | 1000.0                             |
| 1.5KE7.5A | 1.5KE7.5CA | 6.40                       | 7.13                                   | 7.88                                    | 10                  | 11.3                                      | 134.5               | 500.0                              |
| 1.5KE8.2A | 1.5KE8.2CA | 7.02                       | 7.79                                   | 8.61                                    | 10                  | 12.1                                      | 125.6               | 200.0                              |
| 1.5KE9.1A | 1.5KE9.1CA | 7.78                       | 8.65                                   | 9.55                                    | 1.0                 | 13.4                                      | 113.4               | 50.0                               |
| 1.5KE10A  | 1.5KE10CA  | 8.55                       | 9.50                                   | 10.5                                    | 1.0                 | 14.5                                      | 104.8               | 10.0                               |
| 1.5KE11A  | 1.5KE11CA  | 9.40                       | 10.5                                   | 11.6                                    | 1.0                 | 15.6                                      | 97.4                | 5.0                                |
| 1.5KE12A  | 1.5KE12CA  | 10.2                       | 11.4                                   | 12.6                                    | 1.0                 | 16.7                                      | 91.0                | 5.0                                |
| 1.5KE13A  | 1.5KE13CA  | 11.1                       | 12.4                                   | 13.7                                    | 1.0                 | 18.2                                      | 83.5                | 5.0                                |
| 1.5KE15A  | 1.5KE15CA  | 12.8                       | 14.3                                   | 15.8                                    | 1.0                 | 21.2                                      | 71.7                | 5.0                                |
| 1.5KE16A  | 1.5KE16CA  | 13.6                       | 15.2                                   | 16.8                                    | 1.0                 | 22.5                                      | 67.6                | 5.0                                |
| 1.5KE18A  | 1.5KE18CA  | 15.3                       | 17.1                                   | 18.9                                    | 1.0                 | 25.2                                      | 60.3                | 5.0                                |
| 1.5KE20A  | 1.5KE20CA  | 17.1                       | 19.0                                   | 21.0                                    | 1.0                 | 27.7                                      | 54.9                | 5.0                                |
| 1.5KE22A  | 1.5KE22CA  | 18.8                       | 20.9                                   | 23.1                                    | 1.0                 | 30.6                                      | 49.7                | 5.0                                |
| 1.5KE24A  | 1.5KE24CA  | 20.5                       | 22.8                                   | 25.2                                    | 1.0                 | 33.2                                      | 45.8                | 5.0                                |
| 1.5KE27A  | 1.5KE27CA  | 23.1                       | 25.7                                   | 28.4                                    | 1.0                 | 37.5                                      | 40.5                | 5.0                                |
| 1.5KE30A  | 1.5KE30CA  | 25.6                       | 28.5                                   | 31.5                                    | 1.0                 | 41.4                                      | 36.7                | 5.0                                |
| 1.5KE33A  | 1.5KE33CA  | 28.2                       | 31.4                                   | 34.7                                    | 1.0                 | 45.7                                      | 33.3                | 5.0                                |
| 1.5KE36A  | 1.5KE36CA  | 30.8                       | 34.2                                   | 37.8                                    | 1.0                 | 49.9                                      | 30.5                | 5.0                                |
| 1.5KE39A  | 1.5KE39CA  | 33.3                       | 37.1                                   | 41.0                                    | 1.0                 | 53.9                                      | 28.2                | 5.0                                |
| 1.5KE43A  | 1.5KE43CA  | 36.8                       | 40.9                                   | 45.2                                    | 1.0                 | 59.3                                      | 25.6                | 5.0                                |
| 1.5KE47A  | 1.5KE47CA  | 40.2                       | 44.7                                   | 49.4                                    | 1.0                 | 64.8                                      | 23.5                | 5.0                                |
| 1.5KE51A  | 1.5KE51CA  | 43.6                       | 48.5                                   | 53.6                                    | 1.0                 | 70.1                                      | 21.7                | 5.0                                |
| 1.5KE56A  | 1.5KE56CA  | 47.8                       | 53.2                                   | 58.8                                    | 1.0                 | 77.0                                      | 19.7                | 5.0                                |
| 1.5KE62A  | 1.5KE62CA  | 53.0                       | 58.9                                   | 65.1                                    | 1.0                 | 85.0                                      | 17.9                | 5.0                                |
| 1.5KE68A  | 1.5KE68CA  | 58.1                       | 64.6                                   | 71.4                                    | 1.0                 | 92.0                                      | 16.5                | 5.0                                |
| 1.5KE75A  | 1.5KE75CA  | 64.1                       | 71.3                                   | 78.8                                    | 1.0                 | 103                                       | 14.8                | 5.0                                |
| 1.5KE82A  | 1.5KE82CA  | 70.1                       | 77.9                                   | 86.1                                    | 1.0                 | 113                                       | 13.5                | 5.0                                |
| 1.5KE91A  | 1.5KE91CA  | 77.8                       | 86.5                                   | 95.5                                    | 1.0                 | 125                                       | 12.2                | 5.0                                |
| 1.5KE100A | 1.5KE100CA | 85.5                       | 95.0                                   | 105                                     | 1.0                 | 137                                       | 11.1                | 5.0                                |
| 1.5KE110A | 1.5KE110CA | 94.0                       | 105                                    | 116                                     | 1.0                 | 152                                       | 10.0                | 5.0                                |
| 1.5KE120A | 1.5KE120CA | 102                        | 114                                    | 126                                     | 1.0                 | 165                                       | 9.2                 | 5.0                                |
| 1.5KE130A | 1.5KE130CA | 111                        | 124                                    | 137                                     | 1.0                 | 179                                       | 8.5                 | 5.0                                |
| 1.5KE150A | 1.5KE150CA | 128                        | 143                                    | 158                                     | 1.0                 | 207                                       | 7.3                 | 5.0                                |

For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double



| TYPE      |            | Reverse<br>Stand- Off<br>Voltage | Breakdown<br>Voltage<br>Min. @I <sub>T</sub> | Breakdown<br>Voltage<br>Max. @ I <sub>T</sub> | Test<br>Current     | Maximum<br>Clamping<br>Voltage<br>@I <sub>PP</sub> | Peak<br>Pulse<br>Current | Reverse<br>Leakage<br>@ V <sub>RWM</sub> |
|-----------|------------|----------------------------------|----------------------------------------------|-----------------------------------------------|---------------------|----------------------------------------------------|--------------------------|------------------------------------------|
| (UNI)     | (BI)       | V <sub>RWM</sub> (V)             | V <sub>BR</sub> MIN(V)                       | V <sub>BR</sub> MAX(V)                        | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                                 | I <sub>PP</sub> (A)      | I <sub>R</sub> (uA)                      |
| 1.5KE160A | 1.5KE160CA | 136                              | 152                                          | 168                                           | 1.0                 | 219                                                | 6.9                      | 5.0                                      |
| 1.5KE170A | 1.5KE170CA | 145                              | 162                                          | 179                                           | 1.0                 | 234                                                | 6.5                      | 5.0                                      |
| 1.5KE180A | 1.5KE180CA | 154                              | 171                                          | 189                                           | 1.0                 | 246                                                | 6.2                      | 5.0                                      |
| 1.5KE200A | 1.5KE200CA | 171                              | 190                                          | 210                                           | 1.0                 | 274                                                | 5.5                      | 5.0                                      |
| 1.5KE220A | 1.5KE220CA | 185                              | 209                                          | 231                                           | 1.0                 | 328                                                | 4.6                      | 5.0                                      |
| 1.5KE250A | 1.5KE250CA | 214                              | 237                                          | 263                                           | 1.0                 | 344                                                | 4.4                      | 5.0                                      |
| 1.5KE300A | 1.5KE300CA | 256                              | 285                                          | 315                                           | 1.0                 | 414                                                | 3.7                      | 5.0                                      |
| 1.5KE350A | 1.5KE350CA | 300                              | 333                                          | 368                                           | 1.0                 | 482                                                | 3.2                      | 5.0                                      |
| 1.5KE400A | 1.5KE400CA | 342                              | 380                                          | 420                                           | 1.0                 | 548                                                | 2.8                      | 5.0                                      |
| 1.5KE440A | 1.5KE440CA | 376                              | 418                                          | 462                                           | 1.0                 | 600                                                | 2.5                      | 5.0                                      |
| 1.5KE500A | 1.5KE500CA | 427.5                            | 475                                          | 525                                           | 1.0                 | 690                                                | 2.17                     | 5.0                                      |
| 1.5KE520A | 1.5KE520CA | 444.6                            | 494                                          | 546                                           | 1.0                 | 717.6                                              | 2.09                     | 5.0                                      |
| 1.5KE550A | 1.5KE550CA | 470.3                            | 522.5                                        | 577.5                                         | 1.0                 | 759                                                | 1.98                     | 5.0                                      |
| 1.5KE600A | 1.5KE600CA | 513                              | 570                                          | 630                                           | 1.0                 | 828                                                | 1.81                     | 5.0                                      |



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

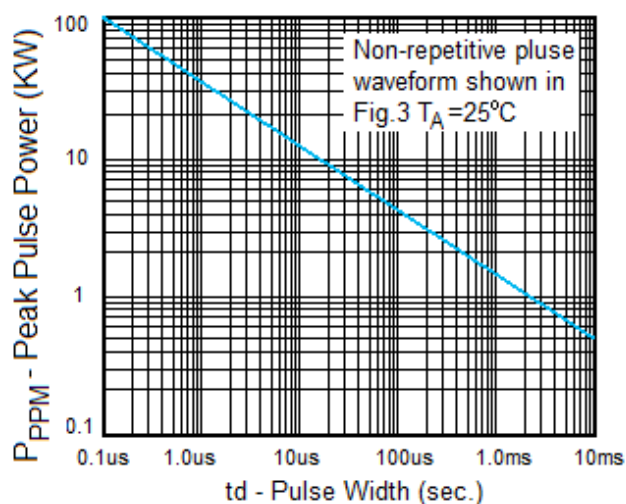


Fig. 1 Peak Pulse Power Rating

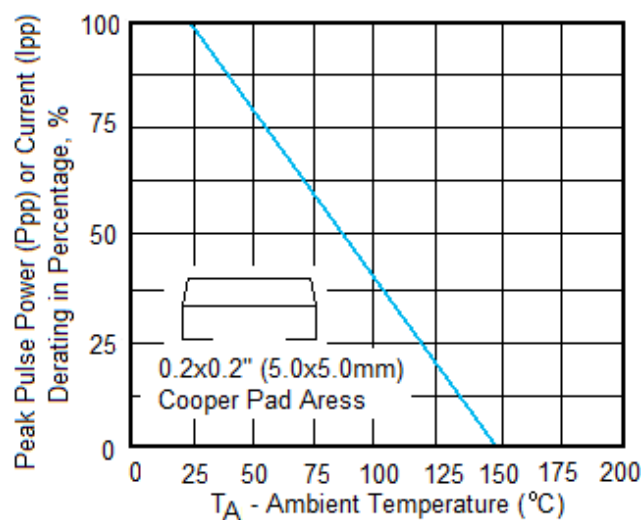


Fig. 2 Pulse Derating Curve

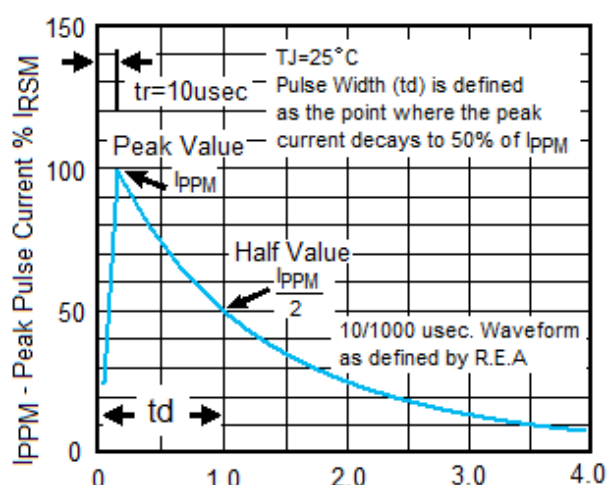


Fig. 3 Pulse Waveform

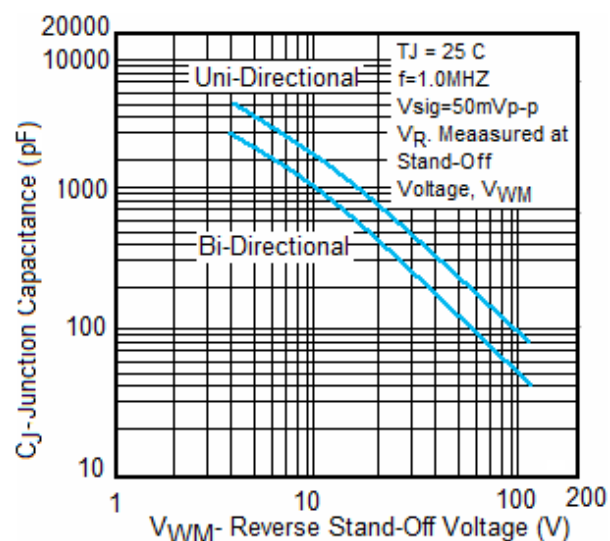


Fig. 4- Typical Junction Capacitance