

**VOLTAGE RANGE: 5.0 - 440 V**

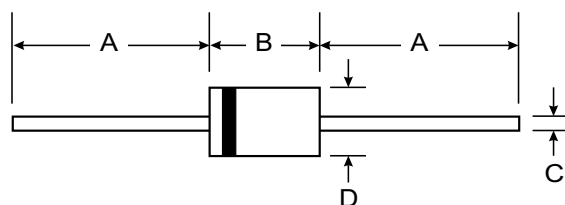
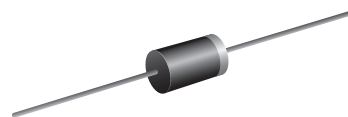
**POWER: 500 Watts**

### Features

- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability

### Mechanical Data

- Case: DO-15
- Terminals: Axial Leads, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking:  
Unidirectional – Device Code and Cathode Band  
Bidirectional – Device Code Only
- Weight: 0.40 grams (approx.)



| DO-15                |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 25.40 | —     |
| B                    | 5.50  | 7.62  |
| C                    | 0.686 | 0.889 |
| D                    | 2.60  | 3.60  |
| 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                              | 500 Minimum | W    |
| Peak Forward Surge Current (Note 3)                                           | I <sub>FSM</sub>                  | 70          | 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>                | 1.0         | 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<br>Stand- Off<br>Voltage | Breakdown<br>Voltage<br>Min. @I <sub>T</sub> | Breakdown<br>Voltage<br>Max. @<br>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)                      |
| SA5.0A | SA5.0CA | 5.0                              | 6.40                                         | 7.25                                             | 10                  | 9.2                                                 | 55.4                     | 600.0                                    |
| SA6.0A | SA6.0CA | 6.0                              | 6.67                                         | 7.67                                             | 10                  | 10.3                                                | 49.5                     | 600.0                                    |
| SA6.5A | SA6.5CA | 6.5                              | 7.22                                         | 8.30                                             | 10                  | 11.2                                                | 45.5                     | 400.0                                    |
| SA7.0A | SA7.0CA | 7.0                              | 7.78                                         | 8.95                                             | 10                  | 12.0                                                | 42.5                     | 150.0                                    |
| SA7.5A | SA7.5CA | 7.5                              | 8.33                                         | 9.58                                             | 1.0                 | 12.9                                                | 39.5                     | 50.0                                     |
| SA8.0A | SA8.0CA | 8.0                              | 8.89                                         | 10.23                                            | 1.0                 | 13.6                                                | 37.5                     | 25.0                                     |
| SA8.5A | SA8.5CA | 8.5                              | 9.44                                         | 10.82                                            | 1.0                 | 14.4                                                | 35.4                     | 10.0                                     |
| SA9.0A | SA9.0CA | 9.0                              | 10.0                                         | 11.5                                             | 1.0                 | 15.4                                                | 33.1                     | 5.0                                      |
| SA10A  | SA10CA  | 10                               | 11.1                                         | 12.8                                             | 1.0                 | 17.0                                                | 30.0                     | 3.0                                      |
| SA11A  | SA11CA  | 11                               | 12.2                                         | 14.0                                             | 1.0                 | 18.2                                                | 28.0                     | 3.0                                      |
| SA12A  | SA12CA  | 12                               | 13.3                                         | 15.3                                             | 1.0                 | 19.9                                                | 25.6                     | 3.0                                      |
| SA13A  | SA13CA  | 13                               | 14.4                                         | 16.5                                             | 1.0                 | 21.5                                                | 23.7                     | 3.0                                      |
| SA14A  | SA14CA  | 14                               | 15.6                                         | 17.9                                             | 1.0                 | 23.2                                                | 22.0                     | 3.0                                      |
| SA15A  | SA15CA  | 15                               | 16.7                                         | 19.2                                             | 1.0                 | 24.4                                                | 20.9                     | 3.0                                      |
| SA16A  | SA16CA  | 16                               | 17.8                                         | 20.5                                             | 1.0                 | 26.0                                                | 19.6                     | 3.0                                      |
| SA17A  | SA17CA  | 17                               | 18.9                                         | 21.7                                             | 1.0                 | 27.6                                                | 18.5                     | 3.0                                      |
| SA18A  | SA18CA  | 18                               | 20.0                                         | 23.3                                             | 1.0                 | 29.2                                                | 17.5                     | 3.0                                      |
| SA20A  | SA20CA  | 20                               | 22.2                                         | 25.5                                             | 1.0                 | 32.4                                                | 15.7                     | 3.0                                      |
| SA22A  | SA22CA  | 22                               | 24.4                                         | 26.9                                             | 1.0                 | 35.5                                                | 14.4                     | 3.0                                      |
| SA24A  | SA24CA  | 24                               | 26.7                                         | 29.5                                             | 1.0                 | 38.9                                                | 13.1                     | 3.0                                      |
| SA26A  | SA26CA  | 26                               | 28.9                                         | 31.9                                             | 1.0                 | 42.1                                                | 12.1                     | 3.0                                      |
| SA28A  | SA28CA  | 28                               | 31.1                                         | 34.4                                             | 1.0                 | 45.4                                                | 11.2                     | 3.0                                      |
| SA30A  | SA30CA  | 30                               | 33.3                                         | 36.8                                             | 1.0                 | 48.4                                                | 10.5                     | 3.0                                      |
| SA33A  | SA33CA  | 33                               | 36.7                                         | 40.6                                             | 1.0                 | 53.3                                                | 9.6                      | 3.0                                      |
| SA36A  | SA36CA  | 36                               | 40.0                                         | 44.2                                             | 1.0                 | 58.1                                                | 8.8                      | 3.0                                      |
| SA40A  | SA40CA  | 40                               | 44.4                                         | 49.1                                             | 1.0                 | 64.5                                                | 7.9                      | 3.0                                      |
| SA43A  | SA43CA  | 43                               | 47.8                                         | 52.8                                             | 1.0                 | 69.4                                                | 7.3                      | 3.0                                      |
| SA45A  | SA45CA  | 45                               | 50.0                                         | 55.3                                             | 1.0                 | 72.7                                                | 7.0                      | 3.0                                      |
| SA48A  | SA48CA  | 48                               | 53.3                                         | 58.9                                             | 1.0                 | 77.4                                                | 6.6                      | 3.0                                      |
| SA51A  | SA51CA  | 51                               | 56.7                                         | 62.7                                             | 1.0                 | 82.4                                                | 6.2                      | 3.0                                      |
| SA54A  | SA54CA  | 54                               | 60.0                                         | 66.3                                             | 1.0                 | 87.1                                                | 5.9                      | 3.0                                      |
| SA58A  | SA58CA  | 58                               | 64.4                                         | 71.2                                             | 1.0                 | 93.6                                                | 5.4                      | 3.0                                      |
| SA60A  | SA60CA  | 60                               | 66.7                                         | 73.7                                             | 1.0                 | 96.8                                                | 5.3                      | 3.0                                      |

| TYPE   |         | Reverse<br>Stand- Off<br>Voltage | Breakdown<br>Voltage<br>Min. @I <sub>r</sub> | Breakdown<br>Voltage<br>Max. @ I <sub>r</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>r</sub> (mA) | V <sub>c</sub> (V)                                 | I <sub>PP</sub> (A)      | I <sub>r</sub> (uA)                     |
| SA64A  | SA64CA  | 64                               | 71.1                                         | 78.6                                          | 1.0                 | 103                                                | 5.0                      | 3.0                                     |
| SA70A  | SA70CA  | 70                               | 77.8                                         | 86.0                                          | 1.0                 | 113                                                | 4.5                      | 3.0                                     |
| SA75A  | SA75CA  | 75                               | 83.0                                         | 92.1                                          | 1.0                 | 121                                                | 4.2                      | 3.0                                     |
| SA78A  | SA78CA  | 78                               | 86.0                                         | 95.8                                          | 1.0                 | 126                                                | 4.0                      | 3.0                                     |
| SA85A  | SA85CA  | 85                               | 94.0                                         | 104                                           | 1.0                 | 137                                                | 3.7                      | 3.0                                     |
| SA90A  | SA90CA  | 90                               | 100                                          | 111                                           | 1.0                 | 146                                                | 3.3                      | 3.0                                     |
| SA100A | SA100CA | 100                              | 111                                          | 123                                           | 1.0                 | 162                                                | 3.1                      | 3.0                                     |
| SA110A | SA110CA | 110                              | 122                                          | 135                                           | 1.0                 | 177                                                | 2.9                      | 3.0                                     |
| SA120A | SA120CA | 120                              | 133                                          | 147                                           | 1.0                 | 193                                                | 2.6                      | 3.0                                     |
| SA130A | SA130CA | 130                              | 144                                          | 159                                           | 1.0                 | 209                                                | 2.4                      | 3.0                                     |
| SA150A | SA150CA | 150                              | 167                                          | 185                                           | 1.0                 | 243                                                | 2.1                      | 3.0                                     |
| SA160A | SA160CA | 160                              | 178                                          | 197                                           | 1.0                 | 259                                                | 2.0                      | 3.0                                     |
| SA170A | SA170CA | 170                              | 189                                          | 209                                           | 1.0                 | 275                                                | 1.9                      | 3.0                                     |
| SA180A | SA180CA | 180                              | 200                                          | 221                                           | 1.0                 | 290                                                | 1.73                     | 3.0                                     |
| SA190A | SA190CA | 190                              | 211                                          | 233                                           | 1.0                 | 306                                                | 1.64                     | 3.0                                     |
| SA200A | SA200CA | 200                              | 222                                          | 245                                           | 1.0                 | 322                                                | 1.56                     | 3.0                                     |
| SA220A | SA220CA | 220                              | 244                                          | 270                                           | 1.0                 | 355                                                | 1.42                     | 3.0                                     |
| SA250A | SA250CA | 250                              | 278                                          | 307                                           | 1.0                 | 403                                                | 1.25                     | 3.0                                     |
| SA300A | SA300CA | 300                              | 333                                          | 368                                           | 1.0                 | 484                                                | 1.04                     | 3.0                                     |
| SA350A | SA350CA | 350                              | 389                                          | 430                                           | 1.0                 | 565                                                | 0.89                     | 3.0                                     |
| SA400A | SA400CA | 400                              | 444                                          | 491                                           | 1.0                 | 645                                                | 0.79                     | 3.0                                     |
| SA440A | SA440CA | 440                              | 489                                          | 540                                           | 1.0                 | 710                                                | 0.71                     | 3.0                                     |

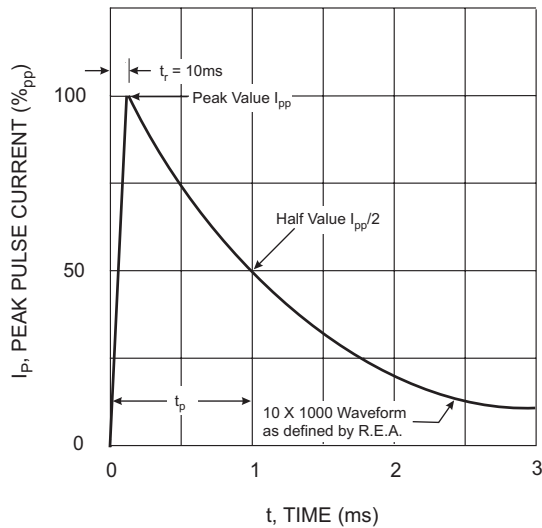


Fig. 1 Pulse Waveform

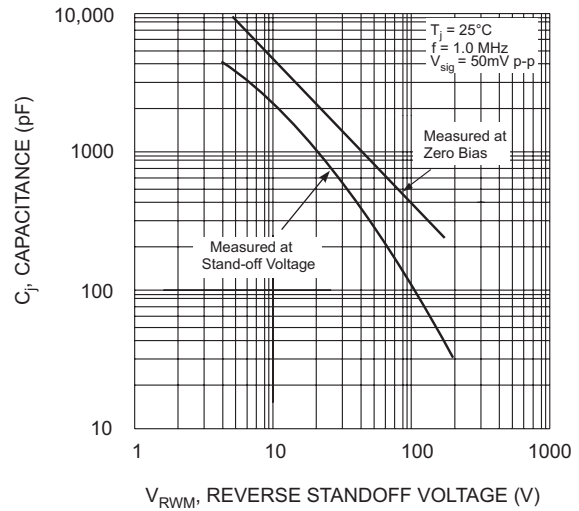


Fig. 2 Typical Junction Capacitance

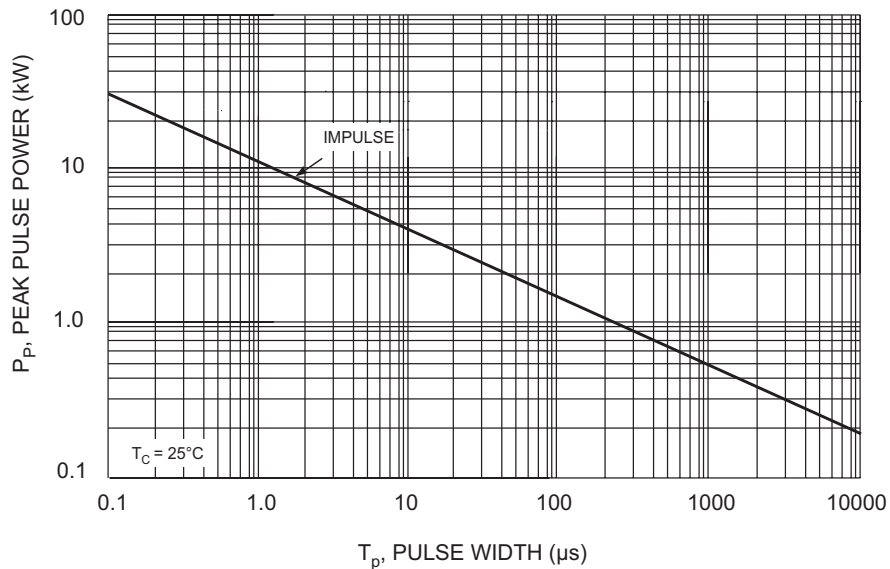


Fig. 3 Pulse Rating Curve

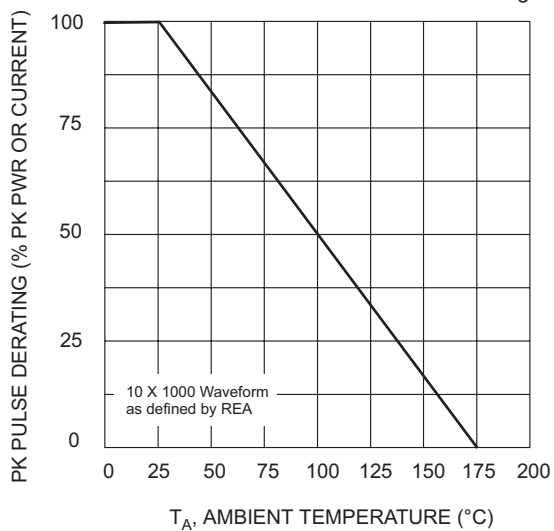


Fig. 4 Pulse Derating Curve

