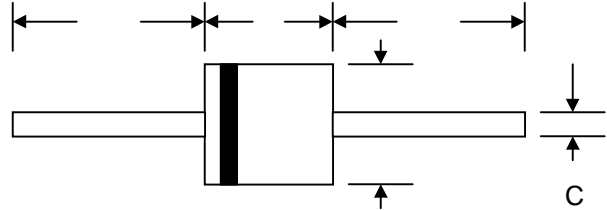


### Features

- 5000W (10/1000µs) Peak Pulse Power
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time : typically less than 1.0 ps from 0 volt to  $V_{BR(min.)}$
- **Pb / RoHS Free**



### Mechanical Data

- Case : R-6 Molded plastic
- Epoxy : UL94V-O rate flame retardant
- Lead : Axial lead solderable per MIL-STD-202, Method 208 guaranteed
- Polarity : Color band denotes cathode end
- Mounting position : Any
- Weight : 2.1 grams

| R-6                  |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 25.4 | —    |
| B                    | 8.60 | 9.10 |
| C                    | 1.20 | 1.30 |
| D                    | 8.60 | 9.10 |
| All Dimensions in mm |      |      |

### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Rating  | Symbol         | Value         | Unit             |
|---|----------------|---------------|------------------|
| Peak Power Dissipation at $T_a = 25^\circ\text{C}$ , $T_p=1\text{ms}$ (Note1)                       | PPK            | Minimum 3000  | W                |
| Steady State Power Dissipation at $T_L = 75^\circ\text{C}$<br>Lead Lengths 0.375", (9.5mm) (Note 2) | $P_D$          | 5.0           | W                |
| Operating and Storage Temperature Range   | $T_J, T_{STG}$ | - 65 to + 175 | $^\circ\text{C}$ |

#### Note :

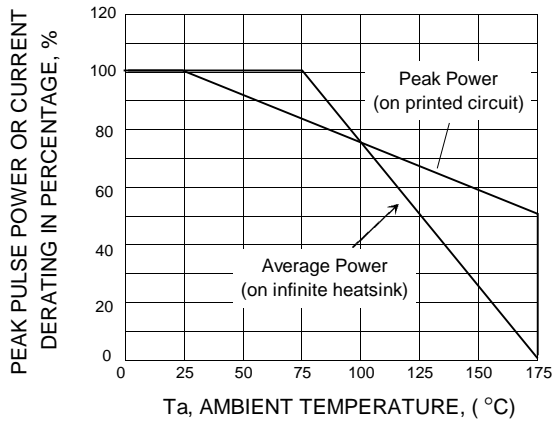
- (1) Non-repetitive Current pulse, per Fig. 5 and derated above  $T_a = 25^\circ\text{C}$  per Fig. 1
- (2) Mounted on Copper Leaf area of  $1.57\text{ in}^2$  ( $40\text{mm}^2$ ).
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per minutes maximum.

| Type No.     | Breakdown voltage<br>(Note 1) |         |       | Max. Leakage<br>current @ $V_{RM}$ |            | Clamping voltage<br>10/1000 $\mu$ s |            | $\alpha T$<br>max<br>(Note 2) | C<br>typ<br>(Note 3) |
|--------------|-------------------------------|---------|-------|------------------------------------|------------|-------------------------------------|------------|-------------------------------|----------------------|
|              | $V_{BR}$                      | @       | $I_R$ | $I_{RM}$                           | @ $V_{RM}$ | $V_{CL}$                            | @ $I_{PP}$ |                               |                      |
|              | min (V)                       | max (V) | (mA)  | ( $\mu$ A)                         | (V)        | max (V)                             | (A)        | $10^{-4}/^{\circ}C$           | (pF)                 |
| BZW50-10 A   | 11.1                          | 13.6    | 1.0   | 5.0                                | 10         | 18.8                                | 266        | 7.8                           | 24000                |
| BZW50-10CA   | 11.1                          | 13.6    | 1.0   | 5.0                                | 10         | 18.8                                | 266        | 7.8                           | 24000                |
| BZW50-12 A   | 13.3                          | 16.3    | 1.0   | 5.0                                | 12         | 22.0                                | 227        | 8.4                           | 18500                |
| BZW50-12CA   | 13.3                          | 16.3    | 1.0   | 5.0                                | 12         | 22.0                                | 227        | 8.4                           | 18500                |
| BZW50-15 A   | 16.6                          | 20.4    | 1.0   | 5.0                                | 15         | 26.9                                | 186        | 8.8                           | 13500                |
| BZW50-15CA   | 16.6                          | 20.4    | 1.0   | 5.0                                | 15         | 26.9                                | 186        | 8.8                           | 13500                |
| BZW50-18 A   | 20.0                          | 24.4    | 1.0   | 5.0                                | 18         | 32.2                                | 155        | 9.2                           | 1150                 |
| BZW50-18CA   | 20.0                          | 24.4    | 1.0   | 5.0                                | 18         | 32.2                                | 155        | 9.2                           | 1150                 |
| BZW50-22 A   | 24.4                          | 29.8    | 1.0   | 5.0                                | 22         | 39.4                                | 127        | 9.6                           | 8500                 |
| BZW50-22CA   | 24.4                          | 29.8    | 1.0   | 5.0                                | 22         | 39.4                                | 127        | 9.6                           | 8500                 |
| BZW50-27 A   | 30.0                          | 36.6    | 1.0   | 5.0                                | 27         | 48.3                                | 103        | 9.8                           | 7000                 |
| BZW50-27CA   | 30.0                          | 36.6    | 1.0   | 5.0                                | 27         | 48.3                                | 103        | 9.8                           | 7000                 |
| BZW50-33 A   | 36.6                          | 44.7    | 1.0   | 5.0                                | 33         | 59.0                                | 85         | 10                            | 5750                 |
| BZW50-33CA   | 36.6                          | 44.7    | 1.0   | 5.0                                | 33         | 59.0                                | 85         | 10                            | 5750                 |
| BZW50-39 A   | 43.3                          | 53.0    | 1.0   | 5.0                                | 39         | 69.4                                | 72         | 10.1                          | 4800                 |
| BZW50-39CA   | 43.3                          | 53.0    | 1.0   | 5.0                                | 39         | 69.4                                | 72         | 10.1                          | 4800                 |
| BZW50-47 A   | 52.0                          | 63.6    | 1.0   | 5.0                                | 47         | 83.2                                | 60.1       | 10.3                          | 4100                 |
| BZW50-47CA   | 52.0                          | 63.6    | 1.0   | 5.0                                | 47         | 83.2                                | 60.1       | 10.3                          | 4100                 |
| BZW50-56 A   | 62.2                          | 76.0    | 1.0   | 5.0                                | 56         | 99.6                                | 50         | 10.4                          | 3400                 |
| BZW50-56CA   | 62.2                          | 76.0    | 1.0   | 5.0                                | 56         | 99.6                                | 50         | 10.4                          | 3400                 |
| BZW50-68 A   | 75.6                          | 92.4    | 1.0   | 5.0                                | 68         | 121                                 | 41         | 10.5                          | 3000                 |
| BZW50-68CA   | 75.6                          | 92.4    | 1.0   | 5.0                                | 68         | 121                                 | 41         | 10.5                          | 3000                 |
| BZW50-82 A   | 91.0                          | 111     | 1.0   | 5.0                                | 82         | 145                                 | 34         | 10.6                          | 2600                 |
| BZW50-82CA   | 91.0                          | 111     | 1.0   | 5.0                                | 82         | 145                                 | 34         | 10.6                          | 2600                 |
| BZW50-100 A  | 111                           | 136     | 1.0   | 5.0                                | 100        | 179                                 | 28         | 10.7                          | 2300                 |
| BZW50-100 CA | 111                           | 136     | 1.0   | 5.0                                | 100        | 179                                 | 28         | 10.7                          | 2300                 |
| BZW50-120 A  | 133                           | 163     | 1.0   | 5.0                                | 120        | 215                                 | 23         | 10.8                          | 1900                 |
| BZW50-120 CA | 133                           | 163     | 1.0   | 5.0                                | 120        | 215                                 | 23         | 10.8                          | 1900                 |
| BZW50-150 A  | 166                           | 204     | 1.0   | 5.0                                | 150        | 269                                 | 19         | 10.8                          | 1700                 |
| BZW50-150 CA | 166                           | 204     | 1.0   | 5.0                                | 150        | 269                                 | 19         | 10.8                          | 1700                 |
| BZW50-180 A  | 200                           | 244     | 1.0   | 5.0                                | 180        | 322                                 | 16         | 10.8                          | 1500                 |
| BZW50-180 CA | 200                           | 244     | 1.0   | 5.0                                | 180        | 322                                 | 16         | 10.8                          | 1500                 |

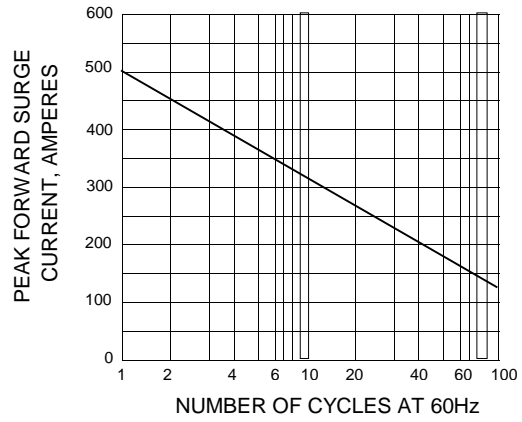
**Notes:**

- (1) Pulse test :  $t_p < 50$  ms.
- (2)  $\Delta V_{BR} = \alpha T * (T_a - 25) * V_{BR} (25^{\circ}C)$
- (3)  $V_R = 0V$ ,  $f = 1MHz$ . For Bidirectional types, capacitance value is divided by 2.

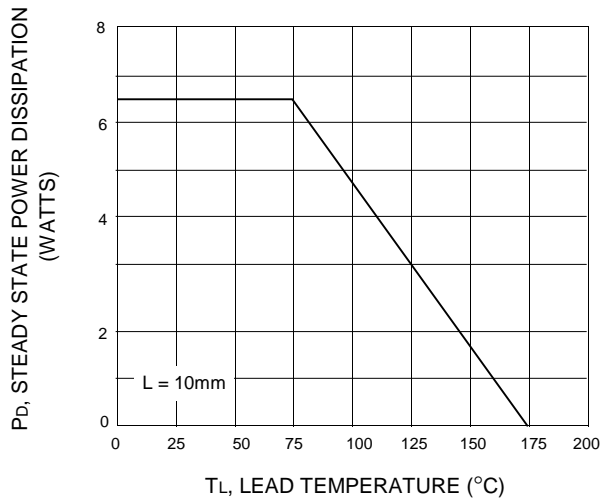
**FIG.1 - PULSE DERATING CURVE**



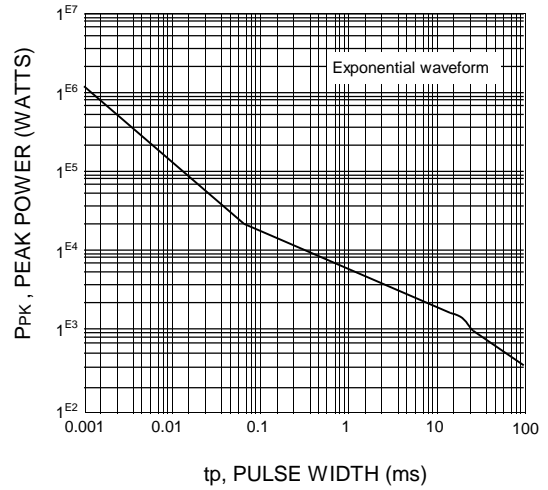
**FIG.2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



**FIG.3 - STEADY STATE POWER DERATING**



**FIG.4 - PEAK PULSE POWER RATING CURVE**



**FIG.5 - PULSE WAVEFORM**

