



## 3.DATA SHEET

### P6SMBJ SERIES

#### SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

VOLTAGE - 5.0 to 220 Volts 600 Watt Peak Power Pulse

SMB / DO-214AA

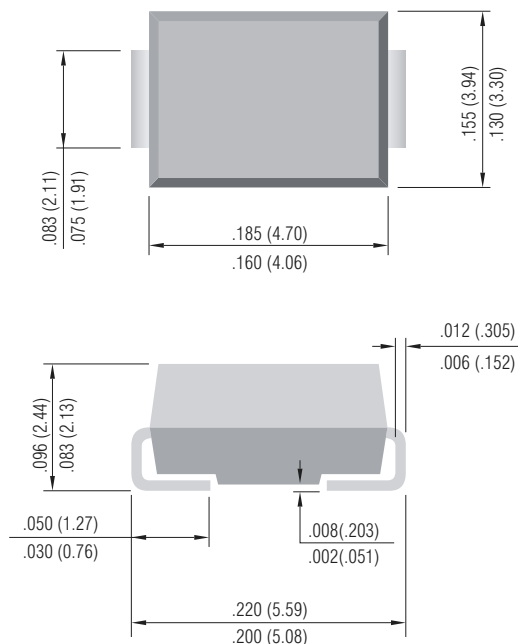
Unit: inch ( mm )

#### FEATURES

- For surface mounted applications in order to optimize board space.
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Low inductance
- Fast response time: typically less than 1.0 ps from 0 volts to BV min
- Typical IR less than 1μA above 10V
- High temperature soldering : 250°C/10 seconds at terminals.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O

#### MECHANICAL DATA

Case: JEDEC DO-214AA, Molded plastic over passivated junction  
 Terminals: Solder plated , solderable per MIL-STD-750, Method 2026  
 Polarity: Color band denotes positive end ( cathode) except Bidirectional.  
 Standard Packageing: 12mm tape per (EIA-481)  
 Weight: 0.003 ounces, 0.093 gram



#### MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.  
 For Capacitive load derate current by 20%.

| RATING                                                                                        | SYMBOL            | VALUE       | UNITS              |
|-----------------------------------------------------------------------------------------------|-------------------|-------------|--------------------|
| Peak Power Dissipation at $T_A=25^{\circ}\text{C}$ , $T_P=1\text{ms}$ (Note 1,2 ,Fig.1 )      | $P_{PPM}$         | Minimum 600 | Watts              |
| Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load (Note 2,3) | $I_{FSM}$         | 100.0       | Amps               |
| Peak Pulse Current Current on 10/1000μs waveform(Note 1, Fig.3 )                              | $I_{PPM}$         | See Table 1 | Amps               |
| Operating and Storage Temperature Range                                                       | $T_J$ , $T_{STG}$ | -55 to +150 | $^{\circ}\text{C}$ |

#### NOTES:

- 1.Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^{\circ}\text{C}$  per Fig. 2.
- 2.Mounted on 5.0mm<sup>2</sup> ( .013mm thick) land areas.
- 3.Measured on 8.3ms , single half sine-wave or equivalent square wave , duty cycle= 4 pulses per minutes maximum.



| Part Number                       | Marking Code |     | V <sub>RWM</sub> | V <sub>BR</sub> @ I <sub>T</sub> |       |                | I <sub>R</sub> @ V <sub>RWM</sub> |      | V <sub>C</sub> @ I <sub>PP</sub> |      | PACKAGE      |
|-----------------------------------|--------------|-----|------------------|----------------------------------|-------|----------------|-----------------------------------|------|----------------------------------|------|--------------|
|                                   |              |     |                  | Min.                             | Max.  | I <sub>T</sub> | UNI-                              | BI-  |                                  |      |              |
|                                   | UNI-         | BI- | V                | V                                | V     | mA             | uA                                | uA   | V                                | A    |              |
| 600W Transient Voltage Suppressor |              |     |                  |                                  |       |                |                                   |      |                                  |      |              |
| P6SMBJ5.0(C)                      | KD           | AD  | 5.0              | 6.40                             | 7.55  | 10             | 800                               | 1600 | 9.6                              | 62.5 | SMB/DO-214AA |
| P6SMBJ5.0(C)A                     | KE           | AE  | 5.0              | 6.40                             | 7.25  | 10             | 800                               | 1600 | 9.2                              | 65.2 | SMB/DO-214AA |
| P6SMBJ6.0(C)                      | KF           | AF  | 6.0              | 6.67                             | 8.45  | 10             | 800                               | 1600 | 11.4                             | 52.6 | SMB/DO-214AA |
| P6SMBJ6.0(C)A                     | KG           | AG  | 6.0              | 6.67                             | 7.67  | 10             | 800                               | 1600 | 10.3                             | 58.3 | SMB/DO-214AA |
| P6SMBJ6.5(C)                      | KH           | AH  | 6.5              | 7.22                             | 9.14  | 10             | 500                               | 1000 | 12.3                             | 48.7 | SMB/DO-214AA |
| P6SMBJ6.5(C)A                     | KK           | AK  | 6.5              | 7.22                             | 8.30  | 10             | 500                               | 1000 | 11.2                             | 53.6 | SMB/DO-214AA |
| P6SMBJ7.0(C)                      | KL           | AL  | 7.0              | 7.78                             | 9.86  | 10             | 200                               | 400  | 13.3                             | 45.1 | SMB/DO-214AA |
| P6SMBJ7.0(C)A                     | KM           | AM  | 7.0              | 7.78                             | 8.95  | 10             | 200                               | 400  | 12.0                             | 50.0 | SMB/DO-214AA |
| P6SMBJ7.5(C)                      | KN           | AN  | 7.5              | 8.33                             | 10.67 | 1.0            | 100                               | 200  | 14.3                             | 42.0 | SMB/DO-214AA |
| P6SMBJ7.5(C)A                     | KP           | AP  | 7.5              | 8.33                             | 9.58  | 1.0            | 100                               | 200  | 12.9                             | 46.5 | SMB/DO-214AA |
| P6SMBJ8.0(C)                      | KQ           | AQ  | 8.0              | 8.89                             | 11.30 | 1.0            | 50                                | 100  | 15.0                             | 40.0 | SMB/DO-214AA |
| P6SMBJ8.0(C)A                     | KR           | AR  | 8.0              | 8.89                             | 10.23 | 1.0            | 50                                | 100  | 13.6                             | 44.1 | SMB/DO-214AA |
| P6SMBJ8.5(C)                      | KS           | AS  | 8.5              | 9.44                             | 11.92 | 1.0            | 10                                | 20   | 15.9                             | 37.7 | SMB/DO-214AA |
| P6SMBJ8.5(C)A                     | KT           | AT  | 8.5              | 9.44                             | 10.82 | 1.0            | 10                                | 20   | 14.4                             | 41.7 | SMB/DO-214AA |
| P6SMBJ9.0(C)                      | KU           | AU  | 9.0              | 10.0                             | 12.6  | 1.0            | 5                                 | 10   | 16.9                             | 35.5 | SMB/DO-214AA |
| P6SMBJ9.0(C)A                     | KV           | AV  | 9.0              | 10.0                             | 11.5  | 1.0            | 5                                 | 10   | 15.4                             | 39.0 | SMB/DO-214AA |
| P6SMBJ10(C)                       | KW           | AW  | 10               | 11.1                             | 14.1  | 1.0            | 5                                 | 5    | 18.8                             | 31.9 | SMB/DO-214AA |
| P6SMBJ10(C)A                      | KX           | AX  | 10               | 11.1                             | 12.8  | 1.0            | 5                                 | 5    | 17.0                             | 35.3 | SMB/DO-214AA |
| P6SMBJ11(C)                       | KY           | AY  | 11               | 12.2                             | 15.4  | 1.0            | 5                                 | 5    | 20.1                             | 29.9 | SMB/DO-214AA |
| P6SMBJ11(C)A                      | KZ           | AZ  | 11               | 12.2                             | 14.0  | 1.0            | 5                                 | 5    | 18.2                             | 33.0 | SMB/DO-214AA |
| P6SMBJ12(C)                       | LD           | BD  | 12               | 13.3                             | 16.9  | 1.0            | 5                                 | 5    | 22.0                             | 27.3 | SMB/DO-214AA |
| P6SMBJ12(C)A                      | LE           | BE  | 12               | 13.3                             | 15.3  | 1.0            | 5                                 | 5    | 19.9                             | 30.2 | SMB/DO-214AA |
| P6SMBJ13(C)                       | LF           | BF  | 13               | 14.4                             | 18.2  | 1.0            | 5                                 | 5    | 23.8                             | 25.2 | SMB/DO-214AA |
| P6SMBJ13(C)A                      | LG           | BG  | 13               | 14.4                             | 16.5  | 1.0            | 5                                 | 5    | 21.5                             | 27.9 | SMB/DO-214AA |
| P6SMBJ14(C)                       | LH           | BH  | 14               | 15.6                             | 19.8  | 1.0            | 5                                 | 5    | 25.8                             | 23.3 | SMB/DO-214AA |
| P6SMBJ14(C)A                      | LK           | BK  | 14               | 15.6                             | 17.9  | 1.0            | 5                                 | 5    | 23.2                             | 25.8 | SMB/DO-214AA |
| P6SMBJ15(C)                       | LL           | BL  | 15               | 16.7                             | 21.1  | 1.0            | 5                                 | 5    | 26.9                             | 22.3 | SMB/DO-214AA |
| P6SMBJ15(C)A                      | LM           | BM  | 15               | 16.7                             | 19.2  | 1.0            | 5                                 | 5    | 24.4                             | 24.0 | SMB/DO-214AA |
| P6SMBJ16(C)                       | LN           | BN  | 16               | 17.8                             | 22.6  | 1.0            | 5                                 | 5    | 28.8                             | 20.8 | SMB/DO-214AA |
| P6SMBJ16(C)A                      | LP           | BP  | 16               | 17.8                             | 20.5  | 1.0            | 5                                 | 5    | 26.0                             | 23.1 | SMB/DO-214AA |
| P6SMBJ17(C)                       | LQ           | BQ  | 17               | 18.9                             | 23.9  | 1.0            | 5                                 | 5    | 30.5                             | 19.7 | SMB/DO-214AA |
| P6SMBJ17(C)A                      | LR           | BR  | 17               | 18.9                             | 21.7  | 1.0            | 5                                 | 5    | 27.6                             | 21.7 | SMB/DO-214AA |
| P6SMBJ18(C)                       | LS           | BS  | 18               | 20.0                             | 25.3  | 1.0            | 5                                 | 5    | 32.2                             | 18.6 | SMB/DO-214AA |
| P6SMBJ18(C)A                      | LT           | BT  | 18               | 20.0                             | 23.3  | 1.0            | 5                                 | 5    | 29.2                             | 20.5 | SMB/DO-214AA |
| P6SMBJ20(C)                       | LU           | BU  | 20               | 22.2                             | 28.1  | 1.0            | 5                                 | 5    | 35.8                             | 16.7 | SMB/DO-214AA |
| P6SMBJ20(C)A                      | LV           | BV  | 20               | 22.2                             | 25.5  | 1.0            | 5                                 | 5    | 32.4                             | 18.5 | SMB/DO-214AA |
| P6SMBJ22(C)                       | LW           | BW  | 22               | 24.4                             | 30.9  | 1.0            | 5                                 | 5    | 39.4                             | 15.2 | SMB/DO-214AA |
| P6SMBJ22(C)A                      | LX           | BX  | 22               | 24.4                             | 28.0  | 1.0            | 5                                 | 5    | 35.5                             | 16.9 | SMB/DO-214AA |
| P6SMBJ24(C)                       | LZ           | BZ  | 24               | 26.7                             | 33.8  | 1.0            | 5                                 | 5    | 43.0                             | 14.0 | SMB/DO-214AA |
| P6SMBJ24(C)A                      | LY           | BY  | 24               | 26.7                             | 30.7  | 1.0            | 5                                 | 5    | 38.9                             | 15.4 | SMB/DO-214AA |
| P6SMBJ26(C)                       | MD           | CD  | 26               | 28.9                             | 36.6  | 1.0            | 5                                 | 5    | 46.6                             | 12.4 | SMB/DO-214AA |
| P6SMBJ26(C)A                      | ME           | CE  | 26               | 28.9                             | 33.2  | 1.0            | 5                                 | 5    | 42.1                             | 14.2 | SMB/DO-214AA |
| P6SMBJ28(C)                       | MF           | CF  | 28               | 31.1                             | 39.4  | 1.0            | 5                                 | 5    | 50.0                             | 12.0 | SMB/DO-214AA |
| P6SMBJ28(C)A                      | MG           | CG  | 28               | 31.1                             | 35.8  | 1.0            | 5                                 | 5    | 45.4                             | 13.2 | SMB/DO-214AA |
| P6SMBJ30(C)                       | MH           | CH  | 30               | 33.3                             | 42.2  | 1.0            | 5                                 | 5    | 53.5                             | 11.2 | SMB/DO-214AA |
| P6SMBJ30(C)A                      | MK           | CK  | 30               | 33.3                             | 38.3  | 1.0            | 5                                 | 5    | 48.4                             | 12.4 | SMB/DO-214AA |
| P6SMBJ33(C)                       | ML           | CL  | 33               | 36.7                             | 46.5  | 1.0            | 5                                 | 5    | 59.0                             | 10.2 | SMB/DO-214AA |
| P6SMBJ33(C)A                      | MM           | CM  | 33               | 36.7                             | 42.2  | 1.0            | 5                                 | 5    | 53.3                             | 11.3 | SMB/DO-214AA |
| P6SMBJ36(C)                       | MN           | CN  | 36               | 40.0                             | 50.7  | 1.0            | 5                                 | 5    | 64.3                             | 9.3  | SMB/DO-214AA |
| P6SMBJ36(C)A                      | MP           | CP  | 36               | 40.0                             | 46.0  | 1.0            | 5                                 | 5    | 58.1                             | 10.3 | SMB/DO-214AA |
| P6SMBJ40(C)                       | MQ           | CQ  | 40               | 44.4                             | 56.3  | 1.0            | 5                                 | 5    | 71.4                             | 8.4  | SMB/DO-214AA |
| P6SMBJ40(C)A                      | MR           | CR  | 40               | 44.4                             | 51.1  | 1.0            | 5                                 | 5    | 64.5                             | 9.3  | SMB/DO-214AA |



| Part Number                       | Marking Code |     | V <sub>RWM</sub> | V <sub>BR</sub> @ I <sub>T</sub> |       |                | I <sub>R</sub> @ V <sub>RWM</sub> |     | V <sub>C</sub> @ I <sub>PP</sub> |     | PACKAGE      |
|-----------------------------------|--------------|-----|------------------|----------------------------------|-------|----------------|-----------------------------------|-----|----------------------------------|-----|--------------|
|                                   |              |     |                  | Min.                             | Max.  | I <sub>T</sub> | UNI-                              | BI- |                                  |     |              |
|                                   | UNI-         | BI- |                  | V                                | V     | V              | mA                                | uA  | uA                               | V   |              |
| 600W Transient Voltage Suppressor |              |     |                  |                                  |       |                |                                   |     |                                  |     |              |
| P6SMBJ43(C)                       | MS           | CS  | 43               | 47.8                             | 60.5  | 1.0            | 5                                 | 5   | 76.7                             | 7.8 | SMB/DO-214AA |
| P6SMBJ43(C)A                      | MT           | CT  | 43               | 47.8                             | 54.9  | 1.0            | 5                                 | 5   | 69.4                             | 8.6 | SMB/DO-214AA |
| P6SMBJ45(C)                       | MU           | CU  | 45               | 50.0                             | 63.3  | 1.0            | 5                                 | 5   | 80.3                             | 7.5 | SMB/DO-214AA |
| P6SMBJ45(C)A                      | MV           | CV  | 45               | 50.0                             | 57.5  | 1.0            | 5                                 | 5   | 72.7                             | 8.3 | SMB/DO-214AA |
| P6SMBJ48(C)                       | MW           | CW  | 48               | 53.3                             | 67.5  | 1.0            | 5                                 | 5   | 85.5                             | 7.0 | SMB/DO-214AA |
| P6SMBJ48(C)A                      | MX           | CX  | 48               | 53.3                             | 61.3  | 1.0            | 5                                 | 5   | 77.4                             | 7.7 | SMB/DO-214AA |
| P6SMBJ51(C)                       | MY           | CY  | 51               | 56.7                             | 71.8  | 1.0            | 5                                 | 5   | 91.1                             | 6.6 | SMB/DO-214AA |
| P6SMBJ51(C)A                      | MZ           | CZ  | 51               | 56.7                             | 65.2  | 1.0            | 5                                 | 5   | 82.4                             | 7.3 | SMB/DO-214AA |
| P6SMBJ54(C)                       | ND           | DD  | 54               | 60.0                             | 76.0  | 1.0            | 5                                 | 5   | 96.3                             | 6.2 | SMB/DO-214AA |
| P6SMBJ54(C)A                      | NE           | DE  | 54               | 60.0                             | 69.0  | 1.0            | 5                                 | 5   | 87.1                             | 6.9 | SMB/DO-214AA |
| P6SMBJ58(C)                       | NF           | DF  | 58               | 64.4                             | 81.6  | 1.0            | 5                                 | 5   | 103                              | 5.8 | SMB/DO-214AA |
| P6SMBJ58(C)A                      | NG           | DG  | 58               | 64.4                             | 74.1  | 1.0            | 5                                 | 5   | 93.6                             | 6.4 | SMB/DO-214AA |
| P6SMBJ60(C)                       | NH           | DH  | 60               | 66.7                             | 84.5  | 1.0            | 5                                 | 5   | 107                              | 5.6 | SMB/DO-214AA |
| P6SMBJ60(C)A                      | NK           | DK  | 60               | 66.7                             | 76.7  | 1.0            | 5                                 | 5   | 96.8                             | 6.2 | SMB/DO-214AA |
| P6SMBJ64(C)                       | NL           | DL  | 64               | 71.1                             | 90.1  | 1.0            | 5                                 | 5   | 114                              | 5.3 | SMB/DO-214AA |
| P6SMBJ64(C)A                      | NM           | DM  | 64               | 71.1                             | 81.8  | 1.0            | 5                                 | 5   | 103                              | 5.8 | SMB/DO-214AA |
| P6SMBJ70(C)                       | NN           | DN  | 70               | 77.8                             | 98.6  | 1.0            | 5                                 | 5   | 125                              | 4.8 | SMB/DO-214AA |
| P6SMBJ70(C)A                      | NP           | DP  | 70               | 77.8                             | 89.5  | 1.0            | 5                                 | 5   | 113                              | 5.3 | SMB/DO-214AA |
| P6SMBJ75(C)                       | NQ           | DQ  | 75               | 83.3                             | 105.7 | 1.0            | 5                                 | 5   | 134                              | 4.5 | SMB/DO-214AA |
| P6SMBJ75(C)A                      | NR           | DR  | 75               | 83.3                             | 95.8  | 1.0            | 5                                 | 5   | 121                              | 4.9 | SMB/DO-214AA |
| P6SMBJ78(C)                       | NS           | DS  | 78               | 86.7                             | 109.8 | 1.0            | 5                                 | 5   | 139                              | 4.3 | SMB/DO-214AA |
| P6SMBJ78(C)A                      | NT           | DT  | 78               | 86.7                             | 99.7  | 1.0            | 5                                 | 5   | 126                              | 4.7 | SMB/DO-214AA |
| P6SMBJ85(C)                       | NU           | DU  | 85               | 94.4                             | 119.2 | 1.0            | 5                                 | 5   | 151                              | 3.9 | SMB/DO-214AA |
| P6SMBJ85(C)A                      | NV           | DV  | 85               | 94.4                             | 108.2 | 1.0            | 5                                 | 5   | 137                              | 4.4 | SMB/DO-214AA |
| P6SMBJ90(C)                       | NW           | DW  | 90               | 100                              | 126.5 | 1.0            | 5                                 | 5   | 160                              | 3.8 | SMB/DO-214AA |
| P6SMBJ90(C)A                      | NX           | DX  | 90               | 100                              | 115.5 | 1.0            | 5                                 | 5   | 146                              | 4.1 | SMB/DO-214AA |
| P6SMBJ100(C)                      | NZ           | DZ  | 100              | 111                              | 141.0 | 1.0            | 5                                 | 5   | 179                              | 3.4 | SMB/DO-214AA |
| P6SMBJ100(C)A                     | NY           | DY  | 100              | 111                              | 128.0 | 1.0            | 5                                 | 5   | 162                              | 3.7 | SMB/DO-214AA |
| P6SMBJ110(C)                      | PD           | ED  | 110              | 122                              | 154.5 | 1.0            | 5                                 | 5   | 196                              | 3.0 | SMB/DO-214AA |
| P6SMBJ110(C)A                     | PE           | EE  | 110              | 122                              | 140.5 | 1.0            | 5                                 | 5   | 177                              | 3.4 | SMB/DO-214AA |
| P6SMBJ120(C)                      | PF           | EF  | 120              | 133                              | 169.0 | 1.0            | 5                                 | 5   | 214                              | 2.8 | SMB/DO-214AA |
| P6SMBJ120(C)A                     | PG           | EG  | 120              | 133                              | 153.0 | 1.0            | 5                                 | 5   | 193                              | 3.1 | SMB/DO-214AA |
| P6SMBJ130(C)                      | PH           | EH  | 130              | 144                              | 182.5 | 1.0            | 5                                 | 5   | 231                              | 2.6 | SMB/DO-214AA |
| P6SMBJ130(C)A                     | PK           | EK  | 130              | 144                              | 165.5 | 1.0            | 5                                 | 5   | 209                              | 2.9 | SMB/DO-214AA |
| P6SMBJ150(C)                      | PL           | EL  | 150              | 167                              | 211.5 | 1.0            | 5                                 | 5   | 268                              | 2.2 | SMB/DO-214AA |
| P6SMBJ150(C)A                     | PM           | EM  | 150              | 167                              | 192.5 | 1.0            | 5                                 | 5   | 243                              | 2.5 | SMB/DO-214AA |
| P6SMBJ160(C)                      | PN           | EN  | 160              | 178                              | 226.0 | 1.0            | 5                                 | 5   | 287                              | 2.1 | SMB/DO-214AA |
| P6SMBJ160(C)A                     | PP           | EP  | 160              | 178                              | 205.0 | 1.0            | 5                                 | 5   | 259                              | 2.3 | SMB/DO-214AA |
| P6SMBJ170(C)                      | PQ           | EQ  | 170              | 189                              | 239.5 | 1.0            | 5                                 | 5   | 304                              | 2.0 | SMB/DO-214AA |
| P6SMBJ170(C)A                     | PR           | ER  | 170              | 189                              | 217.5 | 1.0            | 5                                 | 5   | 275                              | 2.2 | SMB/DO-214AA |
| P6SMBJ180(C)                      | PS           | ES  | 180              | 198                              | 253.8 | 1.0            | 5                                 | 5   | 322                              | 1.9 | SMB/DO-214AA |
| P6SMBJ180(C)A                     | PT           | ET  | 180              | 198                              | 230.4 | 1.0            | 5                                 | 5   | 292                              | 2.1 | SMB/DO-214AA |
| P6SMBJ190(C)                      | PU           | EU  | 190              | 209                              | 267.9 | 1.0            | 5                                 | 5   | 340                              | 1.8 | SMB/DO-214AA |
| P6SMBJ190(C)A                     | PV           | EV  | 190              | 209                              | 243.2 | 1.0            | 5                                 | 5   | 308                              | 2.0 | SMB/DO-214AA |
| P6SMBJ200(C)                      | PW           | EW  | 200              | 220                              | 282.0 | 1.0            | 5                                 | 5   | 358                              | 1.7 | SMB/DO-214AA |
| P6SMBJ200(C)A                     | PX           | EX  | 200              | 220                              | 256.0 | 1.0            | 5                                 | 5   | 324                              | 1.9 | SMB/DO-214AA |
| P6SMBJ210(C)                      | PY           | EY  | 210              | 231                              | 296.1 | 1.0            | 5                                 | 5   | 376                              | 1.6 | SMB/DO-214AA |
| P6SMBJ210(C)A                     | PZ           | EZ  | 210              | 231                              | 268.8 | 1.0            | 5                                 | 5   | 340                              | 1.8 | SMB/DO-214AA |
| P6SMBJ220(C)                      | QD           | FD  | 220              | 242                              | 310.2 | 1.0            | 5                                 | 5   | 394                              | 1.5 | SMB/DO-214AA |
| P6SMBJ220(C)A                     | QE           | FE  | 220              | 242                              | 281.6 | 1.0            | 5                                 | 5   | 356                              | 1.7 | SMB/DO-214AA |

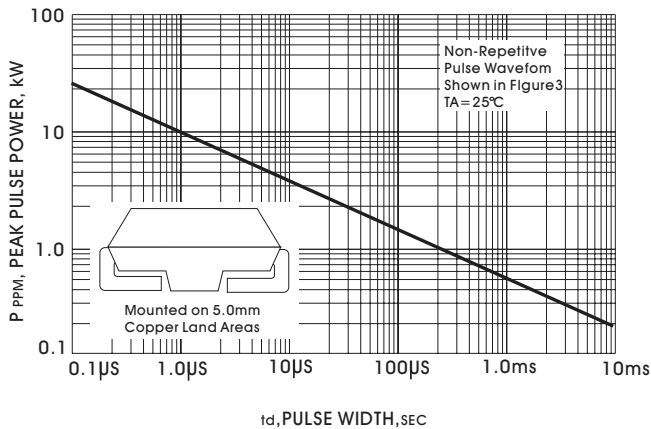


FIGURE 1-PEAK PULSE POWER RATING CURVE

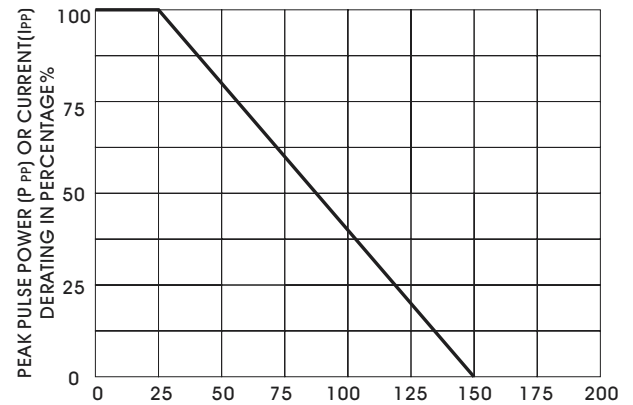


FIGURE 2 DERATING CURVE

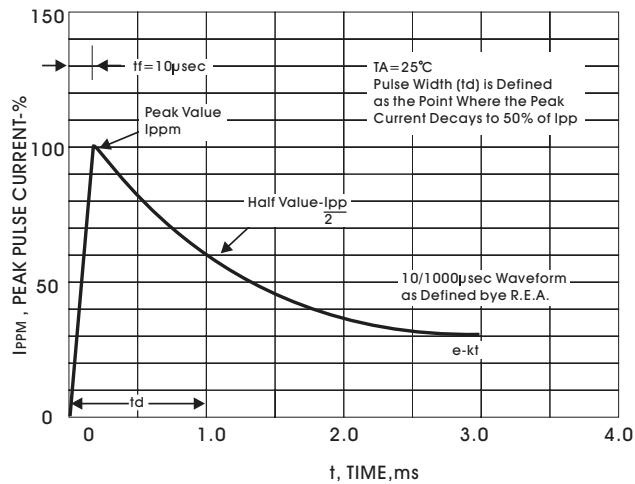


FIGURE 3-PULSE WAVEFORM

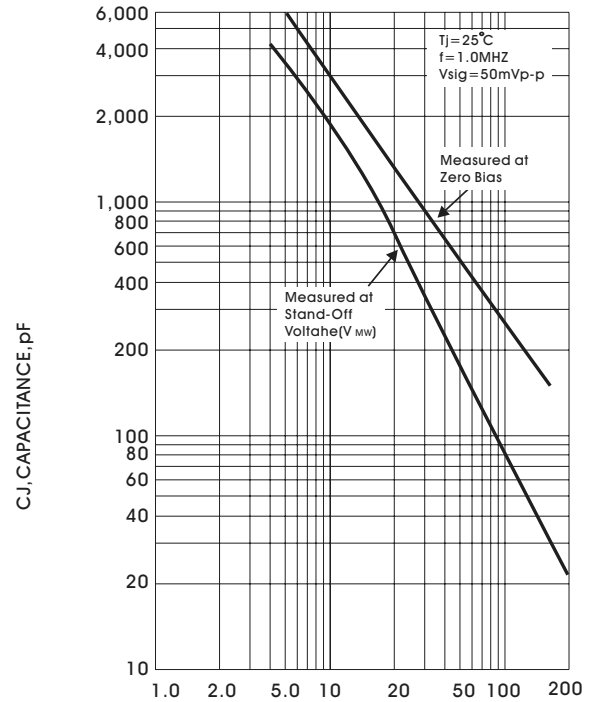


FIGURE 4 TYPICAL CAPACITANCE

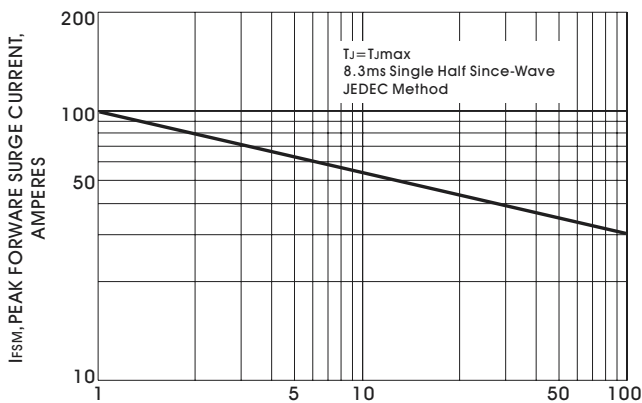


FIG. 5-MAXIMUM NON-REPETITIVE PEAK FOWARD SURGE CURRENT UNIDIRECTIONAL