



## P6SMBJ8.5AS ~ P6SMBJ220CAS Series

### Transient Voltage Suppressor

**Recongnized File # E210467 (P6SMBJ8.5AS ~ P6SMBJ170CAS Series)**

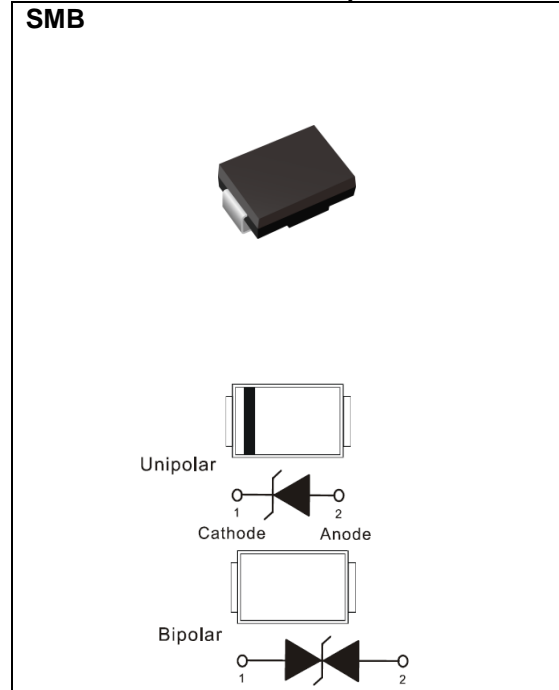
**Voltage** 8.5~220 V **Power** 600 W

#### Features

- Fast response time
- Low incremental surge resistance
- Ultra thin profile package for space constrained utilization.
- High temperature soldering : 260°C/10 seconds at terminals
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

#### Mechanical Data

- Case : Molded plastic, SMB
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0032 ounces, 0.092 grams



#### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

| PARAMETER   | SYMBOL                  | LIMIT       | UNITS |
|---|-------------------------|-------------|-------|
| Peak Pulse Power Dissipation(tp = 10 / 1000 us)                   | P <sub>PP</sub> (1) (2) | 600         | W     |
| Peak Pulse Current on tp = 10 / 1000 us waveform(Fig.2)           | I <sub>PPM</sub> (1)    | See table 1 | A     |
| Power Dissipation on Infinite Heat Sink at T <sub>L</sub> = 50 °C | P <sub>D</sub>          | 5           | W     |
| ESD IEC61000-4-2(Air)   | V <sub>ESD</sub>        | ±30         | kV    |
| ESD IEC61000-4-2(Contact)   |                         | ±30         |       |
| Typical Thermal Resistance Junction to Ambient                    | R <sub>θJA</sub> (3)    | 150         | °C/W  |
| Operating Junction Temperature Range                              | T <sub>J</sub>          | -55~150     | °C    |
| Storage Temperature Range   | T <sub>STG</sub>        | -55~150     | °C    |



## P6SMBJ8.5AS ~ P6SMBJ220CAS Series

### Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

| Part Number                       |              | V <sub>RWM</sub> | V <sub>BR</sub> |      |                | I <sub>R</sub>     |    | V <sub>C@IPP</sub> |      | Marking Code |        |
|-----------------------------------|--------------|------------------|-----------------|------|----------------|--------------------|----|--------------------|------|--------------|--------|
|                                   |              |                  | Min.            | Max. | I <sub>T</sub> | @ V <sub>RWM</sub> |    | V                  | A    | UNI          | BI     |
| UNI                               | BI           | V                | V               | V    | mA             | UNI                | BI | V                  | A    | UNI          | BI     |
| 600W Transient Voltage Suppressor |              |                  |                 |      |                |                    |    |                    |      |              |        |
| P6SMBJ8.5AS                       | P6SMBJ8.5CAS | 8.5              | 9.44            | 10.4 | 1              | 10                 | 20 | 14.4               | 41.7 | B8V5AS       | 8V5CAS |
| P6SMBJ9.0AS                       | P6SMBJ9.0CAS | 9                | 10              | 11.1 | 1              | 5                  | 5  | 15.4               | 39   | B9V0AS       | B9VCAS |
| P6SMBJ10AS                        | P6SMBJ10CAS  | 10               | 11.1            | 12.3 | 1              | 5                  | 5  | 17                 | 35.3 | B10AS        | B10CAS |
| P6SMBJ11AS                        | P6SMBJ11CAS  | 11               | 12.2            | 13.5 | 1              | 5                  | 5  | 18.2               | 33   | B11AS        | B11CAS |
| P6SMBJ12AS                        | P6SMBJ12CAS  | 12               | 13.3            | 14.7 | 1              | 1                  | 1  | 19.9               | 30.2 | B12AS        | B12CAS |
| P6SMBJ13AS                        | P6SMBJ13CAS  | 13               | 14.4            | 15.9 | 1              | 1                  | 1  | 21.5               | 28   | B13AS        | B13CAS |
| P6SMBJ14AS                        | P6SMBJ14CAS  | 14               | 15.6            | 17.2 | 1              | 1                  | 1  | 23.2               | 25.8 | B14AS        | B14CAS |
| P6SMBJ15AS                        | P6SMBJ15CAS  | 15               | 16.7            | 18.5 | 1              | 1                  | 1  | 24.4               | 24.6 | B15AS        | B15CAS |
| P6SMBJ16AS                        | P6SMBJ16CAS  | 16               | 17.8            | 19.7 | 1              | 1                  | 1  | 26                 | 23.1 | B16AS        | B16CAS |
| P6SMBJ17AS                        | P6SMBJ17CAS  | 17               | 18.9            | 20.9 | 1              | 1                  | 1  | 27.6               | 21.8 | B17AS        | B17CAS |
| P6SMBJ18AS                        | P6SMBJ18CAS  | 18               | 20              | 22.1 | 1              | 1                  | 1  | 29.2               | 20.6 | B18AS        | B18CAS |
| P6SMBJ20AS                        | P6SMBJ20CAS  | 20               | 22.2            | 24.5 | 1              | 1                  | 1  | 32.4               | 18.6 | B20AS        | B20CAS |
| P6SMBJ22AS                        | P6SMBJ22CAS  | 22               | 24.4            | 26.9 | 1              | 1                  | 1  | 35.5               | 16.9 | B22AS        | B22CAS |
| P6SMBJ24AS                        | P6SMBJ24CAS  | 24               | 26.7            | 29.5 | 1              | 1                  | 1  | 38.9               | 15.5 | B24AS        | B24CAS |
| P6SMBJ26AS                        | P6SMBJ26CAS  | 26               | 28.9            | 31.9 | 1              | 1                  | 1  | 42.1               | 14.3 | B26AS        | B26CAS |
| P6SMBJ28AS                        | P6SMBJ28CAS  | 28               | 31.1            | 34.4 | 1              | 1                  | 1  | 45.4               | 13.3 | B28AS        | B28CAS |
| P6SMBJ30AS                        | P6SMBJ30CAS  | 30               | 33.3            | 36.8 | 1              | 1                  | 1  | 48.4               | 12.4 | B30AS        | B30CAS |
| P6SMBJ33AS                        | P6SMBJ33CAS  | 33               | 36.7            | 40.6 | 1              | 1                  | 1  | 53.3               | 11.3 | B33AS        | B33CAS |
| P6SMBJ36AS                        | P6SMBJ36CAS  | 36               | 40              | 44.2 | 1              | 1                  | 1  | 58.1               | 10.4 | B36AS        | B36CAS |
| P6SMBJ40AS                        | P6SMBJ40CAS  | 40               | 44.4            | 49.1 | 1              | 1                  | 1  | 64.5               | 9.3  | B40AS        | B40CAS |
| P6SMBJ43AS                        | P6SMBJ43CAS  | 43               | 47.8            | 52.8 | 1              | 1                  | 1  | 69.4               | 8.7  | B43AS        | B43CAS |
| P6SMBJ45AS                        | P6SMBJ45CAS  | 45               | 50              | 55.3 | 1              | 1                  | 1  | 72.7               | 8.7  | B45AS        | B45CAS |
| P6SMBJ48AS                        | P6SMBJ48CAS  | 48               | 53.3            | 58.9 | 1              | 1                  | 1  | 77.4               | 8.3  | B48AS        | B48CAS |
| P6SMBJ51AS                        | P6SMBJ51CAS  | 51               | 56.7            | 62.7 | 1              | 1                  | 1  | 82.4               | 7.3  | B51AS        | B51CAS |
| P6SMBJ54AS                        | P6SMBJ54CAS  | 54               | 60              | 66.3 | 1              | 1                  | 1  | 87.1               | 6.9  | B54AS        | B54CAS |
| P6SMBJ58AS                        | P6SMBJ58CAS  | 58               | 64.4            | 71.2 | 1              | 1                  | 1  | 93.6               | 6.5  | B58AS        | B58CAS |
| P6SMBJ60AS                        | P6SMBJ60CAS  | 60               | 66.7            | 73.7 | 1              | 1                  | 1  | 96.8               | 6.2  | B60AS        | B60CAS |
| P6SMBJ64AS                        | P6SMBJ64CAS  | 64               | 71.1            | 78.6 | 1              | 1                  | 1  | 103                | 5.9  | B64AS        | B64CAS |
| P6SMBJ70AS                        | P6SMBJ70CAS  | 70               | 77.8            | 86   | 1              | 1                  | 1  | 113                | 5.3  | B70AS        | B70CAS |
| P6SMBJ75AS                        | P6SMBJ75CAS  | 75               | 83.3            | 92.1 | 1              | 1                  | 1  | 121                | 5    | B75AS        | B75CAS |



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### Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

| Part Number                       |              | V <sub>RWM</sub> | V <sub>BR</sub> |       |                | I <sub>R</sub>     |    | V <sub>C@IPP</sub> |     | Marking Code |        |
|-----------------------------------|--------------|------------------|-----------------|-------|----------------|--------------------|----|--------------------|-----|--------------|--------|
|                                   |              |                  | Min.            | Max.  | I <sub>T</sub> | @ V <sub>RWM</sub> | uA |                    |     |              |        |
| UNI                               | BI           | V                | V               | V     | mA             | UNI                | BI | V                  | A   | UNI          | BI     |
| 600W Transient Voltage Suppressor |              |                  |                 |       |                |                    |    |                    |     |              |        |
| P6SMBJ78AS                        | P6SMBJ78CAS  | 78               | 86.7            | 95.8  | 1              | 1                  | 1  | 126                | 4.8 | B78AS        | B78CAS |
| P6SMBJ85AS                        | P6SMBJ85CAS  | 85               | 94.4            | 104   | 1              | 1                  | 1  | 137                | 4.4 | B85AS        | B85CAS |
| P6SMBJ90AS                        | P6SMBJ90CAS  | 90               | 100             | 111   | 1              | 1                  | 1  | 147                | 4.1 | B90AS        | B90CAS |
| P6SMBJ100AS                       | P6SMBJ100CAS | 100              | 111             | 123   | 1              | 1                  | 1  | 162                | 3.7 | B100AS       | 100CAS |
| P6SMBJ110AS                       | P6SMBJ110CAS | 110              | 122             | 135   | 1              | 1                  | 1  | 177                | 3.4 | B110AS       | 110CAS |
| P6SMBJ120AS                       | P6SMBJ120CAS | 120              | 133             | 147   | 1              | 1                  | 1  | 193                | 3.1 | B120AS       | 120CAS |
| P6SMBJ130AS                       | P6SMBJ130CAS | 130              | 144             | 159   | 1              | 1                  | 1  | 209                | 2.9 | B130AS       | 130CAS |
| P6SMBJ150AS                       | P6SMBJ150CAS | 150              | 167             | 185   | 1              | 1                  | 1  | 243                | 2.5 | B150AS       | 150CAS |
| P6SMBJ160AS                       | P6SMBJ160CAS | 160              | 178             | 197   | 1              | 1                  | 1  | 259                | 2.3 | B160AS       | 160CAS |
| P6SMBJ170AS                       | P6SMBJ170CAS | 170              | 189             | 209   | 1              | 1                  | 1  | 275                | 2.2 | B170AS       | 170CAS |
| P6SMBJ180AS                       | P6SMBJ180CAS | 180              | 198             | 222   | 1              | 1                  | 1  | 292                | 2.1 | B180AS       | 180CAS |
| P6SMBJ190AS                       | P6SMBJ190CAS | 190              | 209             | 243.2 | 1              | 1                  | 1  | 308                | 2   | B190AS       | 190CAS |
| P6SMBJ200AS                       | P6SMBJ200CAS | 200              | 220             | 247   | 1              | 1                  | 1  | 324                | 1.9 | B200AS       | 200CAS |
| P6SMBJ210AS                       | P6SMBJ210CAS | 210              | 231             | 268.8 | 1              | 1                  | 1  | 340                | 1.8 | B210AS       | 210CAS |
| P6SMBJ220AS                       | P6SMBJ220CAS | 220              | 242             | 272   | 1              | 1                  | 1  | 356                | 1.7 | B220AS       | 220CAS |

Notes :

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2
2. Mounted on 100cm<sup>2</sup> copper pads to each terminal
3. Mounted on a FR4 PCB, single-sided copper, standard footprint



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## TYPICAL CHARACTERISTIC CURVES

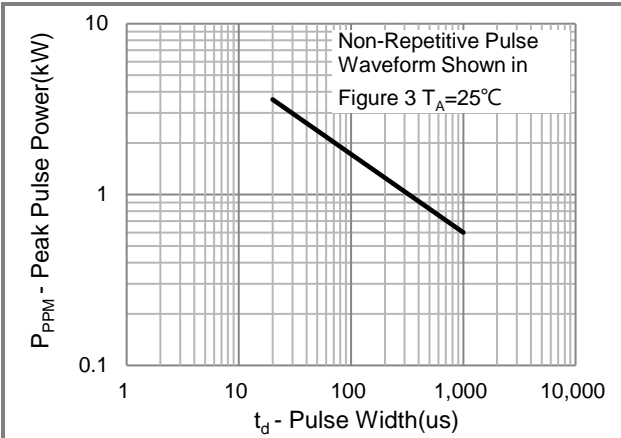


Fig.1 Pulse Power Rating Curve

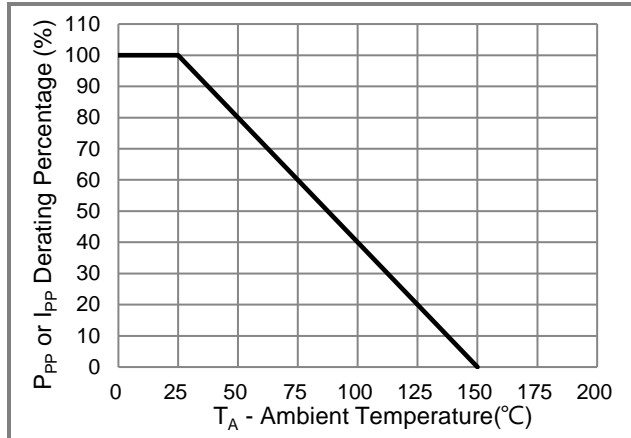


Fig.2 Derating Curve

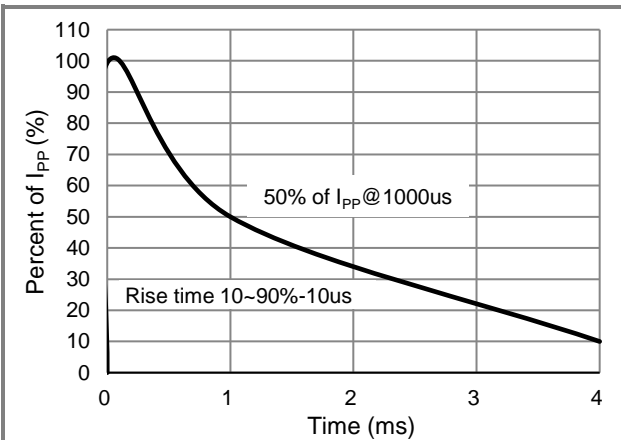


Fig.3 10/1000us Pulse Waveform

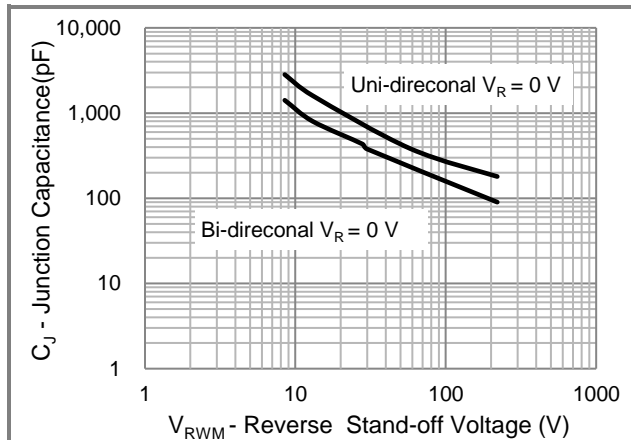


Fig.4 Typical Capacitance

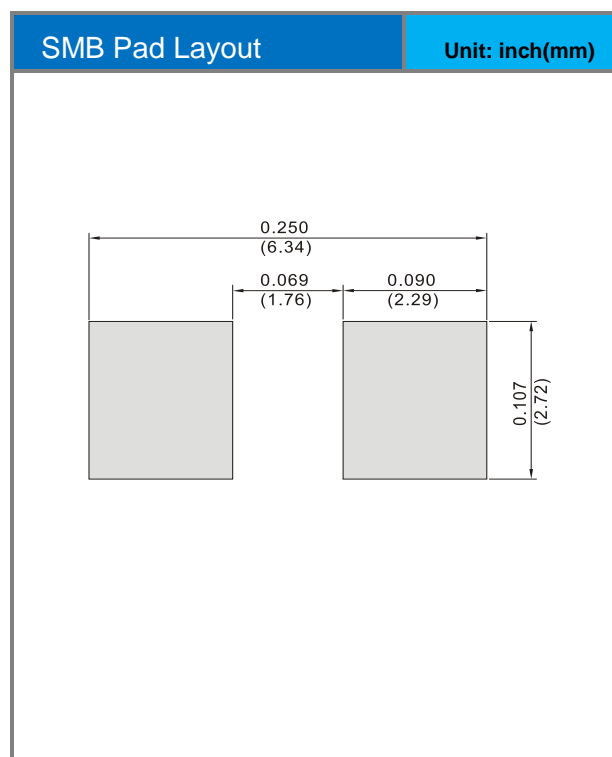
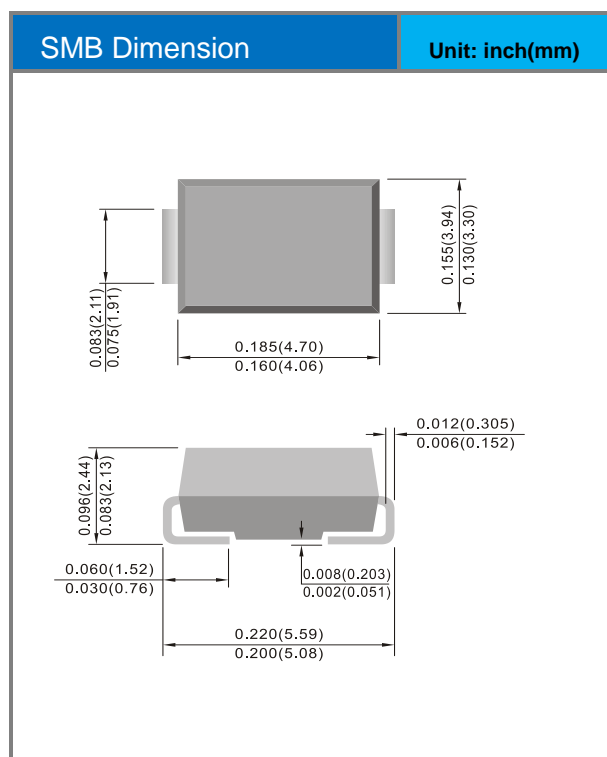


## P6SMBJ8.5AS ~ P6SMBJ220CAS Series

Part No. Packing Code Version

| Part No. Packing Code | Package Type | Packing Type       | Marking   | Version                        |
|-----------------------|--------------|--------------------|-----------|--------------------------------|
| P6SMBJxxxxAS_R1_00001 | SMB          | 0.8K pcs / 7" reel | See Table | Halogen free<br>RoHS compliant |

### Packaging Information & Mounting Pad Layout





## **P6SMBJ8.5AS ~ P6SMBJ220CAS Series**

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