

## P6SMB10AS ~ P6SMB250CAS Series

### Transient Voltage Suppressor

|                |                 |              |              |
|----------------|-----------------|--------------|--------------|
| <b>Voltage</b> | <b>10~250 V</b> | <b>Power</b> | <b>600 W</b> |
|----------------|-----------------|--------------|--------------|

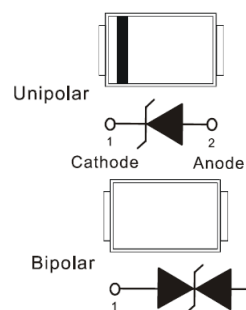
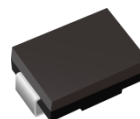
#### Features

- 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: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0032 ounces, 0.092 grams

#### SMB



### 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 <sup>(Fig.2)</sup> | 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    |

## P6SMB10AS ~ P6SMB250CAS 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> | uA |                    |      |              |      |
| UNI                               | BI          | V                | V               | V    | mA             | UNI               | BI | V                  | A    | UNI          | BI   |
| 600W Transient Voltage Suppressor |             |                  |                 |      |                |                   |    |                    |      |              |      |
| P6SMB10AS                         | P6SMB10CAS  | 8.55             | 9.5             | 10.5 | 1              | 10                | 20 | 14.5               | 41   | MBAA         | MBBN |
| P6SMB11AS                         | P6SMB11CAS  | 9.4              | 10.5            | 11.6 | 1              | 5                 | 10 | 15.6               | 38   | MBAB         | MBBP |
| P6SMB12AS                         | P6SMB12CAS  | 10.2             | 11.4            | 12.6 | 1              | 5                 | 5  | 16.7               | 36   | MBAC         | MBBR |
| P6SMB13AS                         | P6SMB13CAS  | 11.1             | 12.4            | 13.7 | 1              | 1                 | 1  | 18.2               | 33   | MBAD         | MBBS |
| P6SMB15AS                         | P6SMB15CAS  | 12.8             | 14.3            | 15.8 | 1              | 1                 | 1  | 21.2               | 28   | MBAE         | MBBT |
| P6SMB16AS                         | P6SMB16CAS  | 13.6             | 15.2            | 16.8 | 1              | 1                 | 1  | 22.5               | 27   | MBAF         | MBBU |
| P6SMB18AS                         | P6SMB18CAS  | 15.3             | 17.1            | 18.9 | 1              | 1                 | 1  | 25.2               | 24   | MBAG         | MBBV |
| P6SMB20AS                         | P6SMB20CAS  | 17.1             | 19              | 21   | 1              | 1                 | 1  | 27.7               | 22   | MBAH         | MBBW |
| P6SMB22AS                         | P6SMB22CAS  | 18.8             | 20.9            | 23.1 | 1              | 1                 | 1  | 30.6               | 20   | MBAJ         | MBBX |
| P6SMB24AS                         | P6SMB24CAS  | 20.5             | 22.8            | 25.2 | 1              | 1                 | 1  | 33.2               | 18   | MBAK         | MBBY |
| P6SMB27AS                         | P6SMB27CAS  | 23.1             | 25.7            | 28.4 | 1              | 1                 | 1  | 37.5               | 16   | MBAL         | MBBZ |
| P6SMB30AS                         | P6SMB30CAS  | 25.6             | 28.5            | 31.5 | 1              | 1                 | 1  | 41.4               | 14.4 | MBAM         | MBCA |
| P6SMB33AS                         | P6SMB33CAS  | 28.2             | 31.4            | 34.7 | 1              | 1                 | 1  | 45.7               | 13.2 | MBAN         | MBCB |
| P6SMB36AS                         | P6SMB36CAS  | 30.8             | 34.2            | 37.8 | 1              | 1                 | 1  | 49.9               | 12   | MBAP         | MBCD |
| P6SMB39AS                         | P6SMB39CAS  | 33.3             | 37.1            | 41   | 1              | 1                 | 1  | 53.9               | 11.2 | MBAR         | MBCD |
| P6SMB43AS                         | P6SMB43CAS  | 36.8             | 40.9            | 45.2 | 1              | 1                 | 1  | 59.3               | 10.1 | MBAS         | MBCD |
| P6SMB47AS                         | P6SMB47CAS  | 40.2             | 44.7            | 49.4 | 1              | 1                 | 1  | 64.8               | 9.3  | MBAT         | MBCF |
| P6SMB51AS                         | P6SMB51CAS  | 43.6             | 48.5            | 53.6 | 1              | 1                 | 1  | 70.1               | 8.6  | MBAU         | MBCG |
| P6SMB56AS                         | P6SMB56CAS  | 47.8             | 53.2            | 58.8 | 1              | 1                 | 1  | 77                 | 7.8  | MBAV         | MBCD |
| P6SMB62AS                         | P6SMB62CAS  | 53               | 58.9            | 65.1 | 1              | 1                 | 1  | 85                 | 7.1  | MBAW         | MBCJ |
| P6SMB68AS                         | P6SMB68CAS  | 58.1             | 64.6            | 71.4 | 1              | 1                 | 1  | 92                 | 6.5  | MBAX         | MBCD |
| P6SMB75AS                         | P6SMB75CAS  | 64.1             | 71.3            | 78.8 | 1              | 1                 | 1  | 103                | 5.8  | MBAY         | MBCD |
| P6SMB82AS                         | P6SMB82CAS  | 70.1             | 77.9            | 86.1 | 1              | 1                 | 1  | 113                | 5.3  | MBAZ         | MBCD |
| P6SMB91AS                         | P6SMB91CAS  | 77.8             | 86.5            | 95.5 | 1              | 1                 | 1  | 125                | 4.8  | MBBA         | MBCD |
| P6SMB100AS                        | P6SMB100CAS | 85.5             | 95              | 105  | 1              | 1                 | 1  | 137                | 4.4  | MBBB         | MBCD |
| P6SMB110AS                        | P6SMB110CAS | 94               | 105             | 116  | 1              | 1                 | 1  | 152                | 4    | MBBC         | MBCD |
| P6SMB120AS                        | P6SMB120CAS | 102              | 114             | 126  | 1              | 1                 | 1  | 165                | 3.6  | MBBD         | MBCD |
| P6SMB130AS                        | P6SMB130CAS | 111              | 124             | 137  | 1              | 1                 | 1  | 179                | 3.3  | MBBE         | MBCD |
| P6SMB150AS                        | P6SMB150CAS | 128              | 143             | 158  | 1              | 1                 | 1  | 207                | 2.9  | MBBF         | MBCD |
| P6SMB160AS                        | P6SMB160CAS | 136              | 152             | 168  | 1              | 1                 | 1  | 219                | 2.7  | MBBG         | MBCD |

## P6SMB10AS ~ P6SMB250CAS Series

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Part Number                       |             | V <sub>RWM</sub> | V <sub>BR</sub> |      |                | I <sub>R</sub>    |    | V <sub>C@I<sub>PP</sub></sub> |     | Marking Code |      |
|-----------------------------------|-------------|------------------|-----------------|------|----------------|-------------------|----|-------------------------------|-----|--------------|------|
|                                   |             |                  | Min.            | Max. | I <sub>T</sub> | @V <sub>RWM</sub> |    |                               |     |              |      |
| UNI                               | BI          | V                | V               | V    | mA             | UNI               | BI | V                             | A   | UNI          | BI   |
| 600W Transient Voltage Suppressor |             |                  |                 |      |                |                   |    |                               |     |              |      |
| P6SMB170AS                        | P6SMB170CAS | 145              | 162             | 179  | 1              | 1                 | 1  | 234                           | 2.6 | MBBH         | MBCW |
| P6SMB180AS                        | P6SMB180CAS | 154              | 171             | 189  | 1              | 1                 | 1  | 246                           | 2.4 | MBBJ         | MBCX |
| P6SMB200AS                        | P6SMB200CAS | 171              | 190             | 210  | 1              | 1                 | 1  | 274                           | 2.2 | MBBK         | MBCY |
| P6SMB220AS                        | P6SMB220CAS | 185              | 209             | 231  | 1              | 1                 | 1  | 328                           | 1.9 | MBBL         | MBCZ |
| P6SMB250AS                        | P6SMB250CAS | 214              | 237             | 263  | 1              | 1                 | 1  | 344                           | 1.8 | MBBM         | MBDA |

Notes :

1. Non-repetitive current pulse, per Fig.3 and derated above  $T_A=25^\circ\text{C}$  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

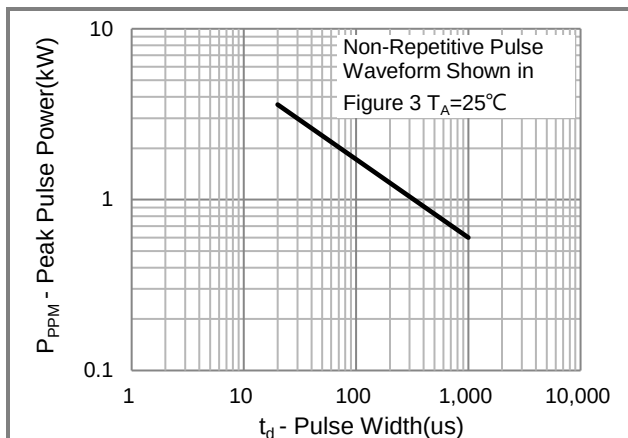


Fig.1 Pulse Power Rating Curve

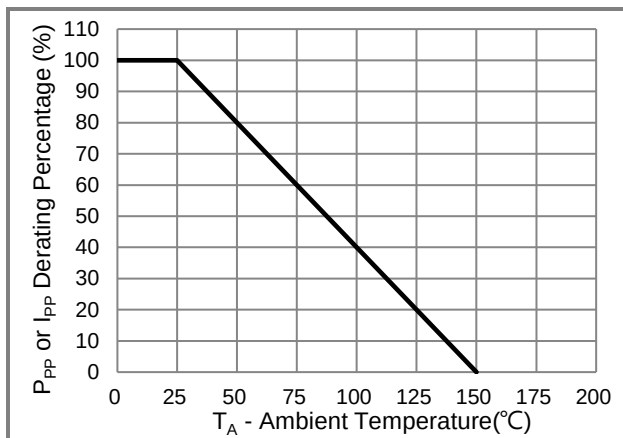


Fig.2 Derating Curve

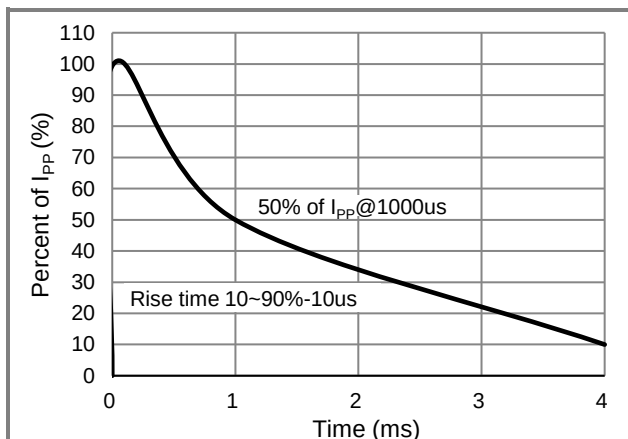


Fig.3 10/1000us Pulse Waveform

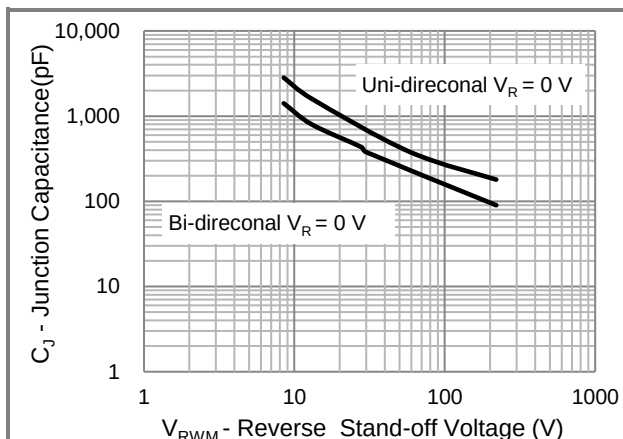


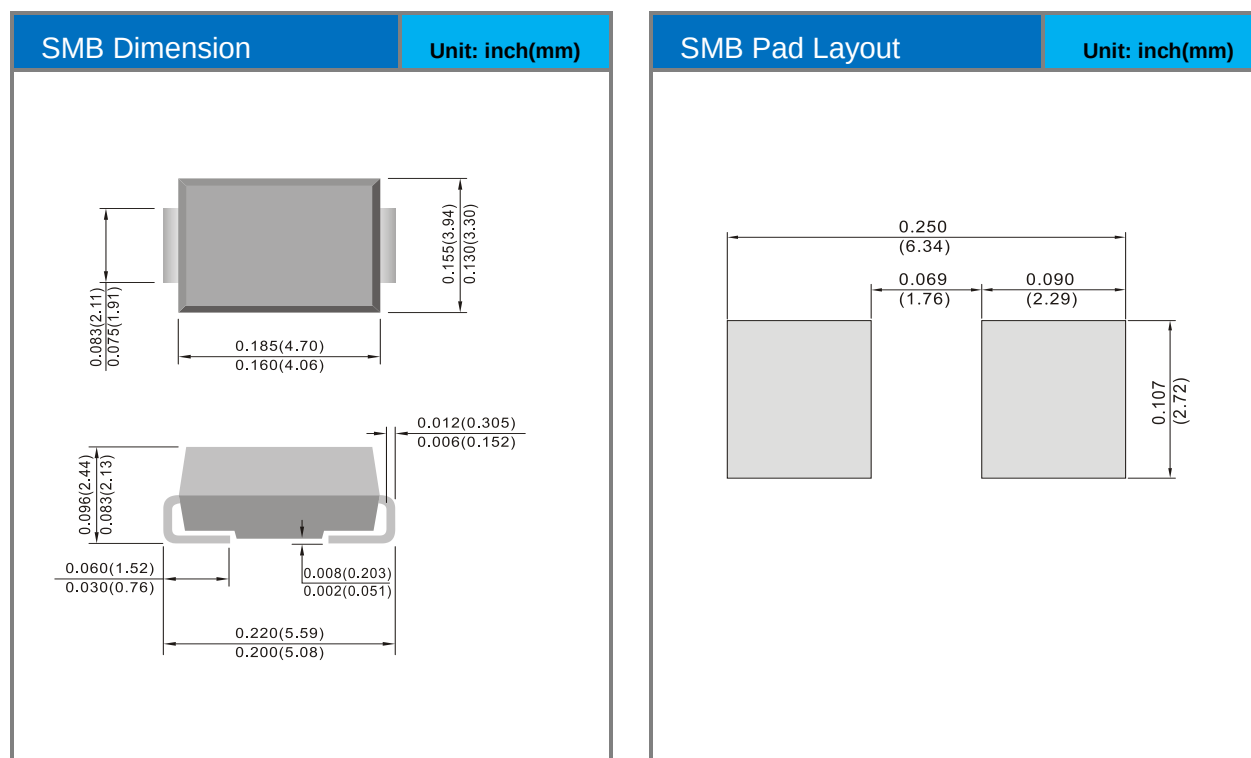
Fig.4 Typical Capacitance

## P6SMB10AS ~ P6SMB250CAS Series

### Product and Packing Information

| Part No.    | Package Type | Packing Type       | Marking   |
|-------------|--------------|--------------------|-----------|
| P6SMBxxxxAS | SMB          | 0.8K pcs / 7" reel | See Table |

### Packaging Information & Mounting Pad Layout



## **P6SMB10AS ~ P6SMB250CAS Series**

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