



**THE DATASHEET OF
P6SMB6.8A_R1_00001**





P6SMB6.8A ~ P6SMB400A Series

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR POWER 600 Watt

BREAK DOWN VOLTAGE

6.8 to 400 Volt

SMB / DO-214AA

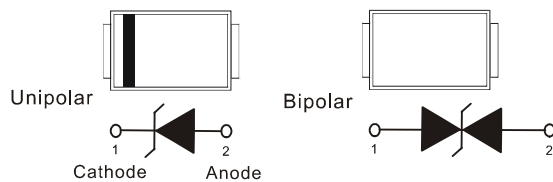
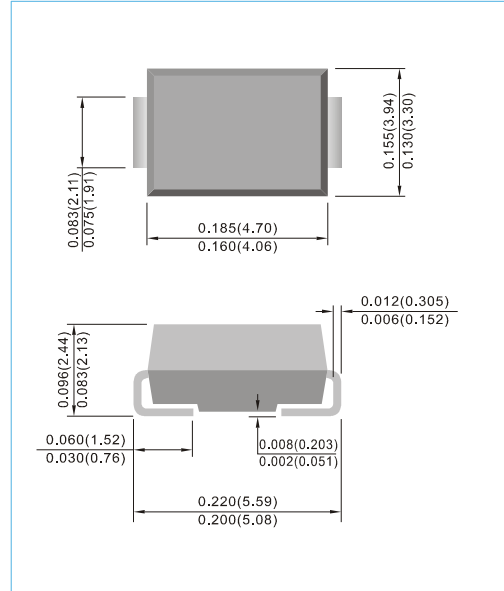
Unit : inch(mm)

FEATURES

- For surface mounted applications in order to optimize board space.
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Fammability Classification 94V-O
- High temperature soldering : 260°C /10 seconds at terminals
- ESD IEC-61000-4-2 Air \pm 30kV, Contact \pm 30kV
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

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 cathode end
- Standard Packaging : 12mm tape (EIA-481)
- Approx. Weight : 0.092 grams



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use CA Suffix for types
Electrical characteristics apply in both directions.

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 Pulse Power Dissipation on $t_p=10/1000\mu s$ waveform (Note 1,2, Fig.1) | P_{PP} | 600 | Watts |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (Note 2,3) | I_{FSM} | 100 | Amps |
| Peak Pulse Current on $t_p=10/1000\mu s$ waveform (Note 1) Fig.3 | I_{PPM} | see Table 1 | Amps |
| Typical Thermal Resistance Junction to Air (Note 2) | $R_{\theta JA}$ | 60 | $^{\circ}C / W$ |
| ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact) | V_{ESD} | ± 30 ± 30 | kV |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^{\circ}C$ |

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^{\circ}C$ per Fig. 2.
2. Mounted on $5mm^2$ (0.13mm thick) land areas.
3. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulse s per minute maximum.
4. A transient suppressor is selected according to the working peak reverse voltage (V_{RWM}), which should be equal to or greater than the DC or continuous peak operating voltage level.



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| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage 10/1000us | Peak Pulse Current 10/1000us | Marking Code | |
|--|------------|---------------------------|-------------------|------|--------------|-----------------|------|---------------------------------|---------------------------------|--------------|-----|
| | | | $V_{BR} @ I_T$ | | | $I_R @ V_{RWM}$ | | | | | |
| | | | Min. | Max. | | UNI | BI | | | | |
| UNI | BI | V | V | V | mA | uA | uA | V | A | UNI | BI |
| 600W Transient Voltage Suppressor | | | | | | | | | | | |
| P6SMB6.8A | P6SMB6.8CA | 5.8 | 6.45 | 7.14 | 10 | 1000 | 2000 | 10.5 | 57 | EZB | DZB |
| P6SMB7.5A | P6SMB7.5CA | 6.4 | 7.13 | 7.88 | 10 | 500 | 1000 | 11.3 | 53 | EZD | DZD |
| P6SMB8.2A | P6SMB8.2CA | 7.02 | 7.79 | 8.61 | 10 | 200 | 400 | 12.1 | 50 | EZF | DZF |
| P6SMB9.1A | P6SMB9.1CA | 7.78 | 8.65 | 9.5 | 1 | 50 | 100 | 13.4 | 45 | EZH | DZH |
| P6SMB10A | P6SMB10CA | 8.55 | 9.5 | 10.5 | 1 | 10 | 20 | 14.5 | 41 | EZK | DZK |
| P6SMB11A | P6SMB11CA | 9.4 | 10.5 | 11.6 | 1 | 5 | 10 | 15.6 | 38 | EZM | DZM |
| P6SMB12A | P6SMB12CA | 10.2 | 11.4 | 12.6 | 1 | 5 | 5 | 16.7 | 36 | EZP | DZP |
| P6SMB13A | P6SMB13CA | 11.1 | 12.4 | 13.7 | 1 | 1 | 1 | 18.2 | 33 | EZR | DZR |
| P6SMB15A | P6SMB15CA | 12.8 | 14.3 | 15.8 | 1 | 1 | 1 | 21.2 | 28 | EZT | DZT |
| P6SMB16A | P6SMB16CA | 13.6 | 15.2 | 16.8 | 1 | 1 | 1 | 22.5 | 27 | EZV | DZV |
| P6SMB18A | P6SMB18CA | 15.3 | 17.1 | 18.9 | 1 | 1 | 1 | 25.2 | 24 | EZX | DZX |
| P6SMB20A | P6SMB20CA | 17.1 | 19 | 21 | 1 | 1 | 1 | 27.7 | 22 | EZZ | DZZ |
| P6SMB22A | P6SMB22CA | 18.8 | 20.9 | 23.1 | 1 | 1 | 1 | 30.6 | 20 | EXB | DXB |
| P6SMB24A | P6SMB24CA | 20.5 | 22.8 | 25.2 | 1 | 1 | 1 | 33.2 | 18 | EXD | DXD |
| P6SMB27A | P6SMB27CA | 23.1 | 25.7 | 28.4 | 1 | 1 | 1 | 37.5 | 16 | EXF | DXF |
| P6SMB30A | P6SMB30CA | 25.6 | 28.5 | 31.5 | 1 | 1 | 1 | 41.4 | 14.4 | EXH | DXH |
| P6SMB33A | P6SMB33CA | 28.2 | 31.4 | 34.7 | 1 | 1 | 1 | 45.7 | 13.2 | EXK | DXK |
| P6SMB36A | P6SMB36CA | 30.8 | 34.2 | 37.8 | 1 | 1 | 1 | 49.9 | 12 | EXM | DXM |
| P6SMB39A | P6SMB39CA | 33.3 | 37.1 | 41 | 1 | 1 | 1 | 53.9 | 11.2 | EXP | DXP |
| P6SMB43A | P6SMB43CA | 36.8 | 40.9 | 45.2 | 1 | 1 | 1 | 59.3 | 10.1 | EXR | DXR |
| P6SMB47A | P6SMB47CA | 40.2 | 44.7 | 49.4 | 1 | 1 | 1 | 64.8 | 9.3 | EXT | DXT |
| P6SMB51A | P6SMB51CA | 43.6 | 48.5 | 53.6 | 1 | 1 | 1 | 70.1 | 8.6 | EXV | DXV |
| P6SMB56A | P6SMB56CA | 47.8 | 53.2 | 58.8 | 1 | 1 | 1 | 77 | 7.8 | EXX | DXX |
| P6SMB62A | P6SMB62CA | 53 | 58.9 | 65.1 | 1 | 1 | 1 | 85 | 7.1 | EXZ | DXZ |
| P6SMB68A | P6SMB68CA | 58.1 | 64.6 | 71.4 | 1 | 1 | 1 | 92 | 6.5 | EYB | DYB |
| P6SMB75A | P6SMB75CA | 64.1 | 71.3 | 78.8 | 1 | 1 | 1 | 103 | 5.8 | EYD | DYD |
| P6SMB82A | P6SMB82CA | 70.1 | 77.9 | 86.1 | 1 | 1 | 1 | 113 | 5.3 | EYF | DYF |
| P6SMB91A | P6SMB91CA | 77.8 | 86.5 | 95.5 | 1 | 1 | 1 | 125 | 4.8 | EYH | DYH |
| P6SMB100A | P6SMB100CA | 85.5 | 95 | 105 | 1 | 1 | 1 | 137 | 4.4 | EYK | DYK |
| P6SMB110A | P6SMB110CA | 94 | 105 | 116 | 1 | 1 | 1 | 152 | 4 | EYM | DYM |
| P6SMB120A | P6SMB120CA | 102 | 114 | 126 | 1 | 1 | 1 | 165 | 3.6 | EYP | DYP |
| P6SMB130A | P6SMB130CA | 111 | 124 | 137 | 1 | 1 | 1 | 179 | 3.3 | EYR | DYR |
| P6SMB150A | P6SMB150CA | 128 | 143 | 158 | 1 | 1 | 1 | 207 | 2.9 | EYT | DYT |
| P6SMB160A | P6SMB160CA | 136 | 152 | 168 | 1 | 1 | 1 | 219 | 2.7 | EYV | DYV |
| P6SMB170A | P6SMB170CA | 145 | 162 | 179 | 1 | 1 | 1 | 234 | 2.6 | EYX | DYX |
| P6SMB180A | P6SMB180CA | 154 | 171 | 189 | 1 | 1 | 1 | 246 | 2.4 | EYZ | DYZ |
| P6SMB200A | P6SMB200CA | 171 | 190 | 210 | 1 | 1 | 1 | 274 | 2.2 | EWB | DWB |
| P6SMB220A | P6SMB220CA | 185 | 209 | 231 | 1 | 1 | 1 | 328 | 1.9 | EWD | DWD |
| P6SMB250A | P6SMB250CA | 214 | 237 | 263 | 1 | 1 | 1 | 344 | 1.8 | EWF | DWF |
| P6SMB300A | - | 256 | 285 | 315 | 1 | 1 | - | 414 | 1.5 | EWH | - |
| P6SMB350A | - | 300 | 332 | 368 | 1 | 1 | - | 482 | 1.3 | EWK | - |
| P6SMB400A | - | 342 | 380 | 420 | 1 | 1 | - | 548 | 1.1 | EWM | - |



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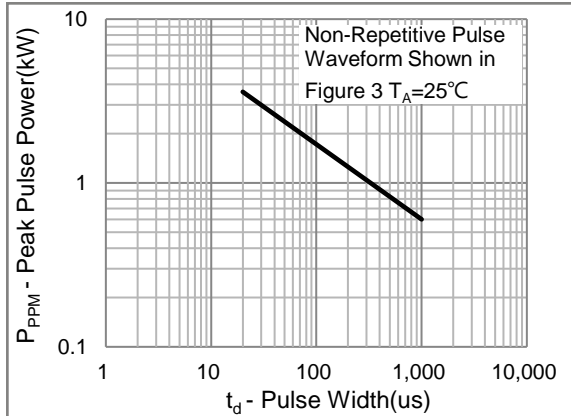


Fig.1 Peak Pulse Power Rating Curve

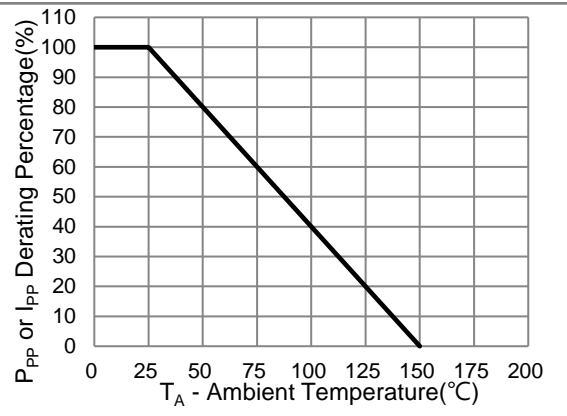


Fig.2 Derating Curve

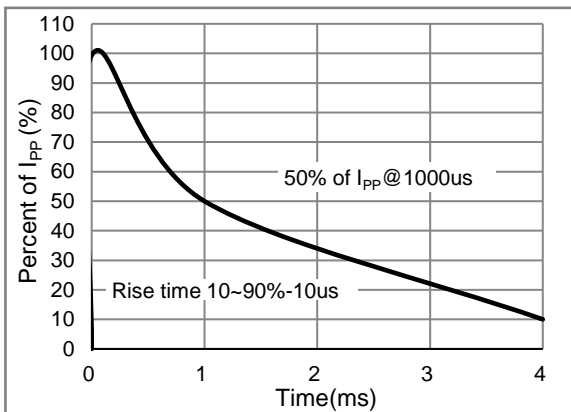


Fig.3 10/1000us Pulse Waveform

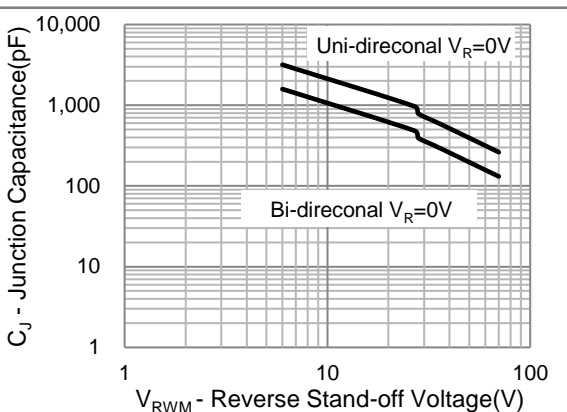


Fig.4 Typical Capacitance

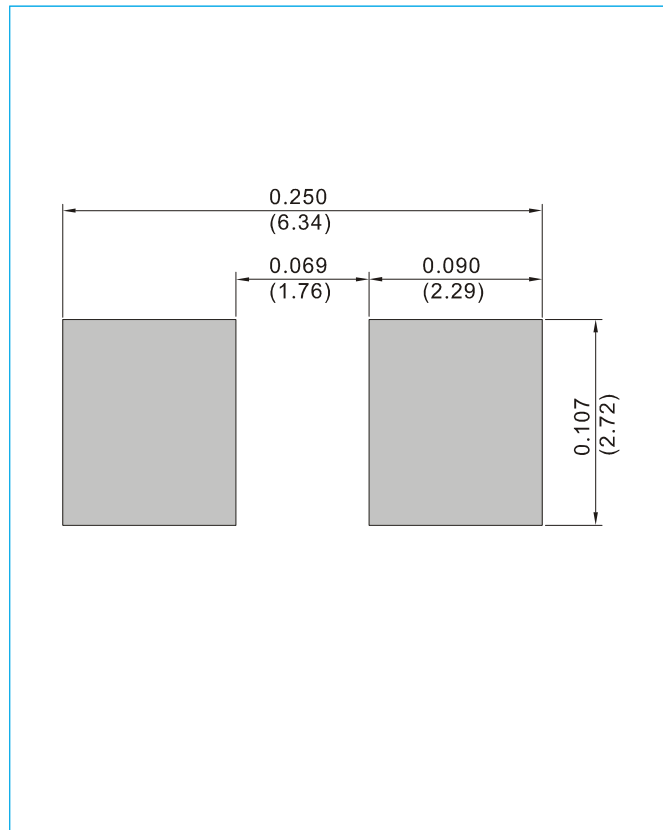


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MOUNTING PAD LAYOUT

SMB / DO-214AA

Unit : inch(mm)



ORDER INFORMATION

- Packing information
T/R - 3K per 13" plastic Reel
T/R - 0.8K per 7" plastic Reel



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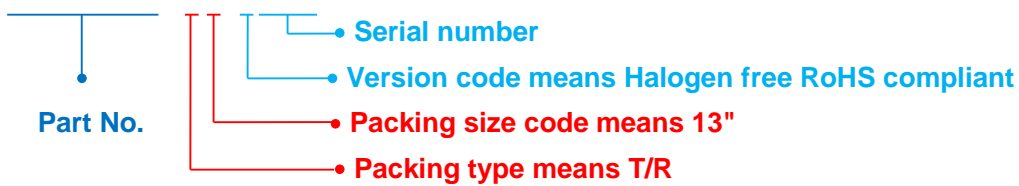
Part No._packing code_Version

P6SMB6.8A_R1_00001

P6SMB6.8A_R2_00001

For example :

RB500V-40_R2_00001



| Packing Code XX | | | | Version Code X | | Serial number XXXX |
|--------------------------------------|----------------------|----------------------------------|----------------------|-----------------------------|----------------------|---------------------------------------|
| Packing type | 1 st Code | Packing size code | 2 nd Code | HSF Level | 1 st Code | 2 nd ~5 th Code |
| Tape and Ammunition Box (T/B) | A | N/A | 0 | Halogen free RoHS compliant | 0 | serial number |
| Tape and Reel (T/R) | R | 7" | 1 | RoHS compliant | 1 | serial number |
| Bulk Packing (B/P) | B | 13" | 2 | | | |
| Tube Packing (T/P) | T | 26mm | X | | | |
| Tape and Reel (Right Oriented) (TRR) | S | 52mm | Y | | | |
| Tape and Reel (Left Oriented) (TRL) | L | PANASERT T/B CATHODE UP (PBCU) | U | | | |
| FORMING | F | PANASERT T/B CATHODE DOWN (PBCD) | D | | | |





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