



P6SMBJ-AU SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR POWER 600 Watt

STAND-OFF VOLTAGE

5 to 70 Volt

SMB / DO-214AA

Unit : inch(mm)

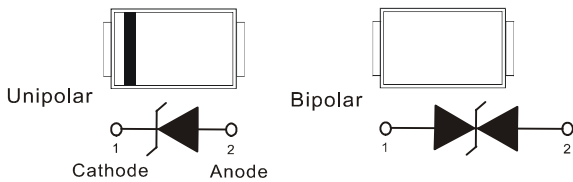
Recongnized File # E210467

FEATURES

- For surface mounted applications in order to optimize board space
- AEC-Q101 qualified
- Low inductance
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- High temperature soldering : 260°C /10 seconds at terminals
- ESD IEC-61000-4-2 Air ± 30kV, Contact ± 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)
- Weight: 0.003 ounces, 0.092 grams



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types P6SMBJ5.0 thru types P6SMBJ70.
 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 tp=10/1000µs waveform (Notes 1,2, Fig.1) | P _{PP} | 600 | Watts |
| Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (Notes 2,3) | I _{FSM} | 100 | Amps |
| Peak Pulse Current on tp=10/1000µs waveform (Notes 1) Fig.3 | I _{PPM} | see Table 1 | Amps |
| Typical Thermal Resistance Junction to Air (Notes 2) | R _{θJA} | 60 | °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 | °C |

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig. 2.
2. Mounted on 5mm² (0.13mm thick) land areas.
3. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses 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 10/1000µs | Peak Pulse Current 10/1000µs | Marking Code | |
|--|----------------|---------------------------|-------------------|------|--------------|-----------------|------|---------------------------------|---------------------------------|--------------|----|
| | | | $V_{BR} @ I_T$ | | | $I_R @ V_{RWM}$ | | | | | |
| | | V_{RWM} (Notes 4) | Min. | Max. | I_T | UNI | BI | $V_C @ I_{PP}$ | I_{PP} | | |
| UNI | BI | V | V | V | mA | µA | µA | V | A | UNI | BI |
| 600W Transient Voltage Suppressor | | | | | | | | | | | |
| P6SMBJ5.0A-AU | P6SMBJ5.0CA-AU | 5 | 6.4 | 7.07 | 10 | 800 | 1600 | 9.2 | 65.2 | KE | AE |
| P6SMBJ6.0A-AU | P6SMBJ6.0CA-AU | 6 | 6.67 | 7.37 | 10 | 800 | 1600 | 10.3 | 58.3 | KG | AG |
| P6SMBJ6.5A-AU | P6SMBJ6.5CA-AU | 6.5 | 7.22 | 7.98 | 10 | 500 | 1000 | 11.2 | 53.6 | KK | AK |
| P6SMBJ7.0A-AU | P6SMBJ7.0CA-AU | 7 | 7.78 | 8.6 | 10 | 200 | 400 | 12.0 | 50 | KM | AM |
| P6SMBJ7.5A-AU | P6SMBJ7.5CA-AU | 7.5 | 8.33 | 9.21 | 1 | 100 | 200 | 12.9 | 46.5 | KP | AP |
| P6SMBJ8.0A-AU | P6SMBJ8.0CA-AU | 8 | 8.89 | 9.83 | 1 | 50 | 100 | 13.6 | 44.1 | KR | AR |
| P6SMBJ8.5A-AU | P6SMBJ8.5CA-AU | 8.5 | 9.44 | 10.4 | 1 | 10 | 20 | 14.4 | 41.7 | KT | AT |
| P6SMBJ9.0A-AU | P6SMBJ9.0CA-AU | 9 | 10 | 11.1 | 1 | 5 | 5 | 15.4 | 39 | KV | AV |
| P6SMBJ10A-AU | P6SMBJ10CA-AU | 10 | 11.1 | 12.3 | 1 | 5 | 5 | 17 | 35.3 | KX | AX |
| P6SMBJ11A-AU | P6SMBJ11CA-AU | 11 | 12.2 | 13.5 | 1 | 1 | 1 | 18.2 | 33 | KZ | AZ |
| P6SMBJ12A-AU | P6SMBJ12CA-AU | 12 | 13.3 | 14.7 | 1 | 1 | 1 | 19.9 | 30.2 | LE | BE |
| P6SMBJ13A-AU | P6SMBJ13CA-AU | 13 | 14.4 | 15.9 | 1 | 1 | 1 | 21.5 | 27.9 | LG | BG |
| P6SMBJ14A-AU | P6SMBJ14CA-AU | 14 | 15.6 | 17.2 | 1 | 1 | 1 | 23.2 | 25.8 | LK | BK |
| P6SMBJ15A-AU | P6SMBJ15CA-AU | 15 | 16.7 | 18.5 | 1 | 1 | 1 | 24.4 | 24 | LM | BM |
| P6SMBJ16A-AU | P6SMBJ16CA-AU | 16 | 17.8 | 19.7 | 1 | 1 | 1 | 26 | 23.1 | LP | BP |
| P6SMBJ17A-AU | P6SMBJ17CA-AU | 17 | 18.9 | 20.9 | 1 | 1 | 1 | 27.6 | 21.7 | LR | BR |
| P6SMBJ18A-AU | P6SMBJ18CA-AU | 18 | 20 | 22.1 | 1 | 1 | 1 | 29.2 | 20.5 | LT | BT |
| P6SMBJ20A-AU | P6SMBJ20CA-AU | 20 | 22.2 | 24.5 | 1 | 1 | 1 | 32.4 | 18.5 | LV | BV |
| P6SMBJ22A-AU | P6SMBJ22CA-AU | 22 | 24.4 | 27 | 1 | 1 | 1 | 35.5 | 16.9 | LX | BX |
| P6SMBJ24A-AU | P6SMBJ24CA-AU | 24 | 26.7 | 29.5 | 1 | 1 | 1 | 38.9 | 15.4 | LZ | BZ |
| P6SMBJ26A-AU | P6SMBJ26CA-AU | 26 | 28.9 | 31.9 | 1 | 1 | 1 | 42.1 | 14.2 | ME | CE |
| P6SMBJ28A-AU | P6SMBJ28CA-AU | 28 | 31.1 | 34.4 | 1 | 1 | 1 | 45.4 | 13.2 | MG | CG |
| P6SMBJ30A-AU | P6SMBJ30CA-AU | 30 | 33.3 | 36.8 | 1 | 1 | 1 | 48.4 | 12.4 | MK | CK |
| P6SMBJ33A-AU | P6SMBJ33CA-AU | 33 | 36.7 | 40.6 | 1 | 1 | 1 | 53.3 | 11.3 | MM | CM |
| P6SMBJ36A-AU | P6SMBJ36CA-AU | 36 | 40 | 44.2 | 1 | 1 | 1 | 58.1 | 10.3 | MP | CP |
| P6SMBJ40A-AU | P6SMBJ40CA-AU | 40 | 44.4 | 49.1 | 1 | 1 | 1 | 64.5 | 9.3 | MR | CR |
| P6SMBJ43A-AU | P6SMBJ43CA-AU | 43 | 47.8 | 52.8 | 1 | 1 | 1 | 69.4 | 8.6 | MT | CT |
| P6SMBJ45A-AU | P6SMBJ45CA-AU | 45 | 50 | 55.3 | 1 | 1 | 1 | 72.7 | 8.3 | MV | CV |
| P6SMBJ48A-AU | P6SMBJ48CA-AU | 48 | 53.3 | 58.9 | 1 | 1 | 1 | 77.4 | 7.7 | MX | CX |
| P6SMBJ51A-AU | P6SMBJ51CA-AU | 51 | 56.7 | 62.7 | 1 | 1 | 1 | 82.4 | 7.3 | MZ | CZ |
| P6SMBJ54A-AU | P6SMBJ54CA-AU | 54 | 60 | 66.3 | 1 | 1 | 1 | 87.1 | 6.9 | NE | DE |
| P6SMBJ58A-AU | P6SMBJ58CA-AU | 58 | 64.4 | 71.2 | 1 | 1 | 1 | 93.6 | 6.4 | NG | DG |
| P6SMBJ60A-AU | P6SMBJ60CA-AU | 60 | 66.7 | 73.7 | 1 | 1 | 1 | 96.8 | 6.2 | NK | DK |
| P6SMBJ64A-AU | P6SMBJ64CA-AU | 64 | 71.1 | 78.6 | 1 | 1 | 1 | 103 | 5.8 | NM | DM |
| P6SMBJ70A-AU | P6SMBJ70CA-AU | 70 | 77.8 | 86 | 1 | 1 | 1 | 113 | 5.3 | NP | DP |



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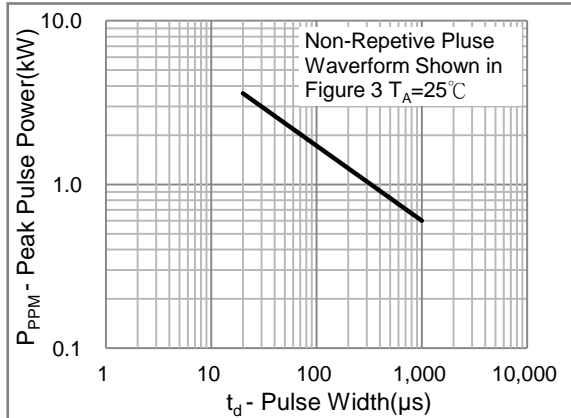


Fig.1 Peak Pulse Power Rating

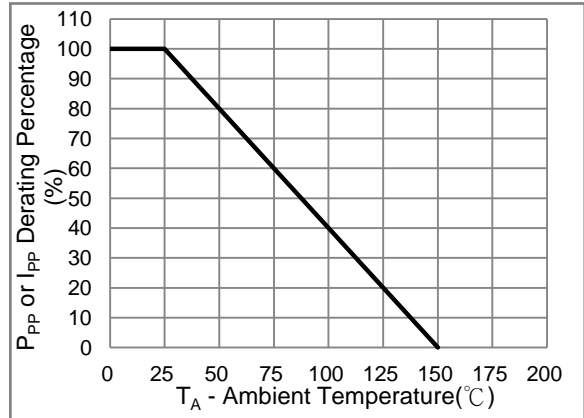


Fig.2 Derating Curve

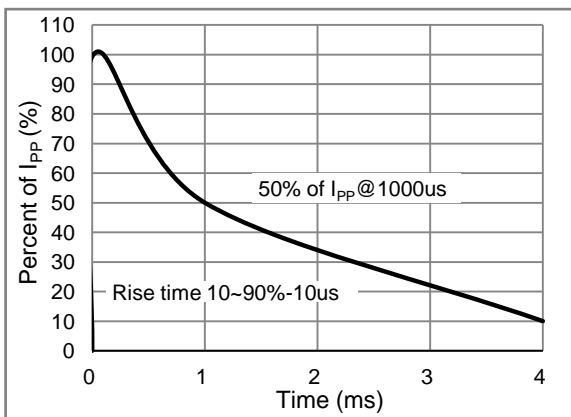


Fig.3 10/1000μs Pulse Waverform

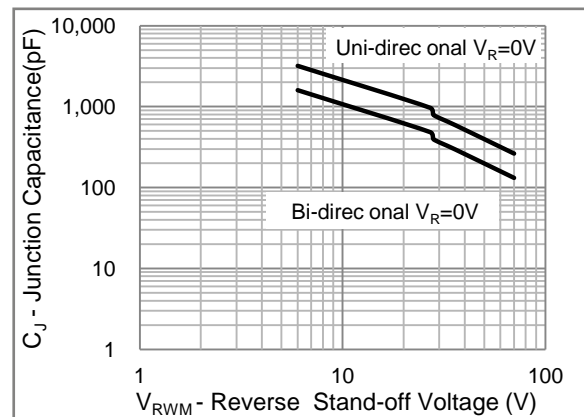


Fig.4 Typical Capacitance

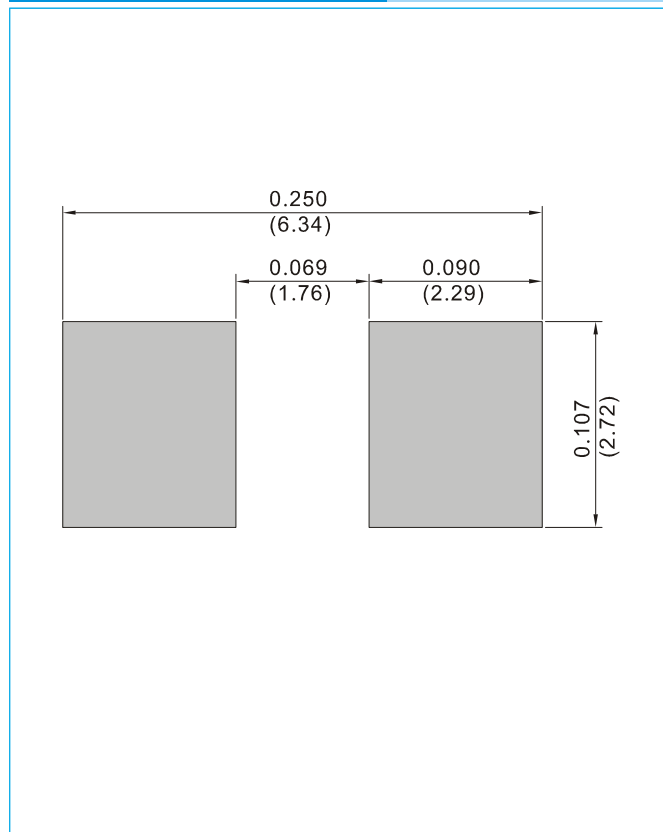


P6SMBJ-AU SERIES

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

P6SMBJ5.0-AU_R1_000A1

P6SMBJ5.0-AU_R2_000A1

For example :

RB500V-40_R2_00001



| Packing Code XX | | | | Version Code XXXXX | | |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type | 1 st Code | Packing size code | 2 nd Code | HF or RoHS | 1 st Code | 2 nd ~5 th Code |
| Tape and Ammunition Box (T/B) | A | N/A | 0 | HF | 0 | serial number |
| Tape and Reel (T/R) | R | 7" | 1 | RoHS | 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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