

P6SMB SERIES

Glass Passivated Junction Transient Voltage Suppressor



VOLTAGE - 6.8 TO 550 Volts
600 Watt Peak Pulse Power

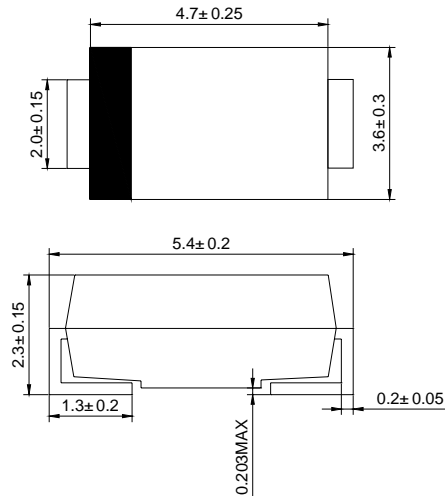
Features

- For surface mounted applications in order to optimize board space
- Glass passivated junction
- Built-in strain relief
- Excellent clamping capability
- Low profile package
- Low inductance
- Excellent clamping capability
- 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 guaranteed: 250°C/10 seconds at terminals

Mechanical Data

Case: JEDEC DO-214AA Molded plastic
Terminal : Solder plated, solderable per MIL-STD-750, Method 2026
Polarity: Color band denoted positive end (cathode) except Bipolar
Standard Packaging: 12mm tape(EIA STD RS-481)
Weight: 0.003 ounces, 0.093 grams

DO - 214AA(SMB)



Dimensions in millimeters

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use CA Suffix for types P6SMB6.8CA thru types P6SMB550CA Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| RATING | SYMBOL | VALUE | UNITS |
|---|-----------------------------------|-------------|-------|
| Peak Pulse Power Dissipation at TA = 25 °C, TP = 1ms (Note 1) | P _{PPM} | Minimum 600 | Watts |
| Peak Pulse Current of on 10/1000 μs waveform (Note 1) | I _{PPM} | SEE TABLE 1 | Amps |
| Steady State Power Dissipation at TL = 75°C Lead lengths .375", 9.5mm (Note 2) | P _{M(AV)} | 1.0 | Watts |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, (JEDEC Method)(Note 3) | I _{FSM} | 100 | Amps |
| Operatings and Storage Temperature Range | T _J , T _{STG} | -55 +150 | °C |

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above Ta=25 °C per Fig.2.
2. Mounted on 5.0mm² (0.03mm thick) Copper Pads to each termina
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle=4 pulses per minutes maximum.

RATING AND CHARACTERISTIC CURVES P6SMB SERIES

Fig. 1 - Peak Pulse Power Rating Curve

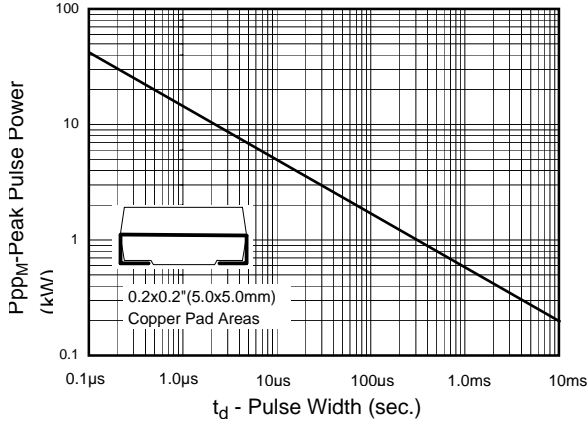


Fig.2 - Pulse Derating Curve

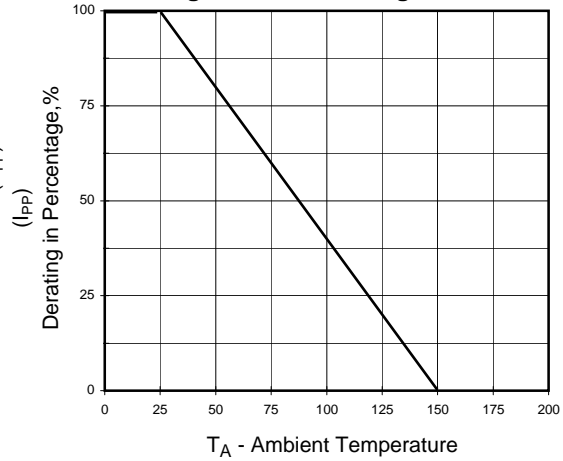


Fig.3 - Pulse Waveform

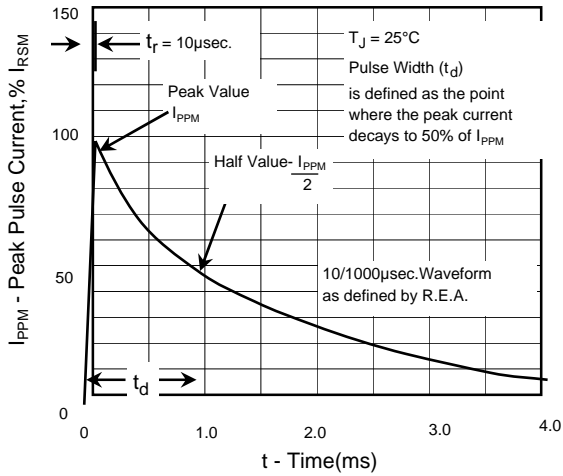


Fig.4 - Typical Junction Capacitance

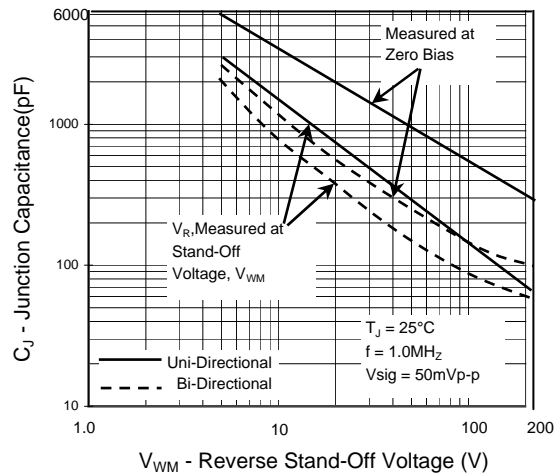


Fig. 5 - Typ. Transient Thermal Impedance

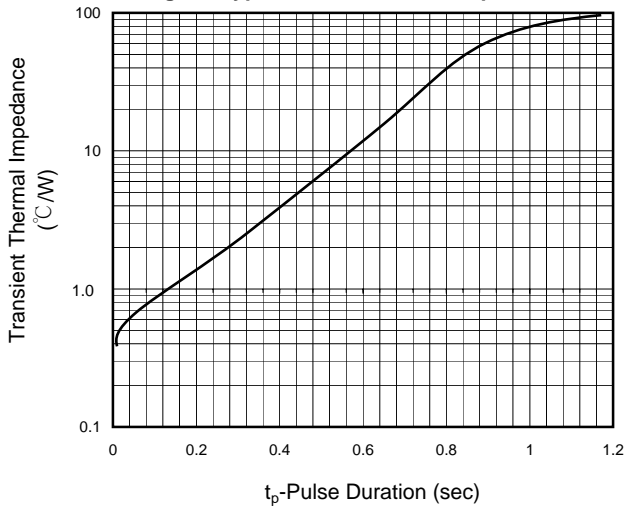
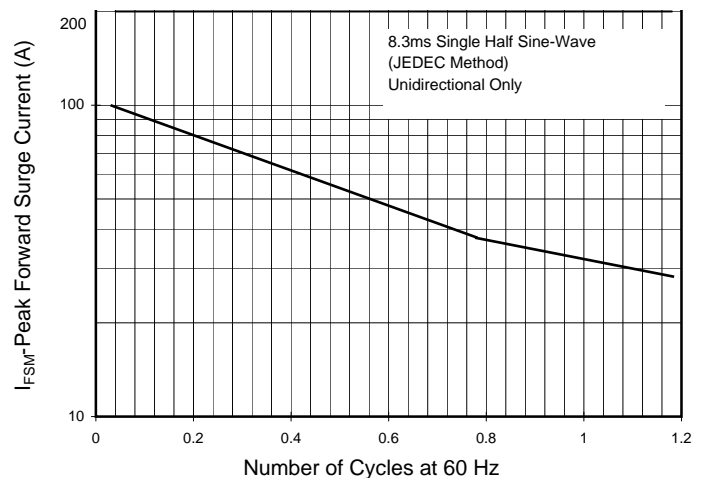


Fig.6 - Maximum Non-Repetitive Peak Forward Surge Current





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Glass Passivated Junction Transient Voltage Suppressor

600 Watts Surface Mount TVS

| P6SMB PART NUMBER | | | MARKING CODE | | REVERSE STAND- OFF VOLTAGE $V_{RWM}(V)$ | BREAKDOWN VOLTAGE $V_{BR}(V)$ MIN. @ I_T | BREAKDOWN VOLTAGE $V_{BR}(V)$ MAX. @ I_T | TEST CURRENT I_T (mA) | MAXIMUM CLAMPING VOLTAGE @ I_{pp} $V_c(V)$ | PEAK PULSE CURRENT I_{pp} (A) | REVERSE LEAKAGE @ VR_{WM} IR(μA) |
|----------------------|------|-------|---------------|--------------|--|--|---|-------------------------------|---|--|--|
| | | | UNI- POLAR | BI- POLAR | | | | | | | |
| P6SMB | 6.8A | 6.8CA | 6V8A | 6V8C | 5.80 | 6.45 | 7.14 | 10 | 10.5 | 58.1 | 1000 |
| P6SMB | 7.5A | 7.5CA | 7V5A | 7V5C | 6.40 | 7.13 | 7.88 | 10 | 11.3 | 54.0 | 500 |
| P6SMB | 8.2A | 8.2CA | 8V2A | 8V2C | 7.02 | 7.79 | 8.61 | 10 | 12.1 | 50.4 | 200 |
| P6SMB | 9.1A | 9.1CA | 9V1A | 9V1C | 7.78 | 8.65 | 9.55 | 1 | 13.4 | 45.5 | 50 |
| P6SMB | 10A | 10CA | 10A | 10C | 8.55 | 9.50 | 10.50 | 1 | 14.5 | 42.1 | 10 |
| P6SMB | 11A | 11CA | 11A | 11C | 9.40 | 10.50 | 11.60 | 1 | 15.6 | 39.1 | 5 |
| P6SMB | 12A | 12CA | 12A | 12C | 10.20 | 11.40 | 12.60 | 1 | 16.7 | 36.5 | 5 |
| P6SMB | 13A | 13CA | 13A | 13C | 11.10 | 12.40 | 13.70 | 1 | 18.2 | 33.5 | 5 |
| P6SMB | 15A | 15CA | 15A | 15C | 12.80 | 14.30 | 15.80 | 1 | 21.2 | 28.8 | 5 |
| P6SMB | 16A | 16CA | 16A | 16C | 13.60 | 15.20 | 16.80 | 1 | 22.5 | 27.1 | 5 |
| P6SMB | 18A | 18CA | 18A | 18C | 15.30 | 17.10 | 18.90 | 1 | 25.5 | 24.2 | 5 |
| P6SMB | 20A | 20CA | 20A | 20C | 17.10 | 19.00 | 21.00 | 1 | 27.7 | 22.0 | 5 |
| P6SMB | 22A | 22CA | 22A | 22C | 18.80 | 20.90 | 23.10 | 1 | 30.6 | 19.9 | 5 |
| P6SMB | 24A | 24CA | 24A | 24C | 20.50 | 22.80 | 25.20 | 1 | 33.2 | 18.4 | 5 |
| P6SMB | 27A | 27CA | 27A | 27C | 23.10 | 25.70 | 28.40 | 1 | 37.5 | 16.3 | 5 |
| P6SMB | 30A | 30CA | 30A | 30C | 25.60 | 28.50 | 31.50 | 1 | 41.4 | 14.7 | 5 |
| P6SMB | 33A | 33CA | 33A | 33C | 28.20 | 31.40 | 34.70 | 1 | 45.7 | 13.3 | 5 |
| P6SMB | 36A | 36CA | 36A | 36C | 30.80 | 34.20 | 37.80 | 1 | 49.9 | 12.2 | 5 |
| P6SMB | 39A | 39CA | 39A | 39C | 33.30 | 37.10 | 41.00 | 1 | 53.9 | 11.3 | 5 |
| P6SMB | 43A | 43CA | 43A | 43C | 36.80 | 40.90 | 45.20 | 1 | 59.3 | 10.3 | 5 |
| P6SMB | 47A | 47CA | 47A | 47C | 40.20 | 44.70 | 49.40 | 1 | 64.8 | 9.4 | 5 |
| P6SMB | 51A | 51CA | 51A | 51C | 43.60 | 48.50 | 53.60 | 1 | 70.1 | 8.7 | 5 |
| P6SMB | 56A | 56CA | 56A | 56C | 47.80 | 53.20 | 58.80 | 1 | 77.0 | 7.9 | 5 |
| P6SMB | 62A | 62CA | 62A | 62C | 53.00 | 58.90 | 65.10 | 1 | 85.0 | 7.2 | 5 |
| P6SMB | 68A | 68CA | 68A | 68C | 58.10 | 64.60 | 71.40 | 1 | 92.0 | 6.6 | 5 |
| P6SMB | 75A | 75CA | 75A | 75C | 64.10 | 71.30 | 78.80 | 1 | 103.0 | 5.9 | 5 |
| P6SMB | 82A | 82CA | 82A | 82C | 70.10 | 77.90 | 86.10 | 1 | 113.0 | 5.4 | 5 |
| P6SMB | 91A | 91CA | 91A | 91C | 77.80 | 86.50 | 95.50 | 1 | 125.0 | 4.9 | 5 |
| P6SMB | 100A | 100CA | 100A | 100C | 85.50 | 95.00 | 105.00 | 1 | 137.0 | 4.5 | 5 |
| P6SMB | 110A | 110CA | 110A | 110C | 94.00 | 105.00 | 116.00 | 1 | 152.0 | 4.0 | 5 |
| P6SMB | 120A | 120CA | 120A | 120C | 102.00 | 114.00 | 126.00 | 1 | 165.0 | 3.7 | 5 |
| P6SMB | 130A | 130CA | 130A | 130C | 111.00 | 124.00 | 137.00 | 1 | 179.0 | 3.4 | 5 |
| P6SMB | 150A | 150CA | 150A | 150C | 128.00 | 143.00 | 158.00 | 1 | 207.0 | 2.9 | 5 |
| P6SMB | 160A | 160CA | 160A | 160C | 136.00 | 152.00 | 168.00 | 1 | 219.0 | 2.7 | 5 |
| P6SMB | 170A | 170CA | 170A | 170C | 145.00 | 162.00 | 179.00 | 1 | 234.0 | 2.6 | 5 |
| P6SMB | 180A | 180CA | 180A | 180C | 154.00 | 171.00 | 189.00 | 1 | 246.0 | 2.5 | 5 |
| P6SMB | 200A | 200CA | 200A | 200C | 171.00 | 190.00 | 210.00 | 1 | 274.0 | 2.2 | 5 |
| P6SMB | 220A | 220CA | 220A | 220C | 185.00 | 209.00 | 231.00 | 1 | 328.0 | 1.9 | 5 |
| P6SMB | 250A | 250CA | 250A | 250C | 214.00 | 237.00 | 263.00 | 1 | 344.0 | 1.8 | 5 |
| P6SMB | 300A | 300CA | 300A | 300C | 256.00 | 285.00 | 315.00 | 1 | 414.0 | 1.5 | 5 |
| P6SMB | 350A | 350CA | 350A | 350C | 300.00 | 332.00 | 368.00 | 1 | 482.0 | 1.3 | 5 |
| P6SMB | 400A | 400CA | 400A | 400C | 342.00 | 380.00 | 420.00 | 1 | 548.0 | 1.1 | 5 |
| P6SMB | 440A | 440CA | 440A | 440C | 376.00 | 418.00 | 462.00 | 1 | 602.0 | 1 | 5 |
| P6SMB | 480A | 480CA | 480A | 480C | 408.00 | 456.00 | 504.00 | 1 | 658.0 | 0.9 | 5 |
| P6SMB | 510A | 510CA | 510A | 510C | 434.00 | 485.00 | 535.00 | 1 | 698.0 | 0.9 | 5 |
| P6SMB | 530A | 530CA | 530A | 530C | 450.00 | 503.50 | 556.50 | 1 | 725.0 | 0.8 | 5 |
| P6SMB | 540A | 540CA | 540A | 540C | 459.00 | 513.00 | 567.00 | 1 | 740.0 | 0.8 | 5 |
| P6SMB | 550A | 550CA | 550A | 550C | 467.00 | 522.50 | 577.50 | 1 | 760.0 | 0.8 | 5 |

For bidirectional type having V_{RWM} of 10 volts and less, the IR limit is double.