



P4SMA6.8A ~ P4SMA250CA Series

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR POWER 400 Watt

BREAK DOWN VOLTAGE

6.8 to 250 Volt

SMA / DO-214AC

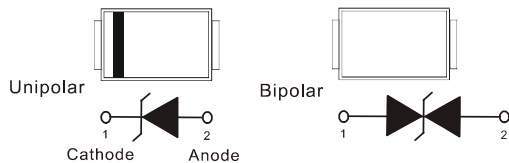
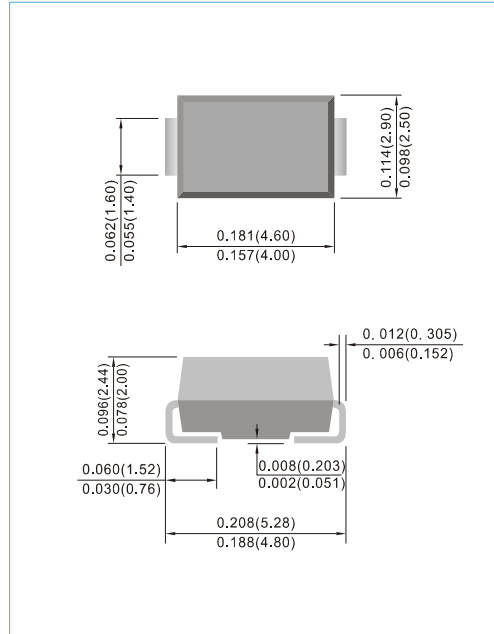
Unit : inch(mm)

FEATURES

- For surface mounted applications in order to optimize board space
- Glass passivated junction
- 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-214AC, 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 : 0.0679 grams



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use CA Suffix for types P4SMA6.8CA thru types P4SMA250CA
Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

| Rating | Symbol | Value | Units |
|---|-----------------|----------------------|-----------------------------|
| Peak Pulse Power Dissipation on $T_A = 25^\circ\text{C}$ (Notes 1,2,5, Fig.1) | P_{PP} | 400 | Watts |
| ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact) | V_{ESD} | ± 30 ± 30 | kV |
| Peak Forward Surge Current per Fig.5 (Notes 3) | I_{FSM} | 40 | Amps |
| Peak Pulse Current on $t_p=10/1000\mu\text{s}$ waveform (Notes 1)Fig.2 | I_{PPM} | see Table 1 | Amps |
| Typical Thermal Resistance Junction to Air (Notes 2) | $R_{\theta JA}$ | 70 | $^\circ\text{C} / \text{W}$ |
| Operating Junction and Storage Temperature Range | T_J, T_{STG} | -55 to +150 | $^\circ\text{C}$ |

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2.
2. Mounted on 5mm^2 copper pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
4. Lead temperature at $75^\circ\text{C} = T_L$.
5. Peak pulse power waveform is $10/1000\mu\text{s}$.
6. 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} | | | | | |
| UNI | BI | V | Min. | Max. | I _r | UNI | BI | V _C @ I _{PP} | I _{PP} | UNI | BI |
| | | | V | V | | µA | µA | | | | |
| 400W Transient Voltage Suppressor | | | | | | | | | | | |
| P4SMA6.8A | P4SMA6.8CA | 5.8 | 6.45 | 7.14 | 10 | 1000 | 2000 | 10.5 | 40 | MZB | NZB |
| P4SMA7.5A | P4SMA7.5CA | 6.4 | 7.13 | 7.88 | 10 | 500 | 1000 | 11.3 | 37 | MZD | NZD |
| P4SMA8.2A | P4SMA8.2CA | 7.02 | 7.79 | 8.61 | 10 | 200 | 400 | 12.1 | 35 | MZF | NZF |
| P4SMA9.1A | P4SMA9.1CA | 7.78 | 8.65 | 9.5 | 1 | 50 | 100 | 13.4 | 31 | MZH | NZH |
| P4SMA10A | P4SMA10CA | 8.55 | 9.5 | 10.5 | 1 | 10 | 20 | 14.5 | 29 | MZK | NZK |
| P4SMA11A | P4SMA11CA | 9.4 | 10.5 | 11.6 | 1 | 5 | 10 | 15.6 | 27 | MZM | NZM |
| P4SMA12A | P4SMA12CA | 10.2 | 11.4 | 12.6 | 1 | 1 | 1 | 16.7 | 25 | MZP | NZP |
| P4SMA13A | P4SMA13CA | 11.1 | 12.4 | 13.7 | 1 | 1 | 1 | 18.2 | 23 | MZR | NZR |
| P4SMA15A | P4SMA15CA | 12.8 | 14.3 | 15.8 | 1 | 1 | 1 | 21.2 | 20 | MZT | NZT |
| P4SMA16A | P4SMA16CA | 13.6 | 15.2 | 16.8 | 1 | 1 | 1 | 22.5 | 19 | MZV | NZV |
| P4SMA18A | P4SMA18CA | 15.3 | 17.1 | 18.9 | 1 | 1 | 1 | 25.2 | 17 | MZX | NZX |
| P4SMA20A | P4SMA20CA | 17.1 | 19 | 21 | 1 | 1 | 1 | 27.7 | 15 | MZZ | NZZ |
| P4SMA22A | P4SMA22CA | 18.8 | 20.9 | 23.1 | 1 | 1 | 1 | 30.6 | 14 | MXB | NXB |
| P4SMA24A | P4SMA24CA | 20.5 | 22.8 | 25.2 | 1 | 1 | 1 | 33.2 | 13 | MXD | NXD |
| P4SMA27A | P4SMA27CA | 23.1 | 25.7 | 28.4 | 1 | 1 | 1 | 37.5 | 11.2 | MXF | NXF |
| P4SMA30A | P4SMA30CA | 25.6 | 28.5 | 31.5 | 1 | 1 | 1 | 41.4 | 10 | MXH | NXH |
| P4SMA33A | P4SMA33CA | 28.2 | 31.4 | 34.7 | 1 | 1 | 1 | 45.7 | 9 | MXK | NXK |
| P4SMA36A | P4SMA36CA | 30.8 | 34.2 | 37.8 | 1 | 1 | 1 | 49.9 | 8.4 | MXM | NXM |
| P4SMA39A | P4SMA39CA | 33.3 | 37.1 | 41 | 1 | 1 | 1 | 53.9 | 7.8 | MXP | NXP |
| P4SMA43A | P4SMA43CA | 36.8 | 40.9 | 45.2 | 1 | 1 | 1 | 59.3 | 7.1 | MXR | NXR |
| P4SMA47A | P4SMA47CA | 40.2 | 44.7 | 49.4 | 1 | 1 | 1 | 64.8 | 5 | MXT | NXT |
| P4SMA51A | P4SMA51CA | 43.6 | 48.5 | 53.6 | 1 | 1 | 1 | 70.1 | 6 | MXV | NXV |
| P4SMA56A | P4SMA56CA | 47.8 | 53.2 | 58.8 | 1 | 1 | 1 | 77 | 5.5 | MXX | NXX |
| P4SMA62A | P4SMA62CA | 53 | 58.9 | 65.1 | 1 | 1 | 1 | 85 | 5 | MXZ | NXZ |
| P4SMA68A | P4SMA68CA | 58.1 | 64.6 | 71.4 | 1 | 1 | 1 | 92 | 4.6 | MYB | NYB |
| P4SMA75A | P4SMA75CA | 64.1 | 71.3 | 78.8 | 1 | 1 | 1 | 103 | 4.1 | MYD | NYD |
| P4SMA82A | P4SMA82CA | 70.1 | 77.9 | 86.1 | 1 | 1 | 1 | 113 | 3.7 | MYF | NYF |
| P4SMA91A | P4SMA91CA | 77.8 | 86.5 | 95.5 | 1 | 1 | 1 | 125 | 3.4 | MYH | NYH |
| P4SMA100A | P4SMA100CA | 85.5 | 95 | 105 | 1 | 1 | 1 | 137 | 3.1 | MYK | NYK |
| P4SMA110A | P4SMA110CA | 94 | 105 | 116 | 1 | 1 | 1 | 152 | 2.8 | MYM | NYM |
| P4SMA120A | P4SMA120CA | 102 | 114 | 126 | 1 | 1 | 1 | 165 | 2.5 | MYP | NYP |
| P4SMA130A | P4SMA130CA | 111 | 124 | 137 | 1 | 1 | 1 | 179 | 2.3 | MYR | NYR |
| P4SMA150A | P4SMA150CA | 128 | 143 | 158 | 1 | 1 | 1 | 207 | 2 | MYT | NYT |
| P4SMA160A | P4SMA160CA | 136 | 152 | 168 | 1 | 1 | 1 | 219 | 1.9 | MYV | NYV |
| P4SMA170A | P4SMA170CA | 145 | 162 | 179 | 1 | 1 | 1 | 234 | 1.8 | MYX | NYX |
| P4SMA180A | P4SMA180CA | 154 | 171 | 189 | 1 | 1 | 1 | 246 | 1.7 | MYZ | NYZ |
| P4SMA200A | P4SMA200CA | 171 | 190 | 210 | 1 | 1 | 1 | 274 | 1.5 | MWB | NWB |
| P4SMA220A | P4SMA220CA | 185 | 209 | 231 | 1 | 1 | 1 | 328 | 1.2 | MWD | NWD |
| P4SMA250A | P4SMA250CA | 214 | 237 | 263 | 1 | 1 | 1 | 344 | 1.2 | MWF | NWF |



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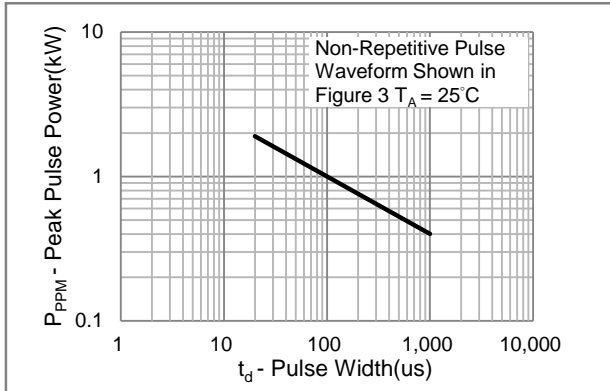


Fig.1 Pulse Power Rating Curve

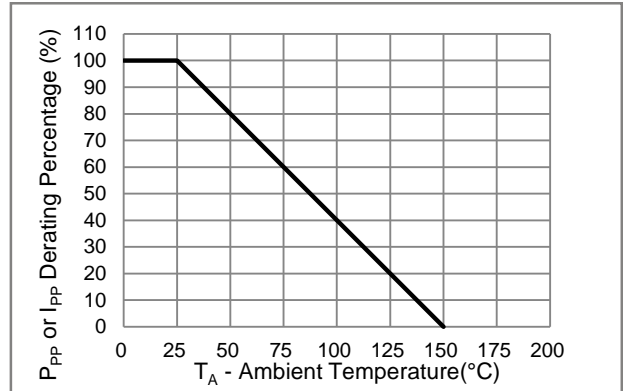


Fig.2 Derating Curve

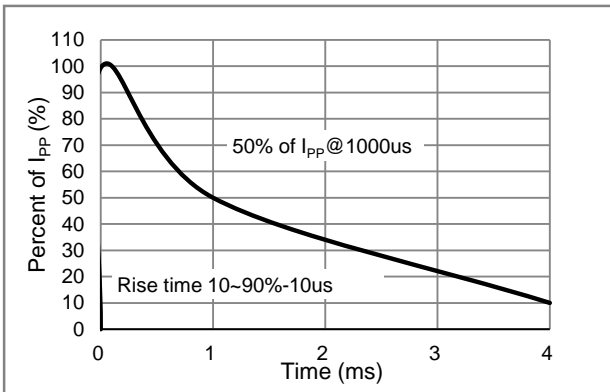


Fig.3 10/1000us Pulse Waveform

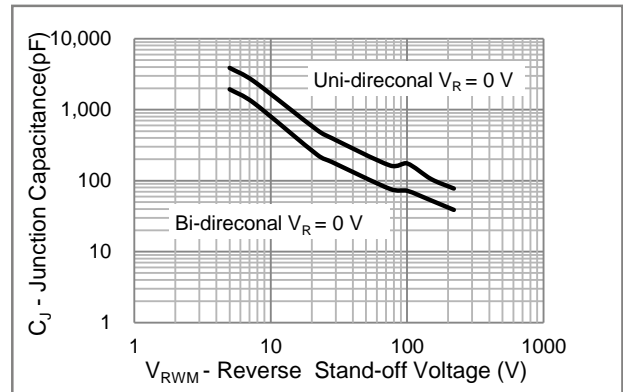


Fig.4 Typical Capacitance

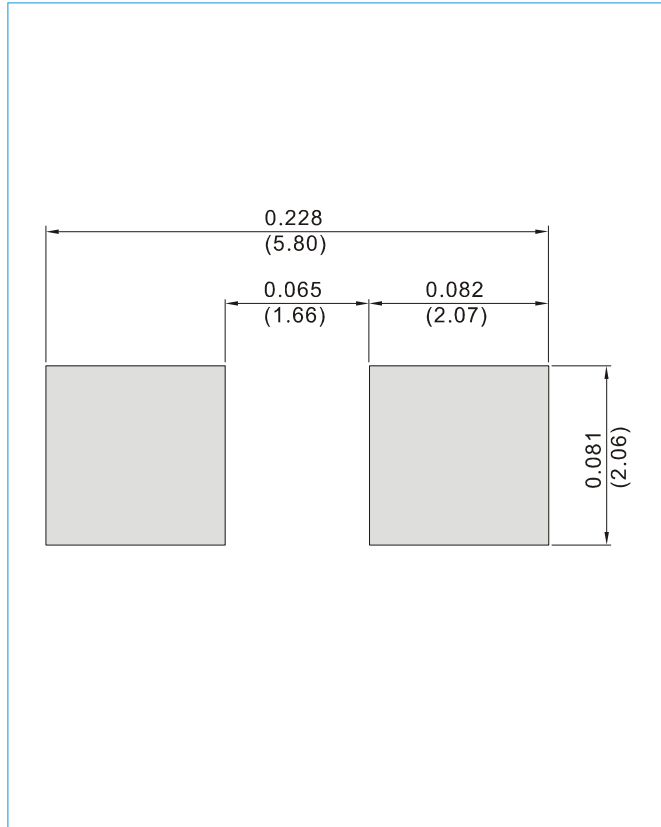


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MOUNTING PAD LAYOUT

SMA / DO-214AC

Unit : inch(mm)



ORDER INFORMATION

- Packing information
T/R - 7.5K per 13" plastic Reel
T/R - 1.8K per 7" plastic Reel



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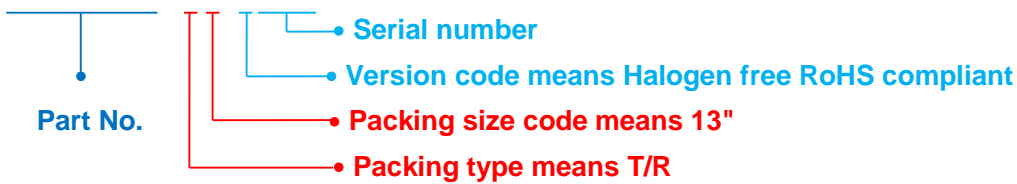
Part No._packing code_Version

P4SMA6.8A_R1_00001

P4SMA6.8A_R2_00001

For example :

RB500V-40_R2_00001



| Packing Code XX | | | | Version Code X | | Serial number XXXX |
|--------------------------------------|----------------------------|----------------------------------|----------------------------|-----------------------------|----------------------------|---|
| Packing type | 1st Code | Packing size code | 2nd Code | HSF Level | 1st Code | 2nd~5th 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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