



P4SMAJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

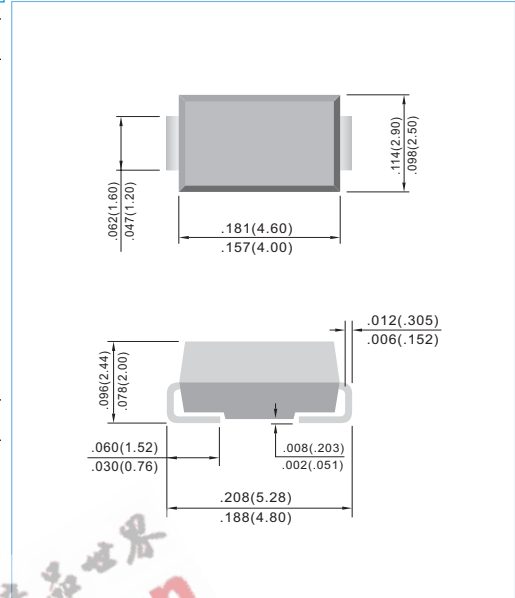
VOLTAGE 5.0 to 220 Volts **PEAK PULSE POWER** 400 Watts **SMA/DO-214AC** Unit: inch (mm)

FEATURES

- For surface mounted applications in order to optimize board space.
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- High temperature soldering : 260°C /10 seconds at terminals
- In compliance with EU RoHS 2002/95/EC directives

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 positive end (cathode)
- Standard Packaging: 12mm tape (EIA-481)
- Weight: 0.002 ounce, 0.064 gram



DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types P4SMAJ5.0 thru types P4SMAJ220.
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 _{PPM} | 400 | Watts |
| Peak Forward Surge Current per Fig.5 (Note 3) | I _{FSM} | 40 | Amps |
| Peak Pulse Current on 10/1000s waveform(Note 1)Fig.2 | I _{PPM} | see Table 1 | Amps |
| Steady State Power Dissipation (NOTE 4) | P _{M(AV)} | 1.0 | Watts |
| 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 $T_A = 25^\circ\text{C}$ per Fig. 2.
2. Mounted on 5.0mm² 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°C = T_L .
5. Peak pulse power waveform is 10/1000uS.



P4SMAJ SERIES

| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage | Peak Pulse Current | Marking Code | |
|--|-------------|---------------------------|----------------------------------|-------|--------------|-----------------------------------|------|--------------------|--------------------|--------------|----|
| | | | V _{BR} @ I _T | | | I _R @ V _{RWM} | | | | | |
| | | | Min. | Max. | | UNI | BI | | | | |
| UNI | BI | V | V | V | mA | μA | μA | V | A | UNI | BI |
| 400W Transient Voltage Suppressor | | | | | | | | | | | |
| P4SMAJ5.0 | P4SMAJ5.0C | 5 | 6.4 | 7.55 | 10 | 800 | 1600 | 9.6 | 41.6 | HD | TD |
| P4SMAJ5.0A | P4SMAJ5.0CA | 5 | 6.4 | 7.25 | 10 | 800 | 1600 | 9.2 | 43.5 | HE | TE |
| P4SMAJ6.0 | P4SMAJ6.0C | 6 | 6.67 | 8.45 | 10 | 800 | 1600 | 11.4 | 35.1 | HF | TF |
| P4SMAJ6.0A | P4SMAJ6.0CA | 6 | 6.67 | 7.67 | 10 | 800 | 1600 | 10.3 | 38.8 | HG | TG |
| P4SMAJ6.5 | P4SMAJ6.5C | 6.5 | 7.22 | 9.14 | 10 | 500 | 1000 | 12.3 | 32.5 | HH | TH |
| P4SMAJ6.5A | P4SMAJ6.5CA | 6.5 | 7.22 | 8.3 | 10 | 500 | 100 | 11.2 | 35.7 | HK | TK |
| P4SMAJ7.0 | P4SMAJ7.0C | 7 | 7.78 | 9.86 | 10 | 200 | 400 | 13.3 | 30.1 | HL | TL |
| P4SMAJ7.0A | P4SMAJ7.0CA | 7 | 7.78 | 8.95 | 10 | 200 | 400 | 12 | 33.3 | HM | TM |
| P4SMAJ7.5 | P4SMAJ7.5C | 7.5 | 8.33 | 10.67 | 1 | 100 | 200 | 14.3 | 28 | HN | TN |
| P4SMAJ7.5A | P4SMAJ7.5CA | 7.5 | 8.33 | 9.58 | 1 | 100 | 200 | 12.9 | 31 | HP | TP |
| P4SMAJ8.0 | P4SMAJ8.0C | 8 | 8.89 | 11.3 | 1 | 50 | 100 | 15 | 26.5 | HQ | TQ |
| P4SMAJ8.0A | P4SMAJ8.0CA | 8 | 8.89 | 10.23 | 1 | 50 | 100 | 13.6 | 29.4 | HR | TR |
| P4SMAJ8.5 | P4SMAJ8.5C | 8.50 | 9.44 | 11.92 | 1 | 10 | 20 | 15.9 | 25.1 | HS | TS |
| P4SMAJ8.5A | P4SMAJ8.5CA | 8.50 | 9.44 | 10.82 | 1 | 10 | 20 | 14.4 | 27.7 | HT | TT |
| P4SMAJ9.0 | P4SMAJ9.0C | 9 | 10 | 12.6 | 1 | 5 | 5 | 16.9 | 23.6 | HU | TU |
| P4SMAJ9.0A | P4SMAJ9.0CA | 9 | 10 | 11.5 | 1 | 5 | 5 | 15.4 | 26 | HV | TV |
| P4SMAJ10 | P4SMAJ10C | 10 | 11.1 | 14.1 | 1 | 5 | 5 | 18.8 | 21.2 | HW | TW |
| P4SMAJ10A | P4SMAJ10CA | 10 | 11.1 | 12.8 | 1 | 5 | 5 | 17 | 23.5 | HX | TX |
| P4SMAJ11 | P4SMAJ11C | 11 | 12.2 | 15.4 | 1 | 5 | 5 | 20.1 | 20 | HY | TY |
| P4SMAJ11A | P4SMAJ11CA | 11 | 12.2 | 14 | 1 | 5 | 5 | 18.2 | 22 | HZ | TZ |
| P4SMAJ12 | P4SMAJ12C | 12 | 13.3 | 16.9 | 1 | 5 | 5 | 22 | 18.1 | ID | UD |
| P4SMAJ12A | P4SMAJ12CA | 12 | 13.3 | 15.3 | 1 | 5 | 5 | 19.9 | 20.1 | IE | UE |
| P4SMAJ13 | P4SMAJ13C | 13 | 14.4 | 18.2 | 1 | 5 | 5 | 23.8 | 16.8 | IF | UF |
| P4SMAJ13A | P4SMAJ13CA | 13 | 14.4 | 16.5 | 1 | 5 | 5 | 21.5 | 18.6 | IG | UG |
| P4SMAJ14 | P4SMAJ14C | 14 | 15.6 | 19.8 | 1 | 5 | 5 | 25.8 | 15.5 | IH | UH |
| P4SMAJ14A | P4SMAJ14CA | 14 | 15.6 | 17.9 | 1 | 5 | 5 | 23.2 | 17.2 | IK | UK |
| P4SMAJ15 | P4SMAJ15C | 15 | 16.7 | 21.1 | 1 | 5 | 5 | 26.9 | 14.8 | IL | UL |
| P4SMAJ15A | P4SMAJ15CA | 15 | 16.7 | 19.2 | 1 | 5 | 5 | 24.4 | 16.4 | IM | UM |
| P4SMAJ16 | P4SMAJ16C | 16 | 17.8 | 22.6 | 1 | 5 | 5 | 28.8 | 13.8 | IN | UN |
| P4SMAJ16A | P4SMAJ16CA | 16 | 17.8 | 20.5 | 1 | 5 | 5 | 26 | 15.3 | IP | UP |
| P4SMAJ17 | P4SMAJ17C | 17 | 18.9 | 23.9 | 1 | 5 | 5 | 30.5 | 13.1 | IQ | UQ |
| P4SMAJ17A | P4SMAJ17CA | 17 | 18.9 | 21.7 | 1 | 5 | 5 | 27.6 | 14.5 | IR | UR |
| P4SMAJ18 | P4SMAJ18C | 18 | 20 | 25.3 | 1 | 5 | 5 | 32.2 | 12.4 | IS | US |
| P4SMAJ18A | P4SMAJ18CA | 18 | 20 | 23.3 | 1 | 5 | 5 | 29.2 | 13.7 | IT | UT |
| P4SMAJ20 | P4SMAJ20C | 20 | 22.2 | 28.1 | 1 | 5 | 5 | 35.8 | 11.1 | IU | UU |
| P4SMAJ20A | P4SMAJ20CA | 20 | 22.2 | 25.5 | 1 | 5 | 5 | 32.4 | 12.3 | IV | UV |
| P4SMAJ22 | P4SMAJ22C | 22 | 24.4 | 30.9 | 1 | 5 | 5 | 39.4 | 10.1 | IW | UW |
| P4SMAJ22A | P4SMAJ22CA | 22 | 24.4 | 28 | 1 | 5 | 5 | 35.5 | 11.2 | IX | UX |
| P4SMAJ24 | P4SMAJ24C | 24 | 26.7 | 33.8 | 1 | 5 | 5 | 43 | 9.3 | IY | UY |
| P4SMAJ24A | P4SMAJ24CA | 24 | 26.7 | 30.7 | 1 | 5 | 5 | 38.9 | 10.3 | IZ | UZ |
| P4SMAJ26 | P4SMAJ26C | 26 | 28.9 | 36.6 | 1 | 5 | 5 | 46.6 | 8.6 | JD | VD |
| P4SMAJ26A | P4SMAJ26CA | 26 | 28.9 | 33.2 | 1 | 5 | 5 | 42.1 | 9.5 | JE | VE |
| P4SMAJ28 | P4SMAJ28C | 28 | 31.1 | 39.4 | 1 | 5 | 5 | 50 | 8 | JF | VF |
| P4SMAJ28A | P4SMAJ28CA | 28 | 31.1 | 35.8 | 1 | 5 | 5 | 45.4 | 8.8 | JG | VG |
| P4SMAJ30 | P4SMAJ30C | 30 | 33.3 | 42.2 | 1 | 5 | 5 | 53.5 | 7.5 | JH | VH |
| P4SMAJ30A | P4SMAJ30CA | 30 | 33.3 | 38.3 | 1 | 5 | 5 | 48.4 | 8.3 | JK | VK |
| P4SMAJ33 | P4SMAJ33C | 33 | 36.7 | 46.5 | 1 | 5 | 5 | 59 | 6.8 | JL | VL |
| P4SMAJ33A | P4SMAJ33CA | 33 | 36.7 | 42.2 | 1 | 5 | 5 | 53.3 | 7.5 | JM | VM |
| P4SMAJ36 | P4SMAJ36C | 36 | 40 | 50.7 | 1 | 5 | 5 | 64.3 | 6.2 | JN | VN |
| P4SMAJ36A | P4SMAJ36CA | 36 | 40 | 46 | 1 | 5 | 5 | 58.1 | 6.9 | JP | VP |
| P4SMAJ40 | P4SMAJ40C | 40 | 44.4 | 56.3 | 1 | 5 | 5 | 71.4 | 5.6 | JQ | VQ |
| P4SMAJ40A | P4SMAJ40CA | 40 | 44.4 | 51.1 | 1 | 5 | 5 | 64.5 | 6.2 | JR | VR |



P4SMAJ SERIES

| Part Number | | Reverse Stand-off Voltage | Breakdown Voltage | | Test Current | Reverse Leakage | | Max. Clamp Voltage | Peak Pulse Current | Marking Code | | |
|--|-------------|---------------------------|-------------------|----------------------------------|--------------|------------------------------------|---|--------------------|--------------------|--------------|----|----|
| | | | V _{VRWM} | V _{BR} @ I _T | | I _R @ V _{VRWM} | | | | | | |
| | | UNI | | BI | V | V | V | mA | μA | | | μA |
| 400W Transient Voltage Suppressor | | | | | | | | | | | | |
| P4SMAJ43 | P4SMAJ43C | 43 | 47.8 | 60.5 | 1 | 5 | 5 | 76.7 | 5.2 | JS | VS | |
| P4SMAJ43A | P4SMAJ43CA | 43 | 47.8 | 54.9 | 1 | 5 | 5 | 69.4 | 5.7 | JT | VT | |
| P4SMAJ45 | P4SMAJ45C | 45 | 50 | 63.3 | 1 | 5 | 5 | 80.3 | 5 | JU | VU | |
| P4SMAJ45A | P4SMAJ45CA | 45 | 50 | 57.5 | 1 | 5 | 5 | 72.7 | 5.5 | JV | VV | |
| P4SMAJ48 | P4SMAJ48C | 48 | 53.3 | 67.5 | 1 | 5 | 5 | 85.5 | 4.7 | JW | VW | |
| P4SMAJ48A | P4SMAJ48CA | 48 | 53.3 | 61.3 | 1 | 5 | 5 | 77.4 | 5.2 | JX | VX | |
| P4SMAJ51 | P4SMAJ51C | 51 | 56.7 | 71.8 | 1 | 5 | 5 | 91.1 | 4.4 | JY | VY | |
| P4SMAJ51A | P4SMAJ51CA | 51 | 56.7 | 65.2 | 1 | 5 | 5 | 82.4 | 4.9 | JZ | VZ | |
| P4SMAJ54 | P4SMAJ54C | 54 | 60 | 76 | 1 | 5 | 5 | 96.3 | 4.2 | RD | WD | |
| P4SMAJ54A | P4SMAJ54CA | 54 | 60 | 69 | 1 | 5 | 5 | 87.1 | 4.6 | RE | WE | |
| P4SMAJ58 | P4SMAJ58C | 58 | 64.4 | 81.6 | 1 | 5 | 5 | 103 | 3.9 | RF | WF | |
| P4SMAJ58A | P4SMAJ58CA | 58 | 64.4 | 74.1 | 1 | 5 | 5 | 93.6 | 4.3 | RG | WG | |
| P4SMAJ60 | P4SMAJ60C | 60 | 66.7 | 84.5 | 1 | 5 | 5 | 107 | 3.7 | RH | WH | |
| P4SMAJ60A | P4SMAJ60CA | 60 | 66.7 | 76.7 | 1 | 5 | 5 | 96.8 | 4.1 | RK | WK | |
| P4SMAJ64 | P4SMAJ64C | 64 | 71.1 | 90.1 | 1 | 5 | 5 | 114 | 3.5 | RL | WL | |
| P4SMAJ64A | P4SMAJ64CA | 64 | 71.1 | 81.8 | 1 | 5 | 5 | 103 | 3.9 | RM | WM | |
| P4SMAJ70 | P4SMAJ70C | 70 | 77.8 | 98.6 | 1 | 5 | 5 | 125 | 3.2 | RN | WN | |
| P4SMAJ70A | P4SMAJ70CA | 70 | 77.8 | 89.5 | 1 | 5 | 5 | 113 | 3.5 | RP | WP | |
| P4SMAJ75 | P4SMAJ75C | 75 | 83.3 | 105.7 | 1 | 5 | 5 | 134 | 3 | RQ | WQ | |
| P4SMAJ75A | P4SMAJ75CA | 75 | 83.3 | 95.8 | 1 | 5 | 5 | 121 | 3.3 | RR | WR | |
| P4SMAJ78 | P4SMAJ78C | 78 | 86.7 | 109.8 | 1 | 5 | 5 | 139 | 2.9 | RS | WS | |
| P4SMAJ78A | P4SMAJ78CA | 78 | 86.7 | 99.7 | 1 | 5 | 5 | 126 | 2.2 | RT | WT | |
| P4SMAJ85 | P4SMAJ85C | 85 | 94.4 | 119.2 | 1 | 5 | 5 | 151 | 2.6 | RU | WU | |
| P4SMAJ85A | P4SMAJ85CA | 85 | 94.4 | 108.2 | 1 | 5 | 5 | 137 | 2.9 | RV | WV | |
| P4SMAJ90 | P4SMAJ90C | 90 | 100 | 126.5 | 1 | 5 | 5 | 160 | 2.5 | RW | WW | |
| P4SMAJ90A | P4SMAJ90CA | 90 | 100 | 115.5 | 1 | 5 | 5 | 146 | 2.7 | RX | WX | |
| P4SMAJ100 | P4SMAJ100C | 100 | 111 | 141 | 1 | 5 | 5 | 179 | 2.2 | RY | WY | |
| P4SMAJ100A | P4SMAJ100CA | 100 | 111 | 128 | 1 | 5 | 5 | 162 | 2.5 | RZ | WZ | |
| P4SMAJ110 | P4SMAJ110C | 110 | 122 | 154.5 | 1 | 5 | 5 | 196 | 2 | SD | XD | |
| P4SMAJ110A | P4SMAJ110CA | 110 | 122 | 140.5 | 1 | 5 | 5 | 177 | 2.3 | SE | XE | |
| P4SMAJ120 | P4SMAJ120C | 120 | 133 | 169 | 1 | 5 | 5 | 214 | 1.9 | SF | XF | |
| P4SMAJ120A | P4SMAJ120CA | 120 | 133 | 153 | 1 | 5 | 5 | 193 | 2 | SG | XG | |
| P4SMAJ130 | P4SMAJ130C | 130 | 144 | 182.5 | 1 | 5 | 5 | 231 | 1.7 | SH | XH | |
| P4SMAJ130A | P4SMAJ130CA | 130 | 144 | 165.5 | 1 | 5 | 5 | 209 | 1.9 | SK | XK | |
| P4SMAJ150 | P4SMAJ150C | 150 | 167 | 211.5 | 1 | 5 | 5 | 268 | 1.5 | SL | XL | |
| P4SMAJ150A | P4SMAJ150CA | 150 | 167 | 192.5 | 1 | 5 | 5 | 243 | 1.6 | SM | XM | |
| P4SMAJ160 | P4SMAJ160C | 160 | 178 | 226 | 1 | 5 | 5 | 287 | 1.4 | SN | XN | |
| P4SMAJ160A | P4SMAJ160CA | 160 | 178 | 205 | 1 | 5 | 5 | 259 | 1.5 | SP | XP | |
| P4SMAJ170 | P4SMAJ170C | 170 | 189 | 239.5 | 1 | 5 | 5 | 304 | 1.3 | SQ | XQ | |
| P4SMAJ170A | P4SMAJ170CA | 170 | 189 | 217.5 | 1 | 5 | 5 | 275 | 1.4 | SR | XR | |
| P4SMAJ180 | P4SMAJ180C | 180 | 198 | 253.8 | 1 | 5 | 5 | 322 | 1.2 | SS | YS | |
| P4SMAJ180A | P4SMAJ180CA | 180 | 198 | 230.4 | 1 | 5 | 5 | 292 | 1.3 | ST | YT | |
| P4SMAJ190 | P4SMAJ190C | 190 | 209 | 267.9 | 1 | 5 | 5 | 340 | 1.2 | SU | YU | |
| P4SMAJ190A | P4SMAJ190CA | 190 | 209 | 243.2 | 1 | 5 | 5 | 308 | 1.3 | SV | YV | |
| P4SMAJ200 | P4SMAJ200C | 200 | 220 | 282 | 1 | 5 | 5 | 358 | 1.1 | SW | YW | |
| P4SMAJ200A | P4SMAJ200CA | 200 | 220 | 256 | 1 | 5 | 5 | 324 | 1.2 | SX | YX | |
| P4SMAJ210 | P4SMAJ210C | 210 | 231 | 296.1 | 1 | 5 | 5 | 376 | 1.1 | SY | YY | |
| P4SMAJ210A | P4SMAJ210CA | 210 | 231 | 268.8 | 1 | 5 | 5 | 340 | 1.2 | SZ | YZ | |
| P4SMAJ220 | P4SMAJ220C | 220 | 242 | 310.2 | 1 | 5 | 5 | 394 | 1 | GD | ZD | |
| P4SMAJ220A | P4SMAJ220CA | 220 | 242 | 281.6 | 1 | 5 | 5 | 356 | 1.1 | GE | ZE | |



P4SMAJ SERIES

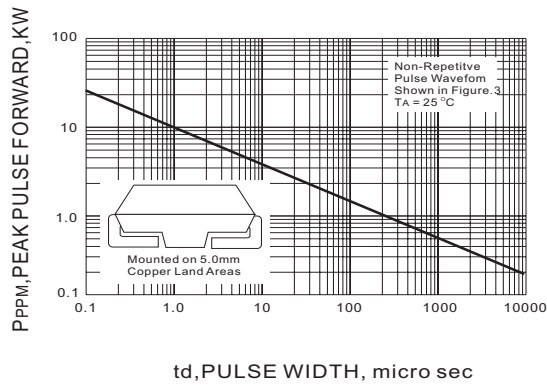


Fig.1 PEAK PULSE POWER RATING CURVE

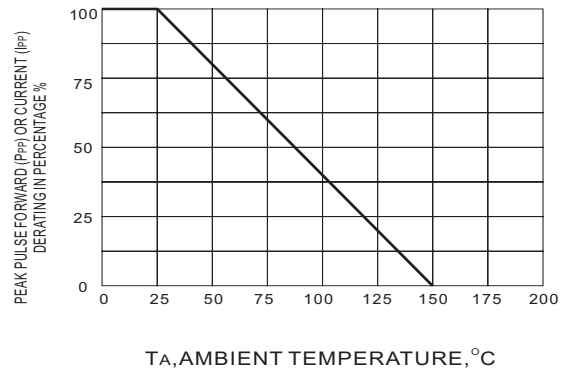


Fig.2 DERATING CURVE

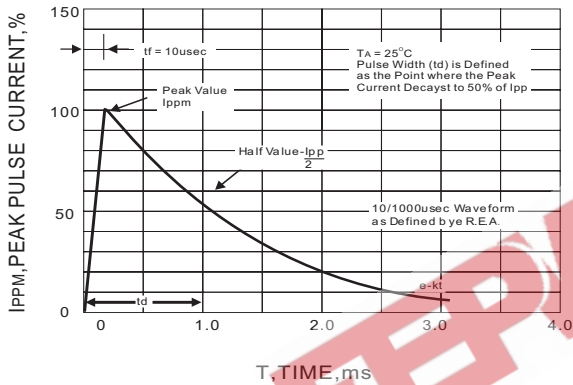


Fig.3 PULSE WAVEFORM

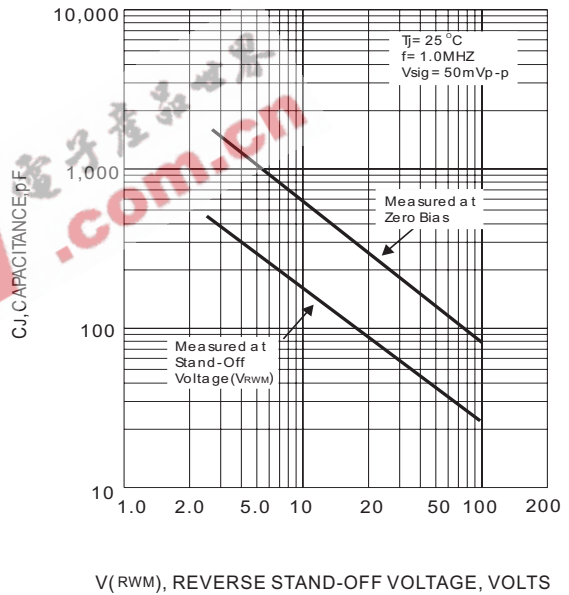


Fig.4 TYPICAL JUNCTION CAPACITANCE

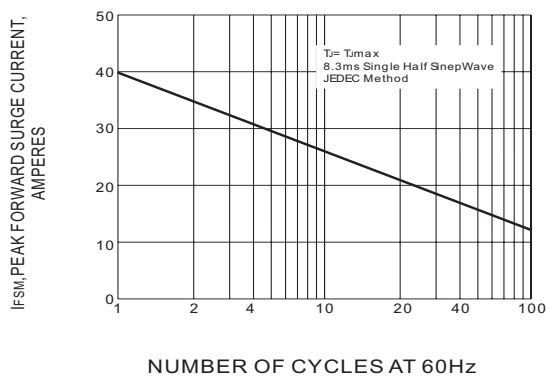


Fig.5 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

PLEASE REFER THE TVS APPLICATION NOTE IN PANJIT WEBSITE

<http://www.panjit.com/protection-transient-voltage-suppressors.html>

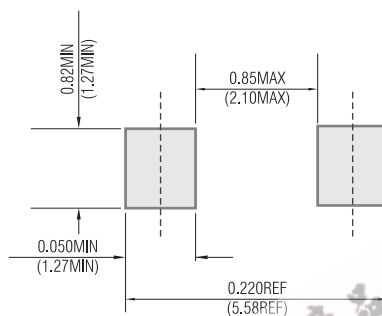


P4SMAJ SERIES

MOUNTING PAD LAYOUT

SMA/DO-214AC

Unit: inch (mm)



ORDER INFORMATION

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

LEGAL STATEMENT

Copyright PanJit International, Inc 2007

The information presented in this document is believed to be accurate and reliable. The specifications and information herein are subject to change without notice. Pan Jit makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose. Pan Jit products are not authorized for use in life support devices or systems. Pan Jit does not convey any license under its patent rights or rights of others.