

## P4SMAJ5.0A-AU ~ P4SMAJ70CA-AU Series

### SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

**Voltage** 5~70 V **Power** 400 W

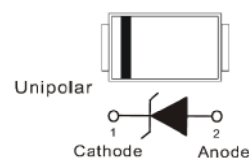
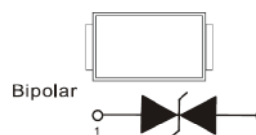
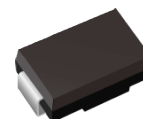
#### Features

- ISO10605(C=330 pF,R=330Ω):  $\pm 30\text{kV}$  Air,  $\pm 30\text{kV}$  Contact
- HBM  $\geq \pm 8\text{ kV}$  & CDM  $\geq \pm 2\text{ kV}$
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

#### Mechanical Data

- Case: Molded plastic, SMA
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0024 ounces, 0.068 grams

SMA



### Maximum Ratings and Thermal Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

| PARAMETER                                                         | SYMBOL                | LIMIT       | UNITS              |
|-------------------------------------------------------------------|-----------------------|-------------|--------------------|
| Peak Pulse Power Dissipation( $t_p=10/1000\mu\text{s}$ )          | $P_{PP}^{(1)(2)}$     | 400         | W                  |
| Power Dissipation on Infinite Heat Sink at $T_L=50^\circ\text{C}$ | $P_D$                 | 3.3         | W                  |
| Peak Forward Surge Current(8.3ms single half sine-wave)           | $I_{FSM}$             | 40          | A                  |
| Peak Pulse Current on $t_p=10/1000\mu\text{s}$ waveform(Fig.2)    | $I_{PPM}^{(1)}$       | See table 1 | A                  |
| ISO10605(C=330pF, R=330Ω) (Air)                                   | $V_{ESD}$             | $\pm 30$    | kV                 |
| ISO10605(C=330pF, R=330Ω) (Contact)                               |                       | $\pm 30$    |                    |
| Typical Thermal Resistance Junction to Ambient                    | $R_{\theta JA}^{(3)}$ | 70          | $^\circ\text{C/W}$ |
| Operating Junction Temperature Range                              | $T_J$                 | -55~150     | $^\circ\text{C}$   |
| Storage Temperature Range                                         | $T_{STG}$             | -55~150     | $^\circ\text{C}$   |



## P4SMAJ5.0A-AU ~ P4SMAJ70CA-AU Series

### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

| Part Number                       |                | V <sub>RWM</sub> | V <sub>BR</sub> |      |                | I <sub>R</sub>          |      | V <sub>C@I<sub>PP</sub></sub> |      | Marking<br>Code |    |
|-----------------------------------|----------------|------------------|-----------------|------|----------------|-------------------------|------|-------------------------------|------|-----------------|----|
|                                   |                |                  | Min.            | Max. | I <sub>T</sub> | @V <sub>RWM</sub><br>uA |      |                               |      |                 |    |
| UNI                               | BI             | V                | V               | V    | mA             | UNI                     | BI   | V                             | A    | UNI             | BI |
| 400W Transient Voltage Suppressor |                |                  |                 |      |                |                         |      |                               |      |                 |    |
| P4SMAJ5.0A-AU                     | P4SMAJ5.0CA-AU | 5                | 6.4             | 7    | 10             | 800                     | 1600 | 9.2                           | 43.5 | HE              | TE |
| P4SMAJ6.0A-AU                     | P4SMAJ6.0CA-AU | 6                | 6.67            | 7.37 | 10             | 800                     | 1600 | 10.3                          | 38.8 | HG              | TG |
| P4SMAJ6.5A-AU                     | P4SMAJ6.5CA-AU | 6.5              | 7.22            | 7.98 | 10             | 500                     | 1000 | 11.2                          | 35.7 | HK              | TK |
| P4SMAJ7.0A-AU                     | P4SMAJ7.0CA-AU | 7                | 7.78            | 8.6  | 10             | 200                     | 400  | 12                            | 33.3 | HM              | TM |
| P4SMAJ7.5A-AU                     | P4SMAJ7.5CA-AU | 7.5              | 8.33            | 9.21 | 1              | 100                     | 200  | 12.9                          | 31   | HP              | TP |
| P4SMAJ8.0A-AU                     | P4SMAJ8.0CA-AU | 8                | 8.89            | 9.83 | 1              | 50                      | 100  | 13.6                          | 29.4 | HR              | TR |
| P4SMAJ8.5A-AU                     | P4SMAJ8.5CA-AU | 8.5              | 9.44            | 10.4 | 1              | 10                      | 20   | 14.4                          | 27.7 | HT              | TT |
| P4SMAJ9.0A-AU                     | P4SMAJ9.0CA-AU | 9                | 10              | 11.1 | 1              | 5                       | 5    | 15.4                          | 26   | HV              | TV |
| P4SMAJ10A-AU                      | P4SMAJ10CA-AU  | 10               | 11.1            | 12.3 | 1              | 5                       | 5    | 17                            | 23.5 | HX              | TX |
| P4SMAJ11A-AU                      | P4SMAJ11CA-AU  | 11               | 12.2            | 13.5 | 1              | 1                       | 1    | 18.2                          | 22   | HZ              | TZ |
| P4SMAJ12A-AU                      | P4SMAJ12CA-AU  | 12               | 13.3            | 14.7 | 1              | 1                       | 1    | 19.9                          | 20.1 | IE              | UE |
| P4SMAJ13A-AU                      | P4SMAJ13CA-AU  | 13               | 14.4            | 15.9 | 1              | 1                       | 1    | 21.5                          | 18.6 | IG              | UG |
| P4SMAJ14A-AU                      | P4SMAJ14CA-AU  | 14               | 15.6            | 17.2 | 1              | 1                       | 1    | 23.2                          | 17.2 | IK              | UK |
| P4SMAJ15A-AU                      | P4SMAJ15CA-AU  | 15               | 16.7            | 18.5 | 1              | 1                       | 1    | 24.4                          | 16.4 | IM              | UM |
| P4SMAJ16A-AU                      | P4SMAJ16CA-AU  | 16               | 17.8            | 19.7 | 1              | 1                       | 1    | 26                            | 15.3 | IP              | UP |
| P4SMAJ17A-AU                      | P4SMAJ17CA-AU  | 17               | 18.9            | 20.9 | 1              | 1                       | 1    | 27.6                          | 14.5 | IR              | UR |
| P4SMAJ18A-AU                      | P4SMAJ18CA-AU  | 18               | 20              | 22.1 | 1              | 1                       | 1    | 29.2                          | 13.7 | IT              | UT |
| P4SMAJ20A-AU                      | P4SMAJ20CA-AU  | 20               | 22.2            | 24.5 | 1              | 1                       | 1    | 32.4                          | 12.3 | IV              | UV |
| P4SMAJ22A-AU                      | P4SMAJ22CA-AU  | 22               | 24.4            | 26.9 | 1              | 1                       | 1    | 35.5                          | 11.2 | IX              | UX |
| P4SMAJ24A-AU                      | P4SMAJ24CA-AU  | 24               | 26.7            | 29.5 | 1              | 1                       | 1    | 38.9                          | 10.3 | IZ              | UZ |
| P4SMAJ26A-AU                      | P4SMAJ26CA-AU  | 26               | 28.9            | 31.9 | 1              | 1                       | 1    | 42.1                          | 9.5  | JE              | VE |
| P4SMAJ28A-AU                      | P4SMAJ28CA-AU  | 28               | 31.1            | 34.4 | 1              | 1                       | 1    | 45.4                          | 8.8  | JG              | VG |
| P4SMAJ30A-AU                      | P4SMAJ30CA-AU  | 30               | 33.3            | 36.8 | 1              | 1                       | 1    | 48.4                          | 8.3  | JK              | VK |
| P4SMAJ33A-AU                      | P4SMAJ33CA-AU  | 33               | 36.7            | 40.6 | 1              | 1                       | 1    | 53.3                          | 7.5  | JM              | VM |
| P4SMAJ36A-AU                      | P4SMAJ36CA-AU  | 36               | 40              | 44.2 | 1              | 1                       | 1    | 58.1                          | 6.9  | JP              | VP |
| P4SMAJ40A-AU                      | P4SMAJ40CA-AU  | 40               | 44.4            | 49.1 | 1              | 1                       | 1    | 64.5                          | 6.2  | JR              | VR |
| P4SMAJ43A-AU                      | P4SMAJ43CA-AU  | 43               | 47.8            | 52.8 | 1              | 1                       | 1    | 69.4                          | 5.7  | JT              | VT |
| P4SMAJ45A-AU                      | P4SMAJ45CA-AU  | 45               | 50              | 55.3 | 1              | 1                       | 1    | 72.7                          | 5.5  | JV              | VV |
| P4SMAJ48A-AU                      | P4SMAJ48CA-AU  | 48               | 53.3            | 58.9 | 1              | 1                       | 1    | 77.4                          | 5.2  | JX              | VX |
| P4SMAJ51A-AU                      | P4SMAJ51CA-AU  | 51               | 56.7            | 62.7 | 1              | 1                       | 1    | 82.4                          | 4.9  | JZ              | VZ |



## P4SMAJ5.0A-AU ~ P4SMAJ70CA-AU Series

### Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

| Part Number                       |               | V <sub>RWM</sub> | V <sub>BR</sub> |      |                | I <sub>R</sub>    |    | V <sub>C</sub> @I <sub>PP</sub> |     | Marking<br>Code |    |
|-----------------------------------|---------------|------------------|-----------------|------|----------------|-------------------|----|---------------------------------|-----|-----------------|----|
|                                   |               |                  | Min.            | Max. | I <sub>T</sub> | @V <sub>RWM</sub> | uA |                                 |     |                 |    |
| UNI                               | BI            | V                | V               | V    | mA             | UNI               | BI | V                               | A   | UNI             | BI |
| 400W Transient Voltage Suppressor |               |                  |                 |      |                |                   |    |                                 |     |                 |    |
| P4SMAJ54A-AU                      | P4SMAJ54CA-AU | 54               | 60              | 66.3 | 1              | 1                 | 1  | 87.1                            | 4.6 | RE              | WE |
| P4SMAJ58A-AU                      | P4SMAJ58CA-AU | 58               | 64.4            | 71.2 | 1              | 1                 | 1  | 93.6                            | 4.3 | RG              | WG |
| P4SMAJ60A-AU                      | P4SMAJ60CA-AU | 60               | 66.7            | 73.7 | 1              | 1                 | 1  | 96.8                            | 4.1 | RK              | WK |
| P4SMAJ64A-AU                      | P4SMAJ64CA-AU | 64               | 71.1            | 78.6 | 1              | 1                 | 1  | 103                             | 3.9 | RM              | WM |
| P4SMAJ70A-AU                      | P4SMAJ70CA-AU | 70               | 77.8            | 86   | 1              | 1                 | 1  | 113                             | 3.5 | RP              | WP |

Note:

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2
2. Mounted on 5mm<sup>2</sup> copper pads to each terminal
3. Mounted on a FR4 PCB, single-sided copper, mini pad

## P4SMAJ5.0A-AU ~ P4SMAJ70CA-AU Series

### TYPICAL CHARACTERISTIC CURVES

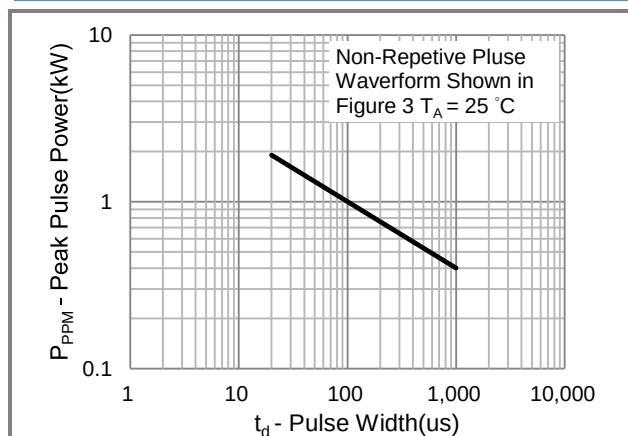


Fig.1 Pulse Power Rating Curve

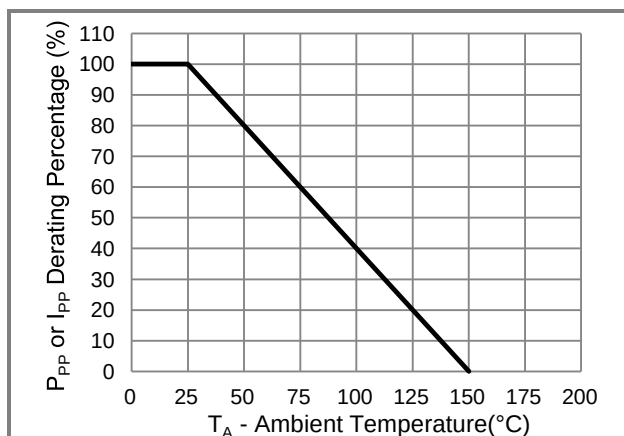


Fig.2 Derating Curve

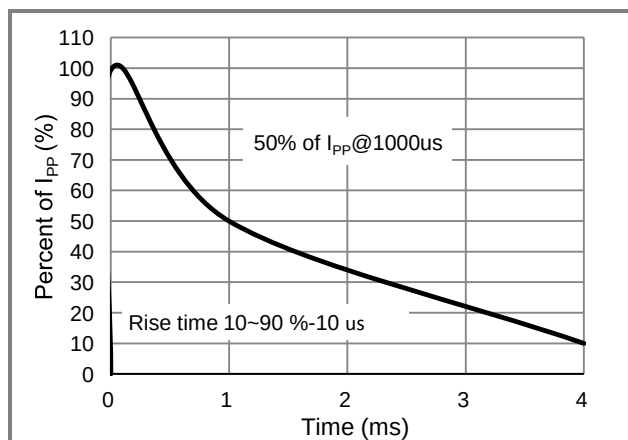


Fig.3 10/1000us Pulse Waveform

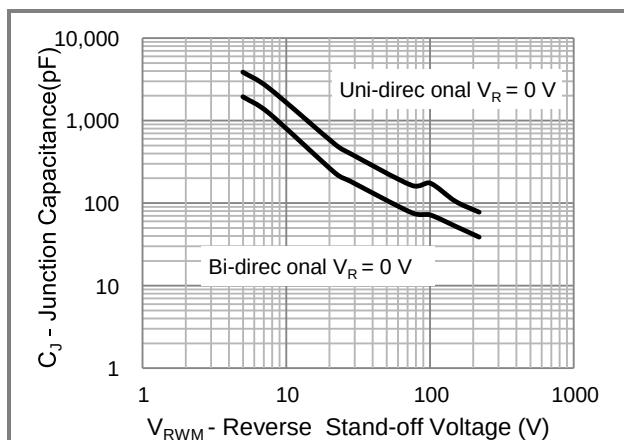


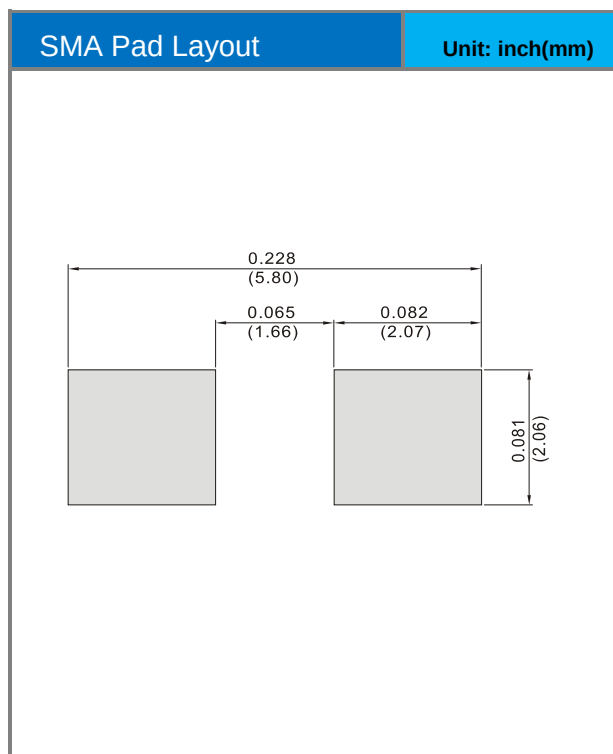
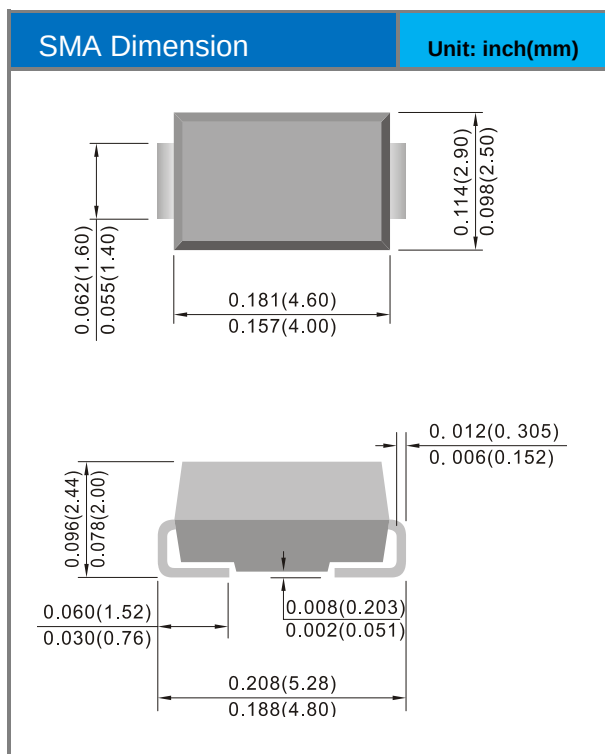
Fig.4 Typical Capacitance

## P4SMAJ5.0A-AU ~ P4SMAJ70CA-AU Series

### Part No Packing Code Version

| Part No Packing Code   | Package Type | Packing Type        | Marking   | Version      |
|------------------------|--------------|---------------------|-----------|--------------|
| P4SMAJxxxx-AU_R2_000A1 | SMA          | 7.5K pcs / 13" reel | See Table | Halogen free |

### Packaging Information & Mounting Pad Layout





## **P4SMAJ5.0A-AU ~ P4SMAJ70CA-AU Series**

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