



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

## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

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

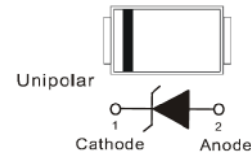
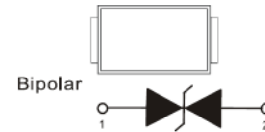
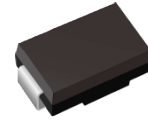
### Features

- ISO10605(C=330 pF,R=330Ω): ± 30kV Air, ± 30kV Contact
- HBM ≥ ± 8 kV & CDM ≥ ± 2 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<sub>A</sub>=25°C unless otherwise noted)

| PARAMETER   | SYMBOL                             | LIMIT       | UNITS |
|---|------------------------------------|-------------|-------|
| Peak Pulse Power Dissipation(tp=10/1000us)                      | P <sub>PP</sub> <sup>(1) (2)</sup> | 400         | W     |
| Power Dissipation on Infinite Heat Sink at T <sub>L</sub> =50°C | P <sub>D</sub>                     | 3.3         | W     |
| Peak Forward Surge Current(8.3ms single half sine-wave)         | I <sub>FSM</sub>                   | 40          | A     |
| Peak Pulse Current on tp=10/1000us waveform(Fig.2)              | I <sub>PPM</sub> <sup>(1)</sup>    | See table 1 | A     |
| ISO10605(C=330pF, R=330Ω) (Air)                                 | V <sub>ESD</sub>                   | ±30         | kV    |
| ISO10605(C=330pF, R=330Ω) (Contact)                             |                                    | ±30         |       |
| Typical Thermal Resistance Junction to Ambient                  | R <sub>θJA</sub> <sup>(3)</sup>    | 70          | °C/W  |
| Operating Junction Temperature Range                            | T <sub>J</sub>                     | -55~150     | °C    |
| Storage Temperature Range                                       | T <sub>STG</sub>                   | -55~150     | °C    |



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### 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@IPP</sub> |      | Marking Code |    |
|-----------------------------------|----------------|------------------|-----------------|------|----------------|-------------------|------|--------------------|------|--------------|----|
|                                   |                |                  | Min.            | Max. | I <sub>T</sub> | @V <sub>RWM</sub> |      |                    |      |              |    |
| 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><br>@V <sub>RWM</sub> |    | V <sub>C</sub> @I <sub>PP</sub> |     | Marking<br>Code |    |
|-----------------------------------|---------------|------------------|-----------------|------|----------------|-------------------------------------|----|---------------------------------|-----|-----------------|----|
|                                   |               |                  | Min.            | Max. | I <sub>T</sub> | uA                                  |    | V                               | A   | UNI             | BI |
| 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



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## TYPICAL CHARACTERISTIC CURVES

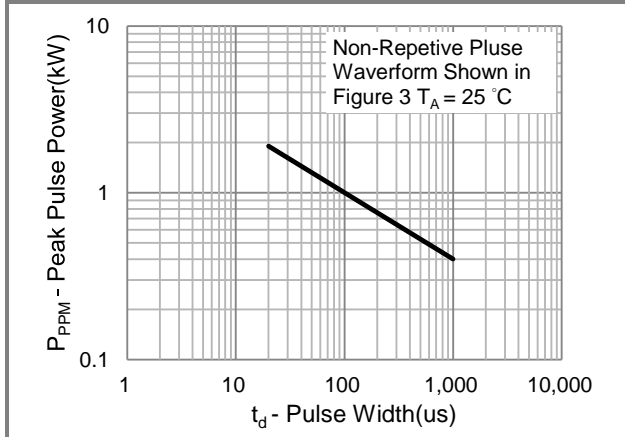


Fig.1 Pulse Power Rating Curve



Fig.2 Derating Curve

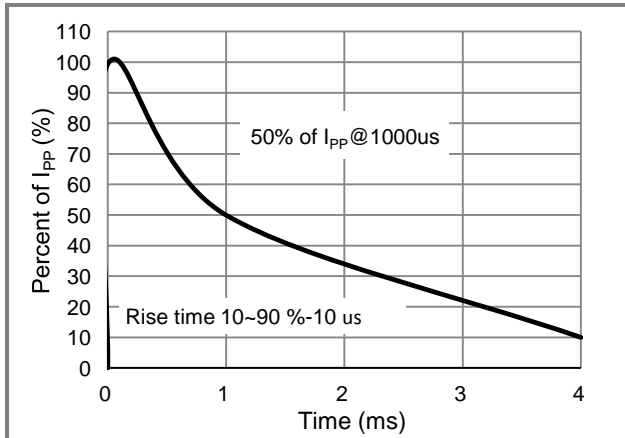


Fig.3 10/1000us Pulse Waveform



Fig.4 Typical Capacitance



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### 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

