



# SM8S14A-AU ~ SM8S48A-AU Series

## 6.6kW SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

**Stand-Off Voltage**

**14~48V**

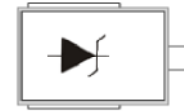
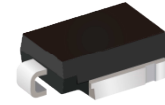
DO-218AB

### Features

- ISO10605(C=330 pF,R=330Ω): ± 30kV Air, ± 30kV Contact
- HBM ≥ ± 8 kV & CDM ≥ ± 2 kV
- Rated for load dump protection in automotive applications
- Meets ISO 7637-2 / ISO16750-2 Surge specification (varies by test condition)
- Meets MSL Level 1 per J-STD-020
- 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, DO-218AB
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.099 ounces, 2.821 grams



### Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

| PARAMETER   | SYMBOL                           | LIMIT   | UNITS |
|---|----------------------------------|---------|-------|
| 10/1,000us Peak Pulse Power Dissipation on T <sub>A</sub> = 25 °C<br>(Note 1) | P <sub>PPM1</sub>                | 6600    | W     |
| 10/10,000us Peak Pulse Power Dissipation on T <sub>A</sub> = 25 °C            | P <sub>PPM2</sub>                | 5200    | W     |
| Peak Surge Current (60Hz half wave)   | I <sub>FSM</sub>                 | 700     | A     |
| Typical Thermal Resistance Junction to Case                                   | R <sub>θJC</sub>                 | 0.9     | °C/W  |
| Power Dissipation on infinite heatsink T <sub>C</sub> = 25 °C                 | P <sub>D</sub>                   | 8       | W     |
| ISO10605(C=330 pF,R=330Ω) Contact   | V <sub>ESD</sub>                 | 30      | kV    |
| ISO10605(C=330 pF,R=330Ω) Air   | V <sub>ESD</sub>                 | 30      | kV    |
| Operating and Storage Temperature Range                                       | T <sub>J</sub> ,T <sub>STG</sub> | -55~175 | °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> |      |                | Reverse Leakage                  |  | V <sub>C</sub> @I <sub>PP</sub> (Note 1) |     | Marking Code |
|------------------------------------|------------------|-----------------|------|----------------|----------------------------------|--|--|-----|--------------|
|                                    |                  | Min.            | Max. | I <sub>T</sub> | I <sub>R</sub> @V <sub>RWM</sub> | I <sub>R</sub> @V <sub>RWM</sub><br>T <sub>J</sub> =175 °C | V  | A   |              |
|                                    | V                | V               | V    | mA             | uA                               | uA   | V  | A   |              |
| 6600W Transient Voltage Suppressor |                  |                 |      |                |                                  |  |  |     |              |
| SM8S14A-AU                         | 14               | 15.6            | 17.2 | 5              | 1                                | 150  | 23.2                                     | 284 | 6EJG         |
| SM8S15A-AU                         | 15               | 16.7            | 18.5 | 5              | 1                                | 150  | 24.4                                     | 270 | 6EJH         |
| SM8S16A-AU                         | 16               | 17.8            | 19.7 | 5              | 1                                | 150  | 26                                       | 254 | 6EJK         |
| SM8S17A-AU                         | 17               | 18.9            | 20.9 | 5              | 1                                | 150  | 27.6                                     | 239 | 6EJL         |
| SM8S18A-AU                         | 18               | 20              | 22.1 | 5              | 0.5                              | 150  | 29.2                                     | 226 | 6EJM         |
| SM8S20A-AU                         | 20               | 22.2            | 24.5 | 5              | 0.5                              | 150  | 32.4                                     | 204 | 6EJN         |
| SM8S22A-AU                         | 22               | 24.4            | 26.9 | 5              | 0.5                              | 150  | 35.5                                     | 186 | 6EJP         |
| SM8S24A-AU                         | 24               | 26.7            | 29.5 | 5              | 0.5                              | 150  | 38.9                                     | 170 | 6EJQ         |
| SM8S26A-AU                         | 26               | 28.9            | 31.9 | 5              | 0.5                              | 150  | 42.1                                     | 157 | 6EJR         |
| SM8S28A-AU                         | 28               | 31.1            | 34.4 | 5              | 0.5                              | 150  | 45.4                                     | 145 | 6EJS         |
| SM8S30A-AU                         | 30               | 33.3            | 36.8 | 5              | 0.5                              | 150  | 48.4                                     | 136 | 6EJY         |
| SM8S33A-AU                         | 33               | 36.7            | 40.6 | 5              | 0.5                              | 150  | 53.3                                     | 124 | 6EJT         |
| SM8S36A-AU                         | 36               | 40              | 44.2 | 5              | 0.5                              | 150  | 58.1                                     | 114 | 6EJU         |
| SM8S40A-AU                         | 40               | 44.4            | 49.1 | 5              | 0.5                              | 150  | 64.5                                     | 102 | 6EJV         |
| SM8S43A-AU                         | 43               | 47.8            | 52.8 | 5              | 0.5                              | 150  | 69.4                                     | 95  | 6EJW         |
| SM8S48A-AU                         | 48               | 53.3            | 58.7 | 5              | 0.5                              | 150  | 80.6                                     | 82  | 6EJX         |

**NOTES:**

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.1
2. TVS is a transient protection device, it is strongly recommended not to use as a Zener.



# SM8S14A-AU ~ SM8S48A-AU Series

## TYPICAL CHARACTERISTIC CURVES

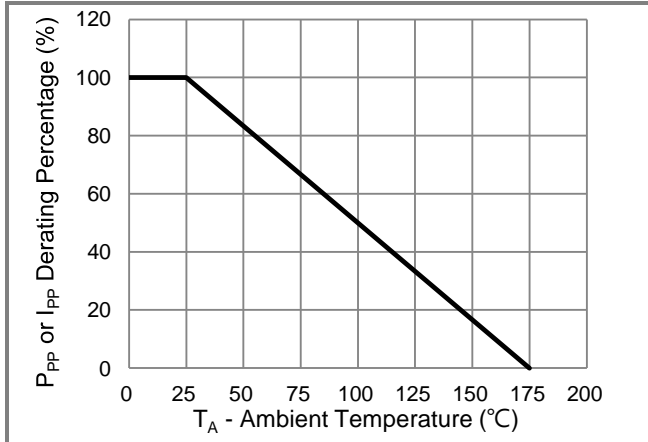


Fig.1 Pulse Power Rating Curve

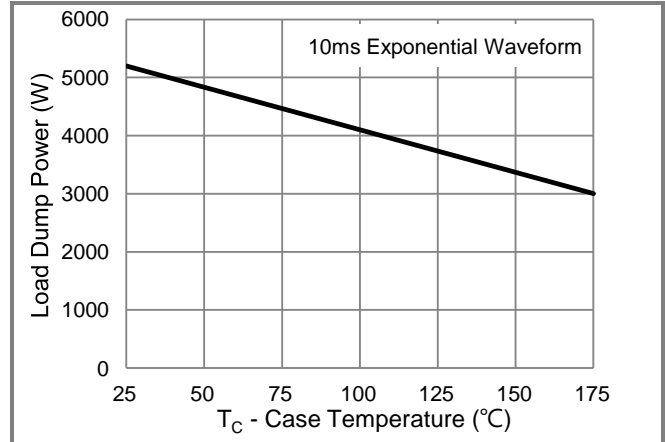


Fig.2 Load Dump Power Characteristics

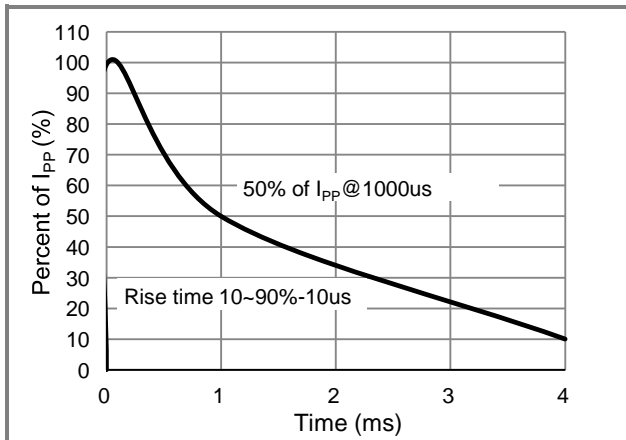


Fig.3 Pulse Waveform

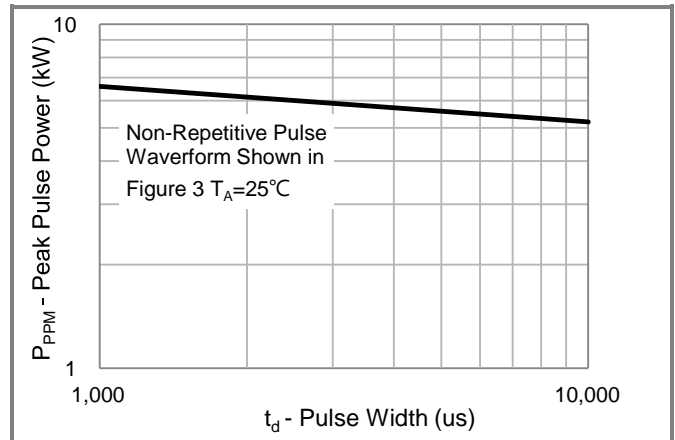


Fig.4 Peak Pulse Power Rating Curve

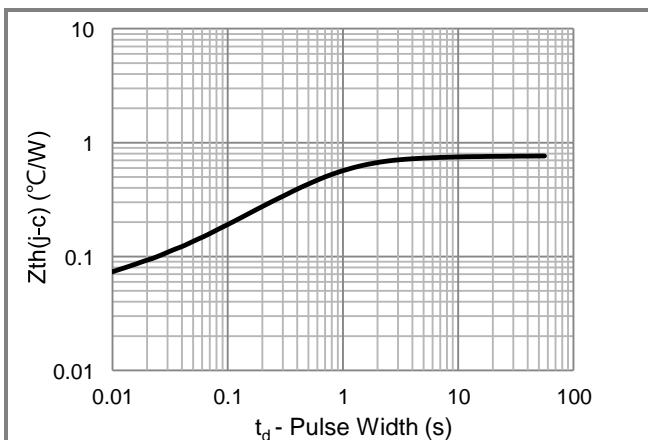


Fig.5 Typical Transient Thermal Impedance

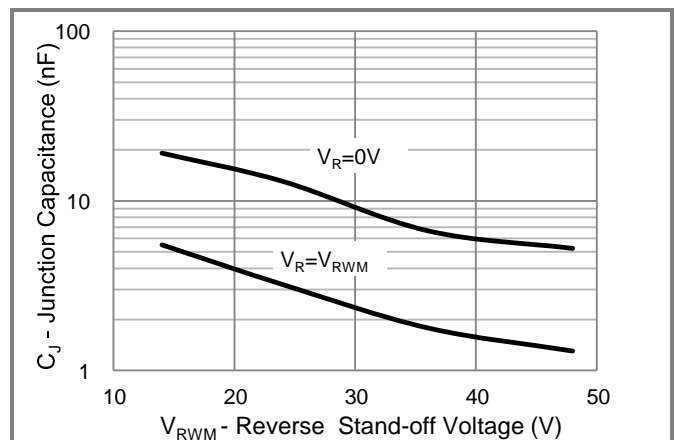


Fig.6 Typical Capacitance



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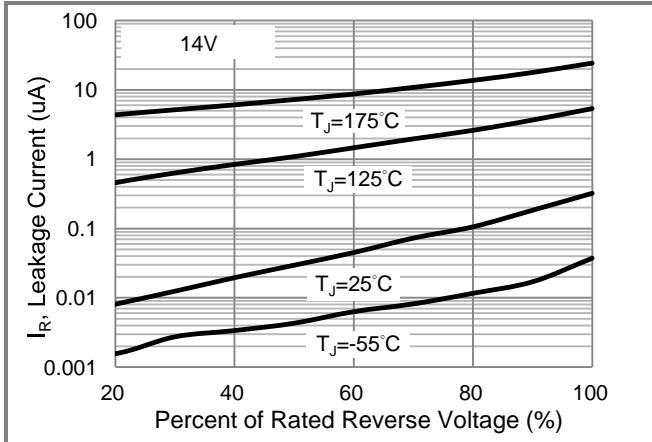


Fig.7 Typical Reverse Characteristics

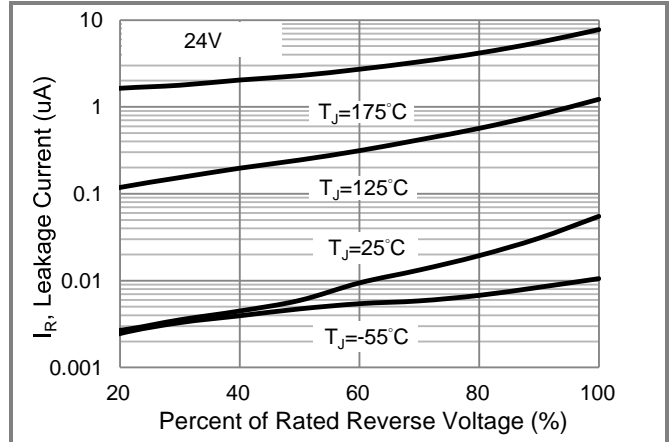


Fig.8 Typical Reverse Characteristics

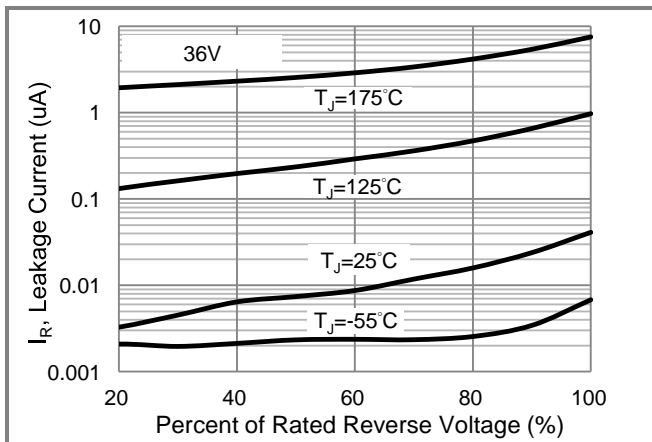


Fig.9 Typical Reverse Characteristics

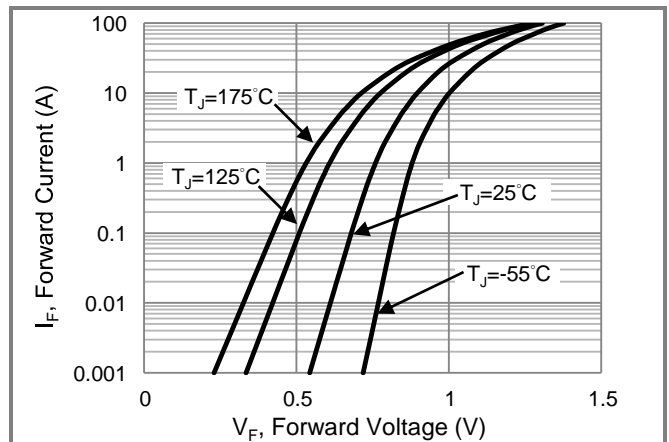


Fig.10 Typical Forward Characteristics

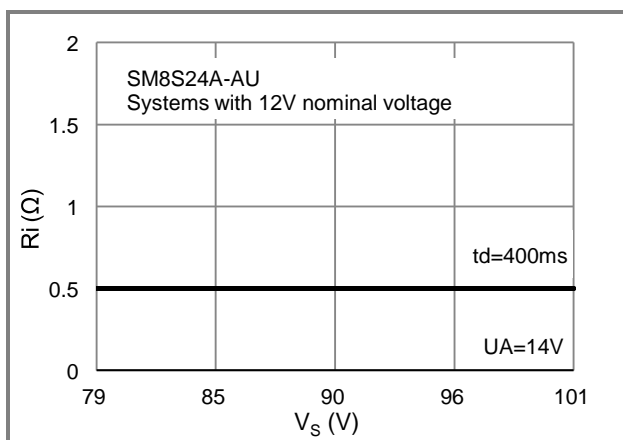


Fig.11 ISO-16750-2 TYPE A

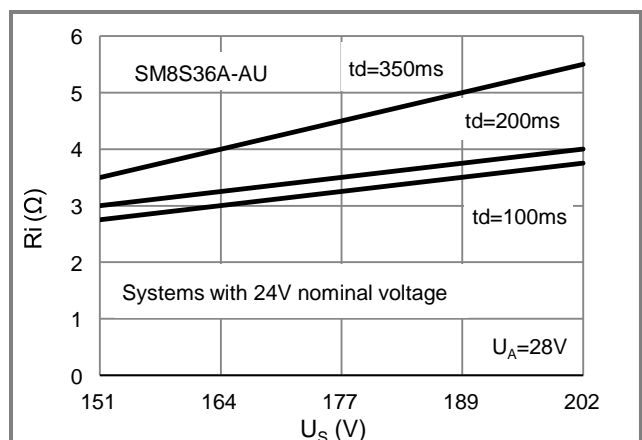


Fig.12 ISO-16750-2 TYPE A



## SM8S14A-AU ~ SM8S48A-AU Series

Part No. Packing Code Version

| Part No. Packing Code | Package Type | Packing Type       | Marking   | Version      |
|-----------------------|--------------|--------------------|-----------|--------------|
| SM8SxxA-AU_R2_000A1   | DO-218AB     | 600 pcs / 13" reel | See Table | Halogen free |

### Packaging Information & Mounting Pad Layout

