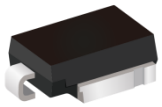
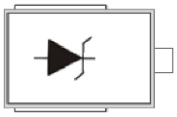
# SM5S14A-AU ~ SM5S48A-AU Series

## 3.6kW 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 ($T_A$ = 25 °C unless otherwise noted)

| PARAMETER | SYMBOL | LIMIT | UNIT |
|---|---|---|---|
| 10/1,000us Peak Pulse Power Dissipation on $T_A$ = 25 °C (Note 1) | $P_{PPM1}$ | 3600 | W |
| 10/10,000us Peak Pulse Power Dissipation on $T_A$ = 25 °C | $P_{PPM2}$ | 2800 | W |
| Peak Surge Current (60Hz half wave) | $I_{FSM}$ | 500 | A |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | 1 | °C/W |
| Power Dissipation on infinite heatsink $T_C$ = 25 °C | $P_D$ | 5 | W |
| ISO10605(C=330 pF,R=330Ω) Contact | $V_{ESD}$ | 30 | kV |
| ISO10605(C=330 pF,R=330Ω) Air | $V_{ESD}$ | 30 | kV |
| Operating and Storage Temperature Range | $T_J$,$T_{STG}$ | -55~175 | °C |

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## Electrical Characteristics ($T_A$ = 25 °C unless otherwise noted)

| Part Number | $V_{RWM}$ | $V_{BR}$ | | | Reverse Leakage | | $V_C$@$I_{PP}$ (Note 1) | | Marking Code |
|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | $I_T$ | $I_R$@$V_{RWM}$ | $I_R$@$V_{RWM}$ $T_J$=175 °C | | | |
| | V | V | V | mA | uA | uA | V | A | |
| 3600W Transient Voltage Suppressor | | | | | | | | | |
| SM5S14A-AU | 14 | 15.6 | 17.2 | 5 | 1 | 150 | 23.2 | 155 | 6ENM |
| SM5S15A-AU | 15 | 16.7 | 18.5 | 5 | 1 | 150 | 24.4 | 148 | 6ENN |
| SM5S16A-AU | 16 | 17.8 | 19.7 | 5 | 1 | 150 | 26 | 138 | 6ENP |
| SM5S17A-AU | 17 | 18.9 | 20.9 | 5 | 1 | 150 | 27.6 | 130 | 6ENQ |
| SM5S18A-AU | 18 | 20 | 22.1 | 5 | 0.5 | 150 | 29.2 | 123 | 6ENR |
| SM5S20A-AU | 20 | 22.2 | 24.5 | 5 | 0.5 | 150 | 32.4 | 111 | 6ENS |
| SM5S22A-AU | 22 | 24.4 | 26.9 | 5 | 0.5 | 150 | 35.5 | 101 | 6ENT |
| SM5S24A-AU | 24 | 26.7 | 29.5 | 5 | 0.5 | 150 | 38.9 | 93 | 6ENU |
| SM5S26A-AU | 26 | 28.9 | 31.9 | 5 | 0.5 | 150 | 42.1 | 86 | 6ENV |
| SM5S28A-AU | 28 | 31.1 | 34.4 | 5 | 0.5 | 150 | 45.4 | 79 | 6ENW |
| SM5S30A-AU | 30 | 33.3 | 36.8 | 5 | 0.5 | 150 | 48.4 | 74 | 6ENX |
| SM5S33A-AU | 33 | 36.7 | 40.6 | 5 | 0.5 | 150 | 53.3 | 68 | 6ENY |
| SM5S36A-AU | 36 | 40 | 44.2 | 5 | 0.5 | 150 | 58.1 | 62 | 6ENZ |
| SM5S40A-AU | 40 | 44.4 | 49.1 | 5 | 0.5 | 150 | 64.5 | 56 | 6EPD |
| SM5S43A-AU | 43 | 47.8 | 52.8 | 5 | 0.5 | 150 | 69.4 | 52 | 6EPE |
| SM5S48A-AU | 48 | 53.3 | 58.7 | 5 | 0.5 | 150 | 80.6 | 45 | 6EPF |

NOTES:

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

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## TYPICAL CHARACTERISTIC CURVES

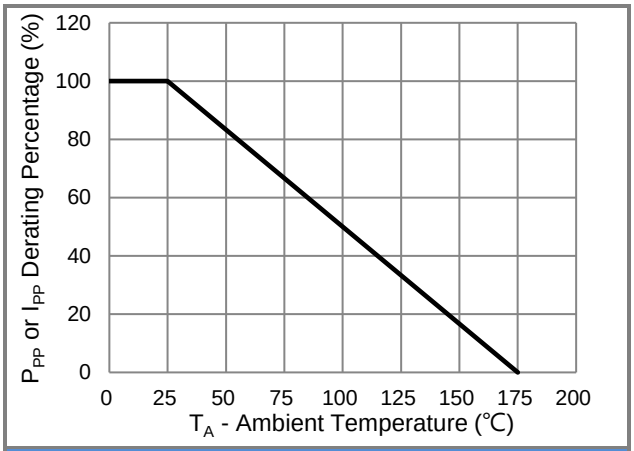


Fig.1 Pulse Power Rating Curve

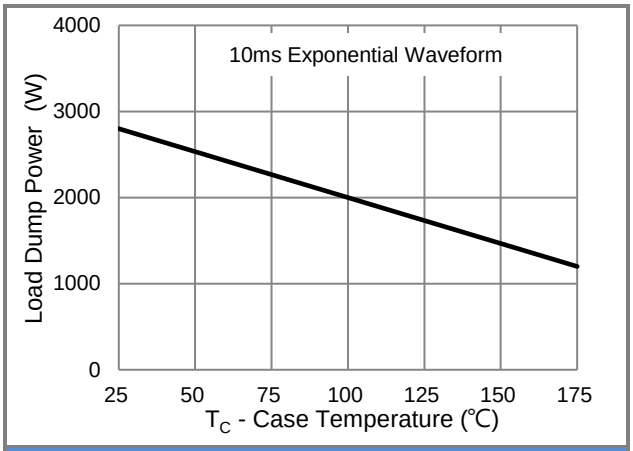


Fig.2 Load Dump Power Characteristics

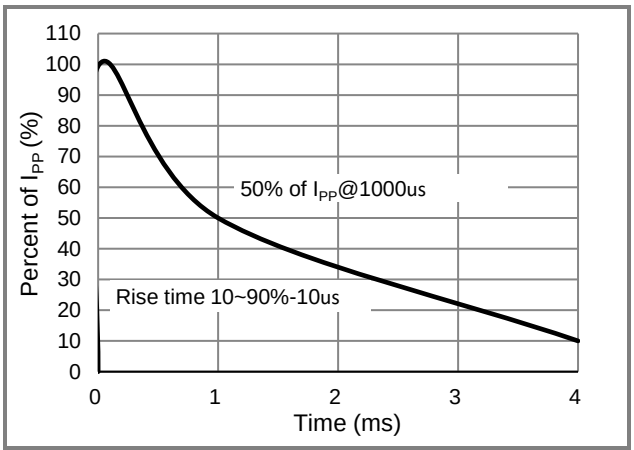


Fig.3 Pulse Waveform

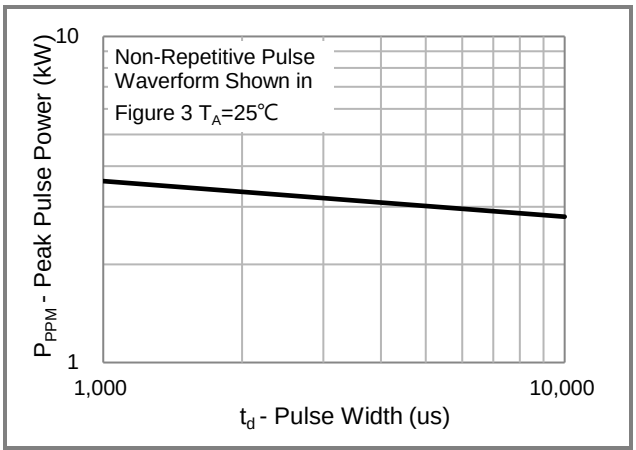


Fig.4 Peak Pulse Power Rating Curve

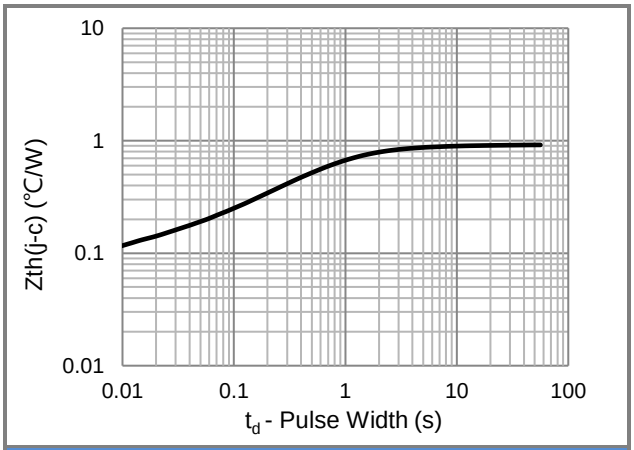


Fig.5 Typical Transient Thermal Impedance

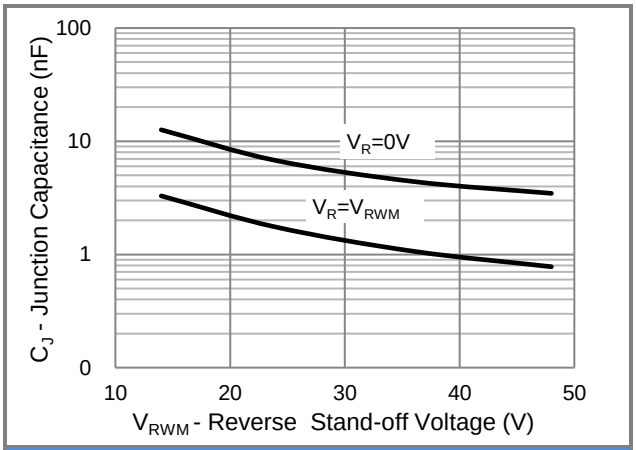


Fig.6 Typical Capacitance

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## TYPICAL CHARACTERISTIC CURVES

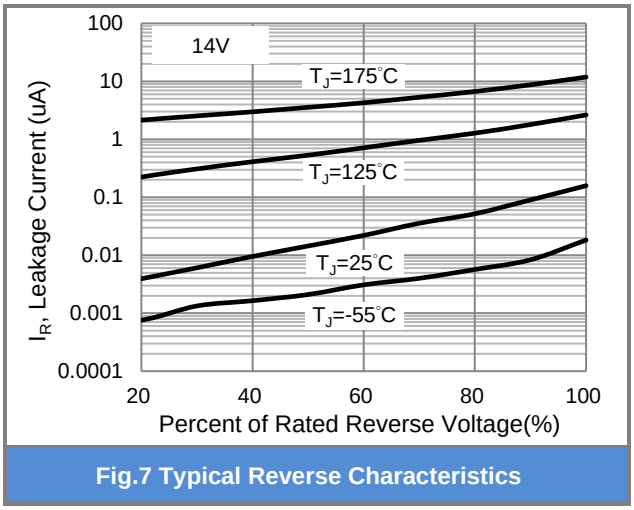


Fig.7 Typical Reverse Characteristics

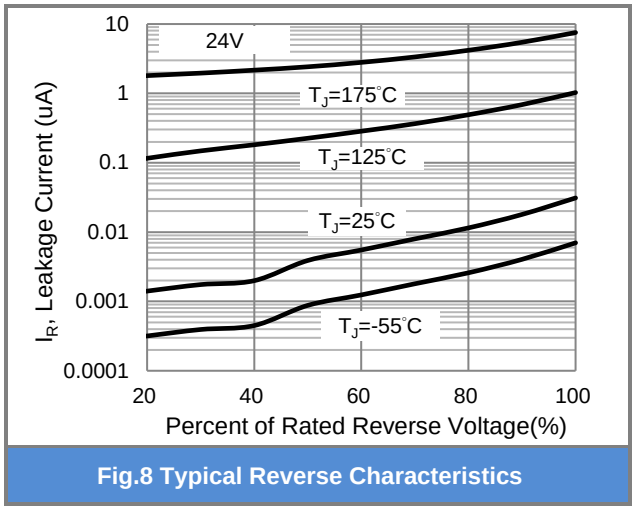


Fig.8 Typical Reverse Characteristics

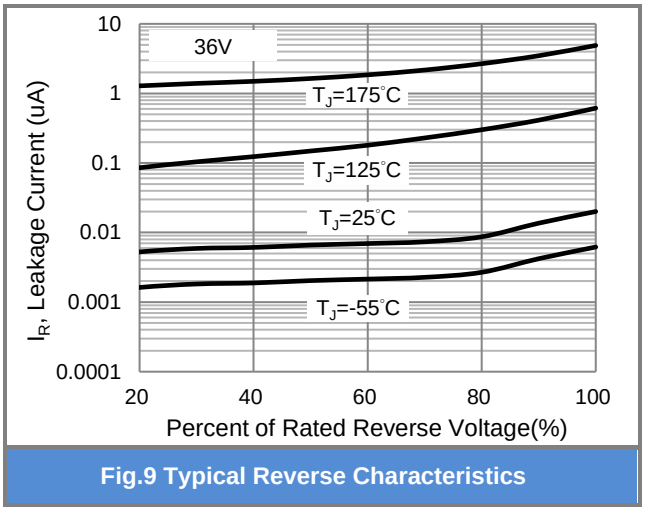


Fig.9 Typical Reverse Characteristics

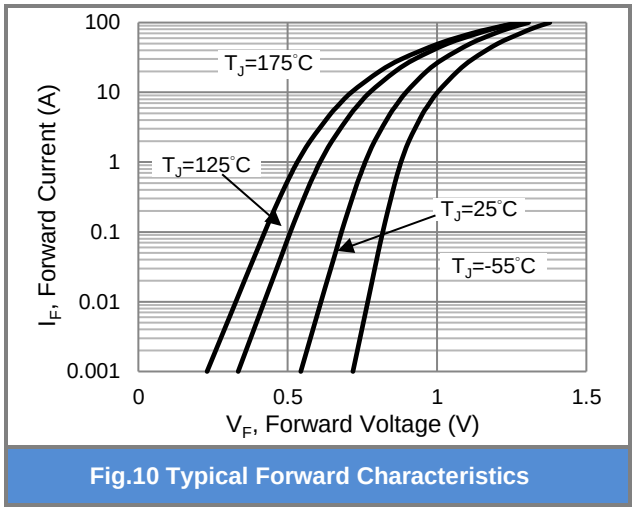


Fig.10 Typical Forward Characteristics

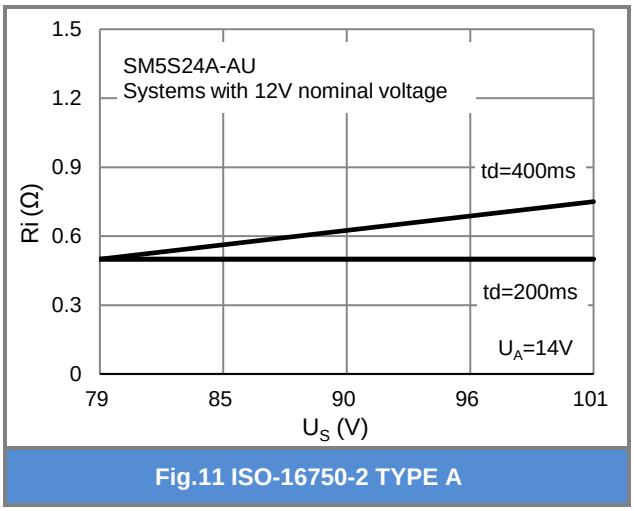


Fig.11 ISO-16750-2 TYPE A

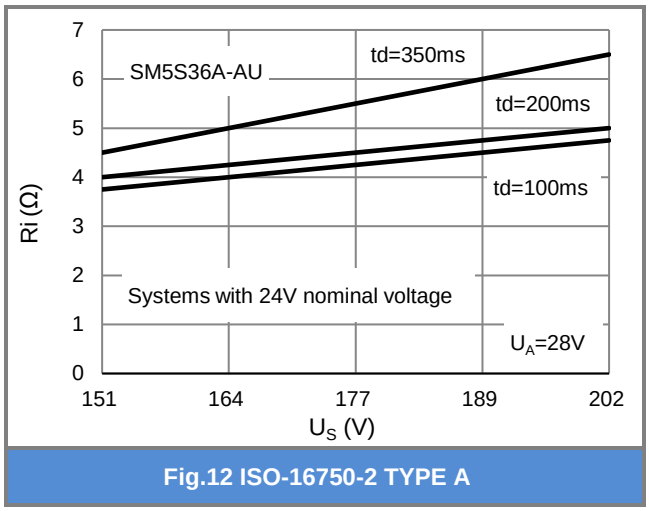


Fig.12 ISO-16750-2 TYPE A

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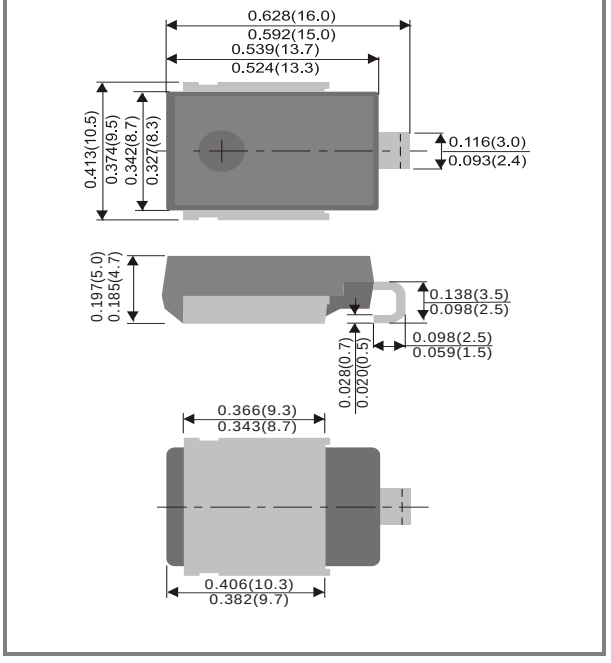
## Product and Packing Information

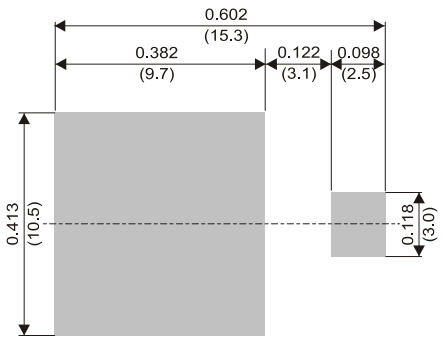
| Part No. | Package Type | Packing Type | Marking |
|---|---|---|---|
| SM5SxxA-AU | DO-218AB | 600 pcs / 13” reel | See Table |

## Packaging Information & Mounting Pad Layout

DO-218AB Dimension — Unit: inch(mm)




DO-218AB Pad Layout — Unit: inch(mm)



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