

SM6S14A-AU ~ SM6S48A-AU Series

4.6kW SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Stand-Off Voltage

14~48V

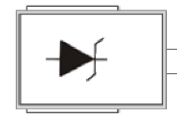
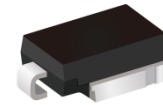
DO-218AB

Features

- ISO10605(C=330 pF,R=330Ω): ± 30kV Air, ± 30kV Contact
- HBM $\geq \pm 8$ kV & CDM $\geq \pm 2$ 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 | UNITS |
|---|----------------------------------|---------|-------|
| 10/1,000us Peak Pulse Power Dissipation on T _A = 25 °C (Note 1) | P _{PPM1} | 4600 | W |
| 10/10,000us Peak Pulse Power Dissipation on T _A = 25 °C | P _{PPM2} | 3600 | W |
| Peak Surge Current (60Hz half wave) | I _{FSM} | 600 | A |
| Typical Thermal Resistance Junction to Case | R _{θJC} | 0.95 | °C/W |
| Power Dissipation on infinite heatsink T _C = 25 °C | P _D | 6 | 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 ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Part Number | V_{RWM} | V_{BR} | | | Reverse Leakage | | $V_C @ I_{PP}$ (Note 1) | | Marking Code |
|------------------------------------|-----------|----------|------|-------|-----------------|--|-------------------------|-----|--------------|
| | | Min. | Max. | I_T | $I_R @ V_{RWM}$ | $I_R @ V_{RWM}$ $T_J = 175^\circ\text{C}$ | V | A | |
| | V | V | V | mA | uA | uA | | | |
| 4600W Transient Voltage Suppressor | | | | | | | | | |
| SM6S14A-AU | 14 | 15.6 | 17.2 | 5 | 1 | 150 | 23.2 | 198 | 6EKG |
| SM6S15A-AU | 15 | 16.7 | 18.5 | 5 | 1 | 150 | 24.4 | 189 | 6EKH |
| SM6S16A-AU | 16 | 17.8 | 19.7 | 5 | 1 | 150 | 26 | 177 | 6EKK |
| SM6S17A-AU | 17 | 18.9 | 20.9 | 5 | 1 | 150 | 27.6 | 167 | 6EKL |
| SM6S18A-AU | 18 | 20 | 22.1 | 5 | 0.5 | 150 | 29.2 | 158 | 6EKM |
| SM6S20A-AU | 20 | 22.2 | 24.5 | 5 | 0.5 | 150 | 32.4 | 142 | 6EKN |
| SM6S22A-AU | 22 | 24.4 | 26.9 | 5 | 0.5 | 150 | 35.5 | 130 | 6EKP |
| SM6S24A-AU | 24 | 26.7 | 29.5 | 5 | 0.5 | 150 | 38.9 | 118 | 6EKQ |
| SM6S26A-AU | 26 | 28.9 | 31.9 | 5 | 0.5 | 150 | 42.1 | 109 | 6EKR |
| SM6S28A-AU | 28 | 31.1 | 34.4 | 5 | 0.5 | 150 | 45.4 | 101 | 6EKS |
| SM6S30A-AU | 30 | 33.3 | 36.8 | 5 | 0.5 | 150 | 48.4 | 95 | 6EKT |
| SM6S33A-AU | 33 | 36.7 | 40.6 | 5 | 0.5 | 150 | 53.3 | 86 | 6EKU |
| SM6S36A-AU | 36 | 40 | 44.2 | 5 | 0.5 | 150 | 58.1 | 79 | 6EKV |
| SM6S40A-AU | 40 | 44.4 | 49.1 | 5 | 0.5 | 150 | 64.5 | 71 | 6EKW |
| SM6S43A-AU | 43 | 47.8 | 52.8 | 5 | 0.5 | 150 | 69.4 | 66 | 6EKX |
| SM6S48A-AU | 48 | 53.3 | 58.7 | 5 | 0.5 | 150 | 80.6 | 57 | 6EKY |

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ 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

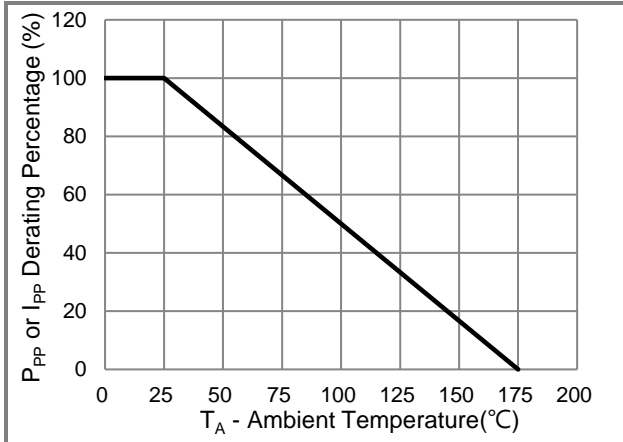


Fig.1 Pulse Power Rating Curve

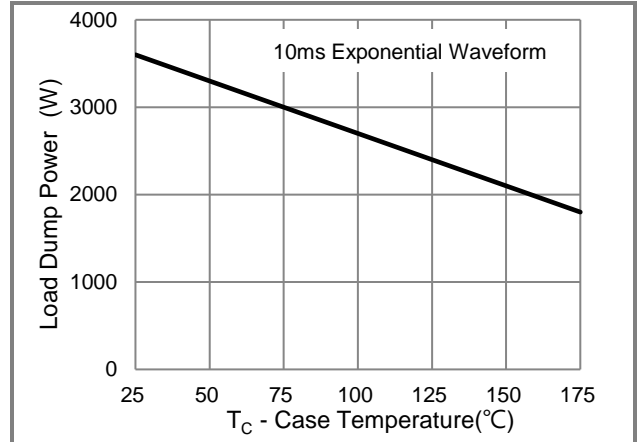


Fig.2 Load Dump Power Characteristics

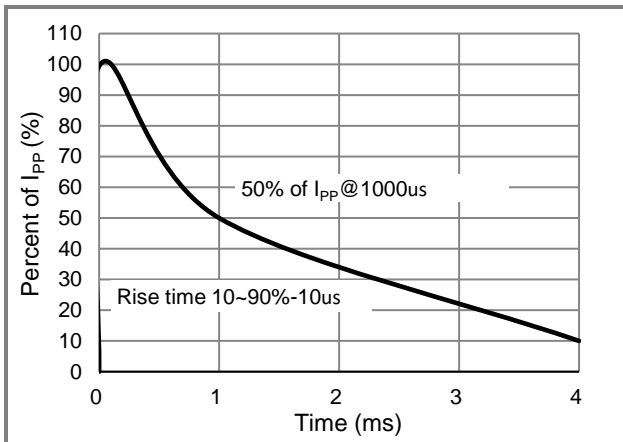


Fig.3 Pulse Waveform

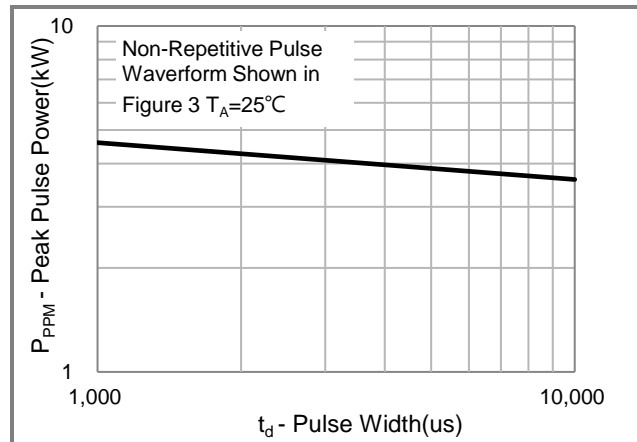


Fig.4 Peak Pulse Power Rating Curve

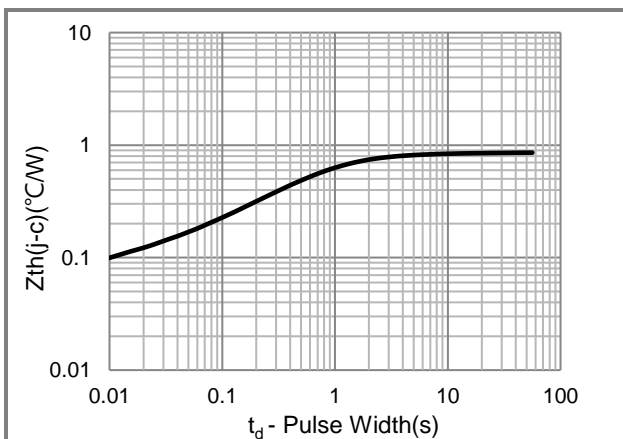


Fig.5 Typical Transient Thermal Impedance

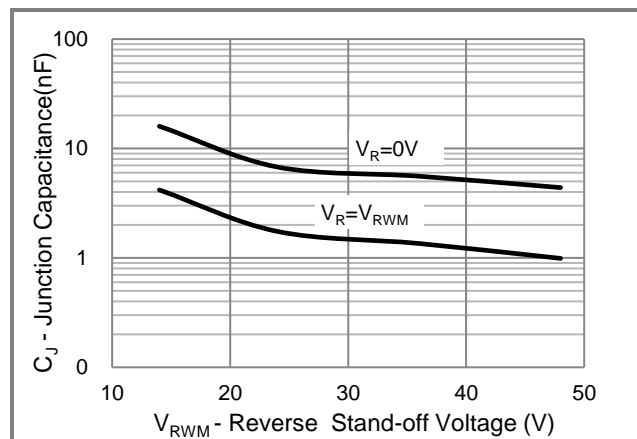


Fig.6 Typical Capacitance

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TYPICAL CHARACTERISTIC CURVES

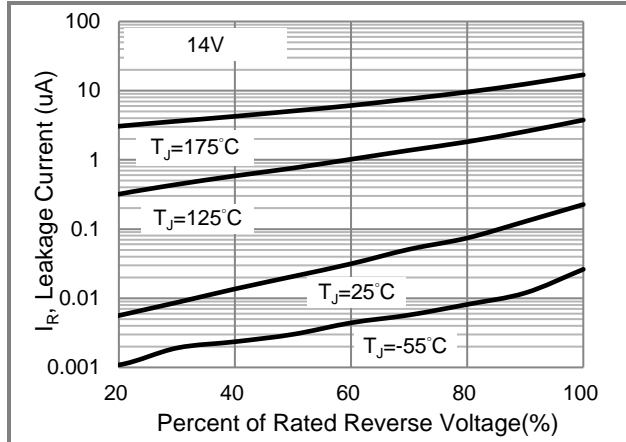


Fig.7 Typical Reverse Characteristics

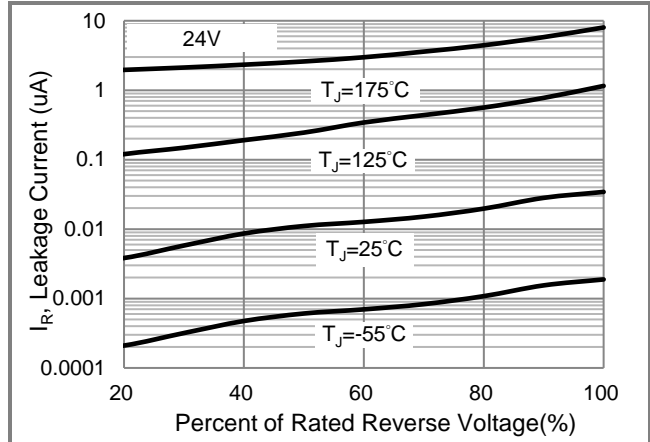


Fig.8 Typical Reverse Characteristics

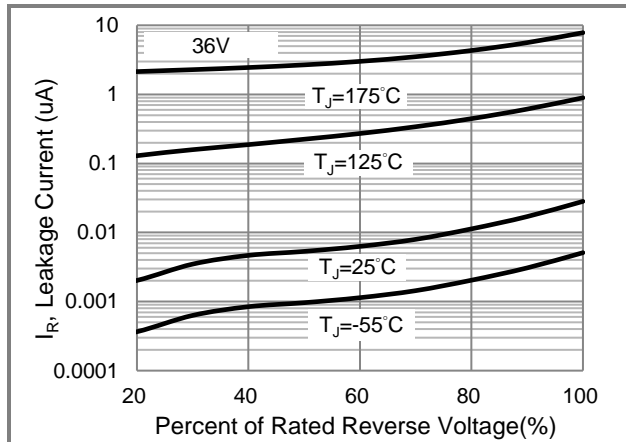


Fig.9 Typical Reverse Characteristics

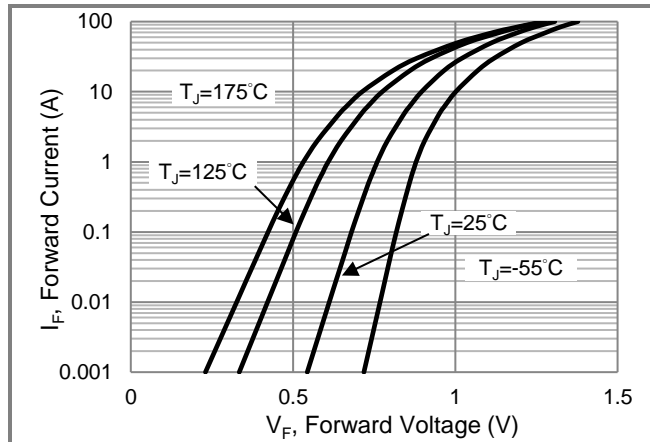


Fig.10 Typical Forward Characteristics

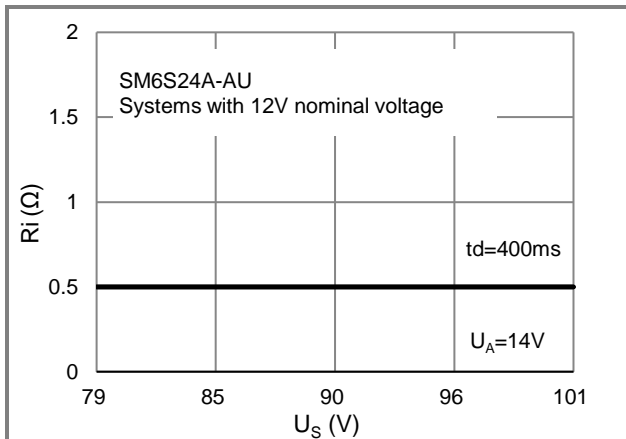


Fig.11 ISO-16750-2 TYPE A

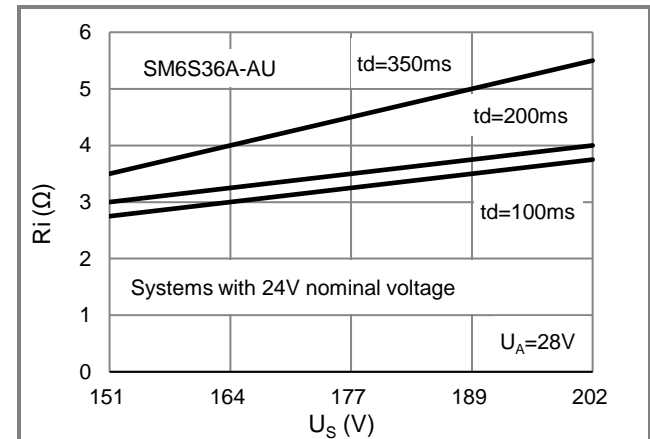


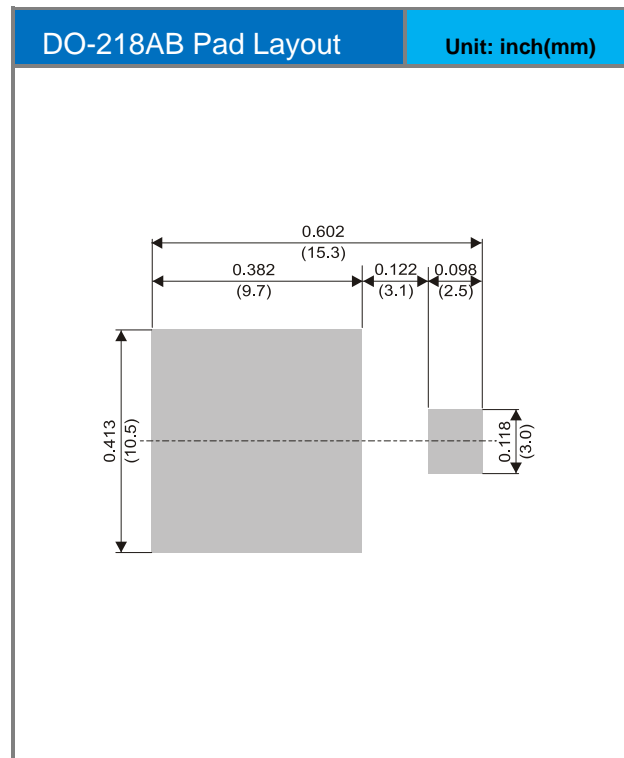
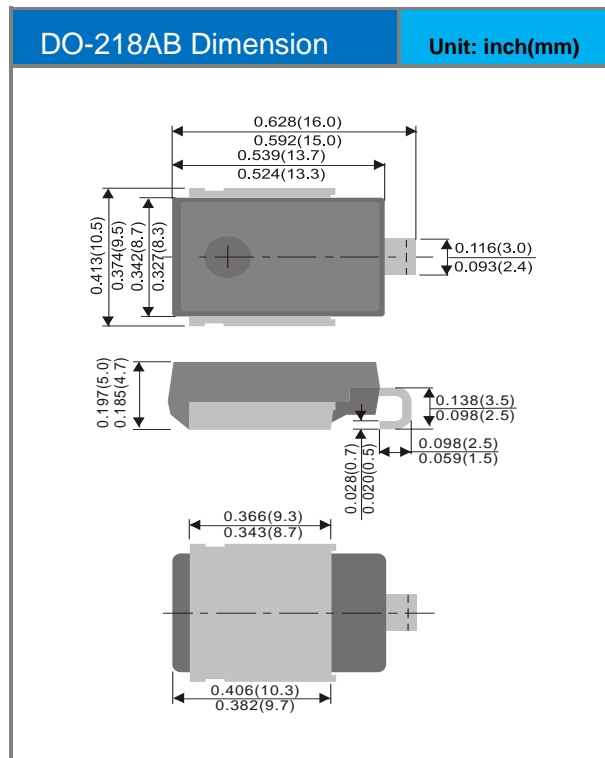
Fig.12 ISO-16750-2 TYPE A

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Product and Packing Information

| Part No. | Package Type | Packing Type | Marking |
|------------|--------------|--------------------|-----------|
| SM6SxxA-AU | DO-218AB | 600 pcs / 13" reel | See Table |

Packaging Information & Mounting Pad Layout



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