

6.6kW SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

MINI218

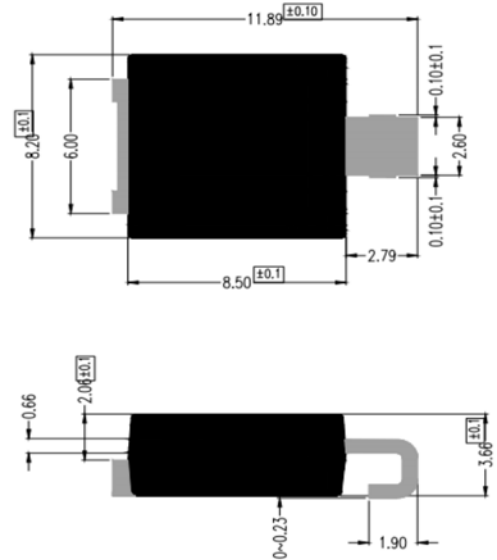
Unit:mm

Features

- ISO10605(C=330 pF,R=330Ω): ± 30kV Air, ± 30kV Contact
- HBM ≥ ± 8 kV & CDM ≥ ± 2 kV
- Rated for load dump protection (ISO 16750-2) in automotive applications
- Meets ISO 7637-2 Requirements
- 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, MINI218
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 2.5 grams
- Only suitable for P-type chip



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

| PARAMETER | SYMBOL | LIMIT | UNITS |
|--|------------------|------------|--------------------|
| 10/1,000us Peak Pulse Power Dissipation on $T_A = 25^\circ\text{C}$ | $P_{PPM1}^{(1)}$ | 6600 | W |
| 10/10,000us Peak Pulse Power Dissipation on $T_A = 25^\circ\text{C}$ | P_{PPM2} | 5200 | W |
| Peak Surge Current (60Hz half wave) | I_{FSM} | 700 | A |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | 0.9 | $^\circ\text{C/W}$ |
| Power Dissipation on infinite heatsink $T_C = 25^\circ\text{C}$ | P_D | 8 | 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 to 175 | $^\circ\text{C}$ |



Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| Part Number | V_{RWM} | V_{BR} | | | Reverse Leakage | | $V_C@I_{PP}^{(1)}$ | |
|------------------------------------|-----------|----------|------|-------|-----------------|--|--------------------|-----|
| | | 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 | V | A |
| 6600W Transient Voltage Suppressor | | | | | | | | |
| SMD8S14A/CA ⁽³⁾ | 14 | 15.6 | 17.2 | 5 | 1 | 150 | 23.2 | 284 |
| SMD8S15A/CA | 15 | 16.7 | 18.5 | 5 | 1 | 150 | 24.4 | 270 |
| SMD8S16A/CA | 16 | 17.8 | 19.7 | 5 | 1 | 150 | 26 | 254 |
| SMD8S17A/CA | 17 | 18.9 | 20.9 | 5 | 1 | 150 | 27.6 | 239 |
| SMD8S18A/CA | 18 | 20 | 22.1 | 5 | 0.5 | 150 | 29.2 | 226 |
| SMD8S20A/CA | 20 | 22.2 | 24.5 | 5 | 0.5 | 150 | 32.4 | 204 |
| SMD8S22A/CA | 22 | 24.4 | 26.9 | 5 | 0.5 | 150 | 35.5 | 186 |
| SMD8S24A/CA | 24 | 26.7 | 29.5 | 5 | 0.5 | 150 | 38.9 | 170 |
| SMD8S26A/CA | 26 | 28.9 | 31.9 | 5 | 0.5 | 150 | 42.1 | 157 |
| SMD8S28A/CA | 28 | 31.1 | 34.4 | 5 | 0.5 | 150 | 45.4 | 145 |
| SMD8S30A/CA | 30 | 33.3 | 36.8 | 5 | 0.5 | 150 | 48.4 | 136 |
| SMD8S33A/CA | 33 | 36.7 | 40.6 | 5 | 0.5 | 150 | 53.3 | 124 |
| SMD8S36A/CA | 36 | 40 | 44.2 | 5 | 0.5 | 150 | 58.1 | 114 |
| SMD8S40A/CA | 40 | 44.4 | 49.1 | 5 | 0.5 | 150 | 64.5 | 102 |
| SMD8S43A/CA | 43 | 47.8 | 52.8 | 5 | 0.5 | 150 | 69.4 | 95 |
| SMD8S48A/CA | 48 | 53.3 | 58.7 | 5 | 0.5 | 150 | 80.6 | 82 |

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.
3. Add suffix "CA" after part number to specify Bi-directional devices



TYPICAL CHARACTERISTIC CURVES

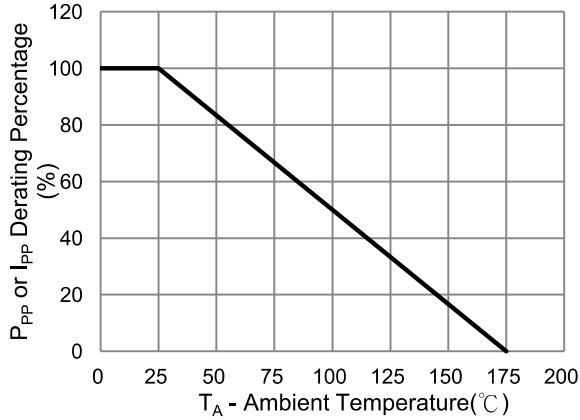


Fig.1 Pulse Power Rating Curve

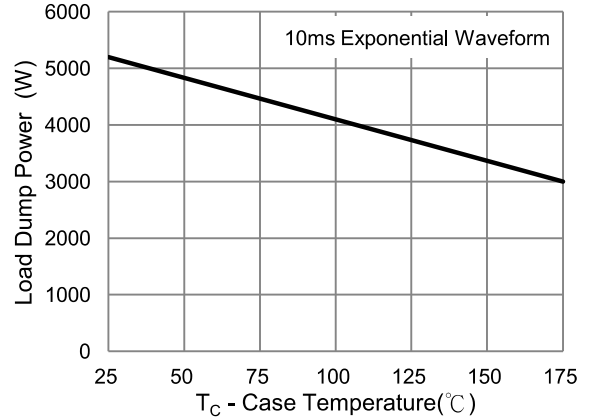


Fig.2 Load Dump Power Characteristics

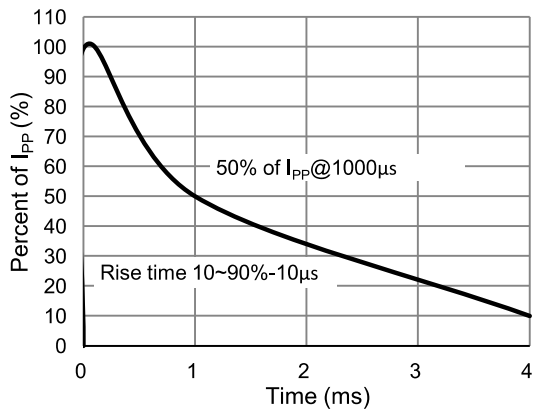


Fig.3 Pulse Waveform

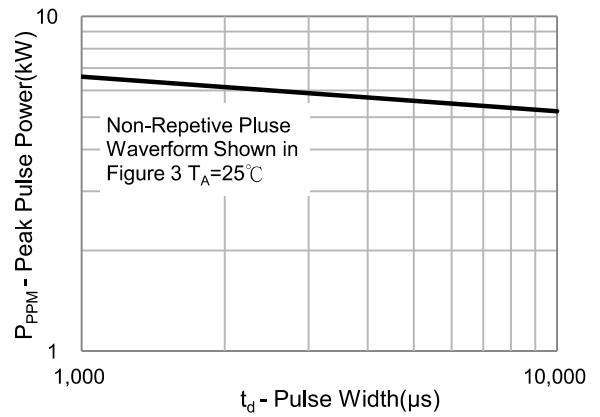


Fig.4 Peak Pulse Power Rating Curve

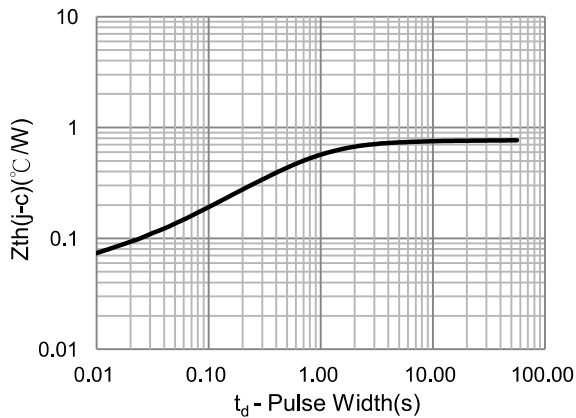


Fig.5 Typical Transient Thermal Impedance

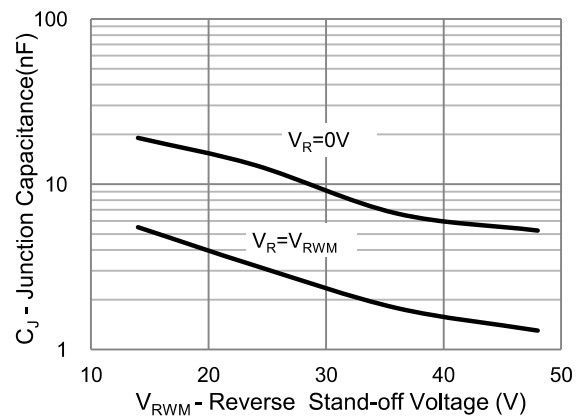


Fig.6 Typical Capacitance



TYPICAL CHARACTERISTIC CURVES

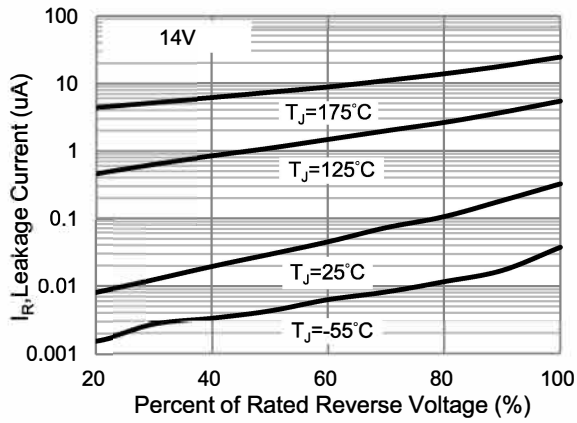


Fig.7 Typical Reverse Characteristics

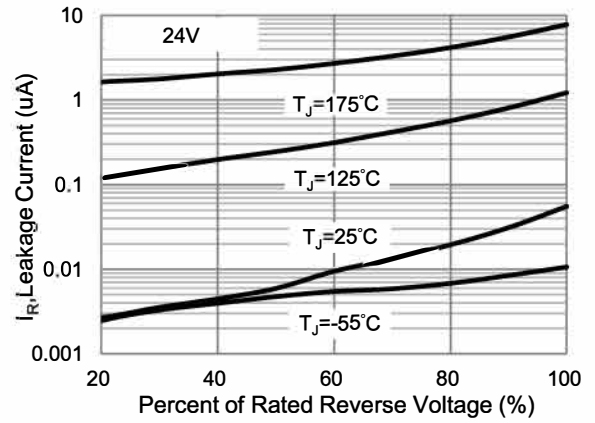


Fig.8 Typical Reverse Characteristics

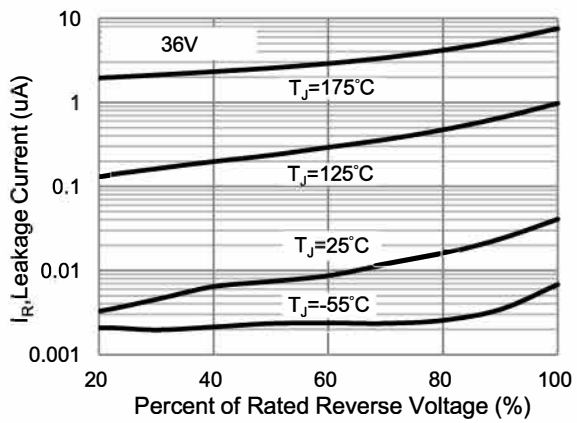


Fig.9 Typical Reverse Characteristics

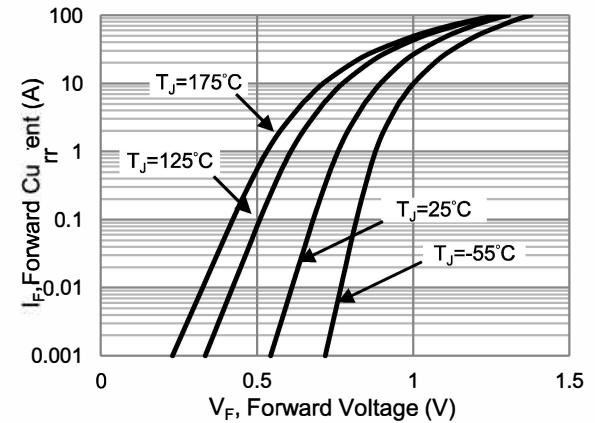


Fig.10 Typical Forward Characteristics