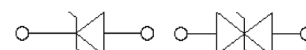


6.6KW SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Features

- AEC-Q101 Qualified, high reliability
- HBM $\geq \pm 8$ kV & CDM $\geq \pm 2$ kV
- Available in unidirectional and bidirectional polarity
- Low leakage current
- Low forward voltage drop
- High surge capability
- Meets ISO 7637-2 Requirements
- Meets MSL Level 1 per J-STD-020RoHS
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard


DO-218AB


Application

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting, especially for automotive load dump protection application

Mechanical Data

- Case: Molded plastic, DO-218
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.099 ounces, 2.821 grams
- Only suitable for P-type chip

Absolute Maximum Ratings (at $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Limit	Unit
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
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 Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to + 175	$^\circ\text{C}$

Thermal Characteristics (Q1/Q2)

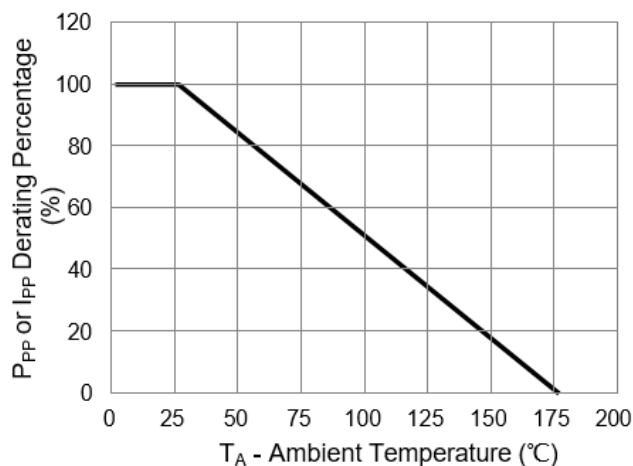
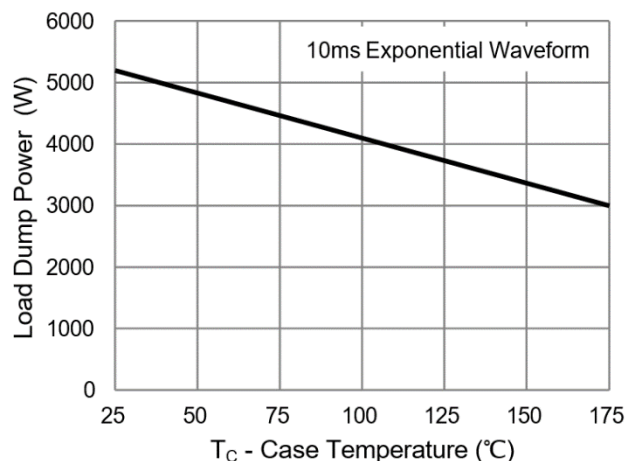
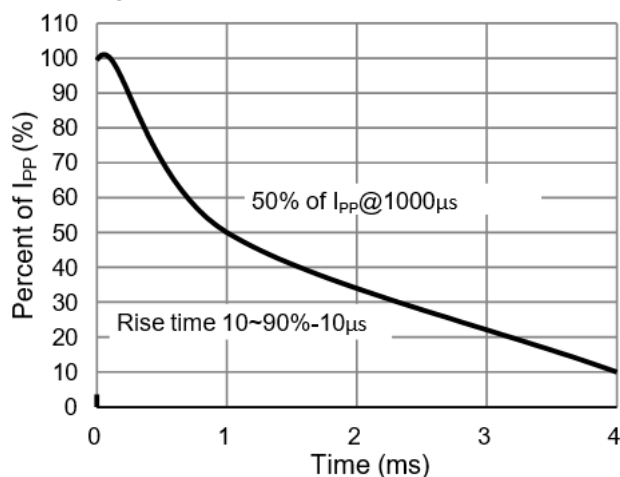
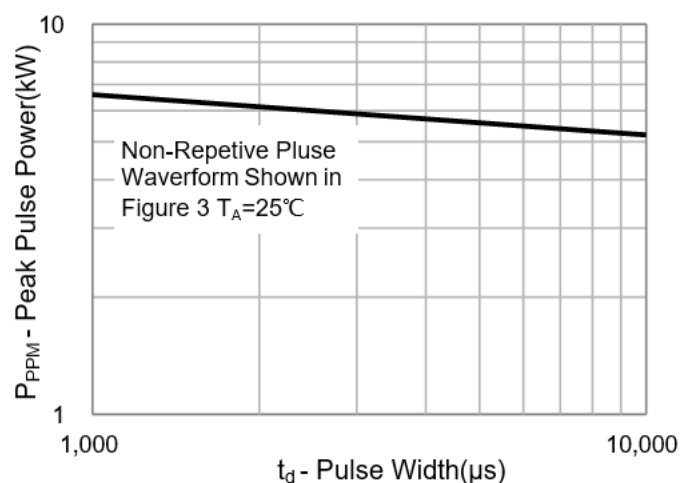
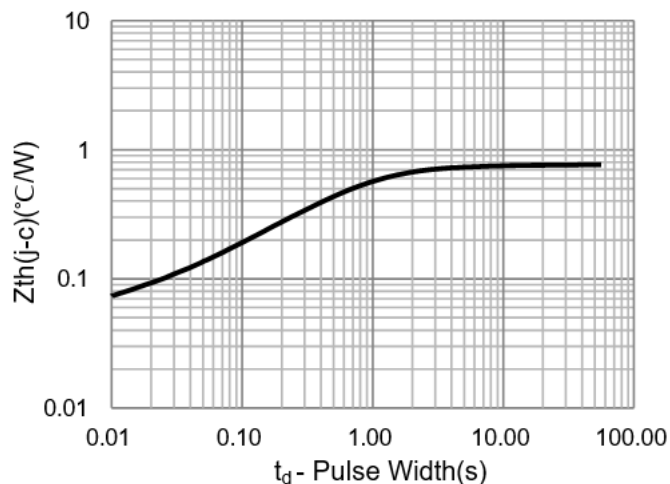
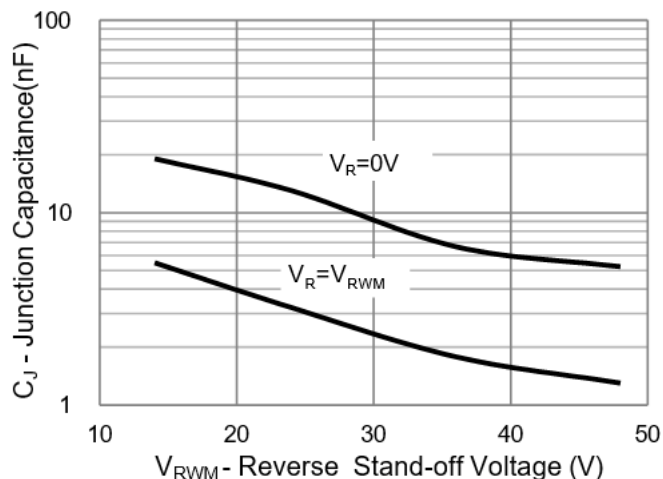
Parameter	Symbol	Typ.	Unit
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	0.9	$^\circ\text{C/W}$

Characteristics at $T_a = 25^\circ\text{C}$ unless otherwise noted

Part Number	Marking		V_{RWM}	V_{BR}			Reverse Leakage		$V_C @ I_{PP}^{(1)}$	
				Min.	Max.	I_T	$I_R @ V_{RWM}$	$I_R @ V_{RWM}$ $T_J = 175^\circ\text{C}$		
	UNI	BI	V	V	V	mA	μA	μA	V	A
6600W Transient Voltage Suppressor										
SM8S14A/CA	SM8S14A	SM8S14CA	14	15.6	17.2	5	1	150	23.2	284
SM8S15A/CA	SM8S15A	SM8S15CA	15	16.7	18.5	5	1	150	24.4	270
SM8S16A/CA	SM8S16A	SM8S16CA	16	17.8	19.7	5	1	150	26	254
SM8S17A/CA	SM8S17A	SM8S17CA	17	18.9	20.9	5	1	150	27.6	239
SM8S18A/CA	SM8S18A	SM8S18CA	18	20	22.1	5	0.5	150	29.2	226
SM8S20A/CA	SM8S20A	SM8S20CA	20	22.2	24.5	5	0.5	150	32.4	204
SM8S22A/CA	SM8S22A	SM8S22CA	22	24.4	26.9	5	0.5	150	35.5	186
SM8S24A/CA	SM8S24A	SM8S24CA	24	26.7	29.5	5	0.5	150	38.9	170
SM8S26A/CA	SM8S26A	SM8S26CA	26	28.9	31.9	5	0.5	150	42.1	157
SM8S28A/CA	SM8S28A	SM8S28CA	28	31.1	34.4	5	0.5	150	45.4	145
SM8S30A/CA	SM8S30A	SM8S30CA	30	33.3	36.8	5	0.5	150	48.4	136
SM8S33A/CA	SM8S33A	SM8S33CA	33	36.7	40.6	5	0.5	150	53.3	124
SM8S36A/CA	SM8S36A	SM8S36CA	36	40	44.2	5	0.5	150	58.1	114
SM8S40A/CA	SM8S40A	SM8S40CA	40	44.4	49.1	5	0.5	150	64.5	102
SM8S43A/CA	SM8S43A	SM8S43CA	43	47.8	52.8	5	0.5	150	69.4	95
SM8S48A/CA	SM8S48A	SM8S48CA	48	53.3	58.7	5	0.5	150	80.6	82

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 Characteristics 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 Characteristics Curves

Fig.7 – Typical Capacitance

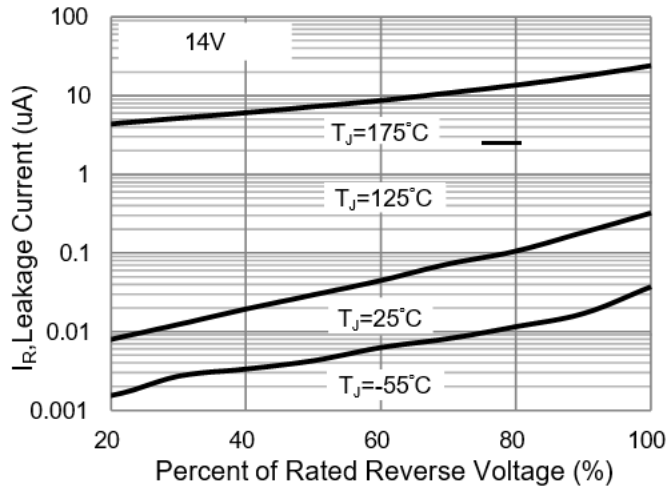


Fig.8 – Typical Capacitance

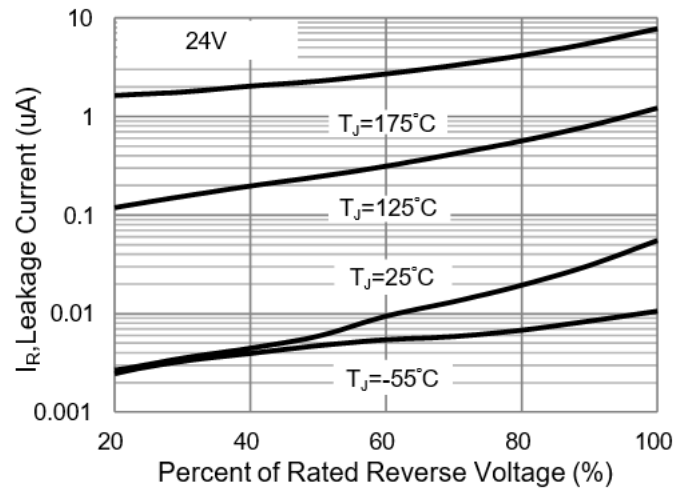


Fig.9 – Typical Reverse Characteristics

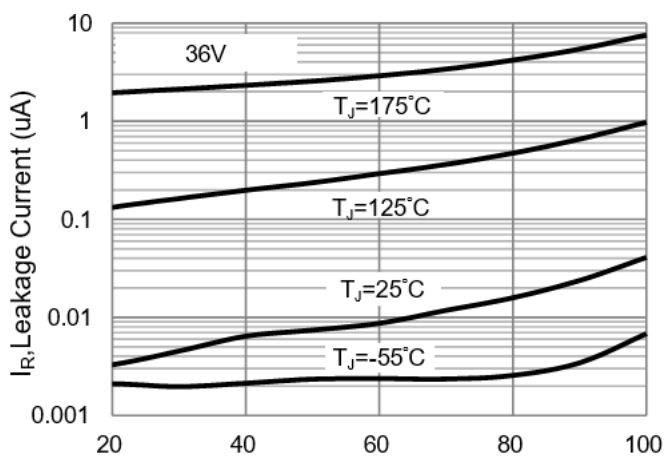
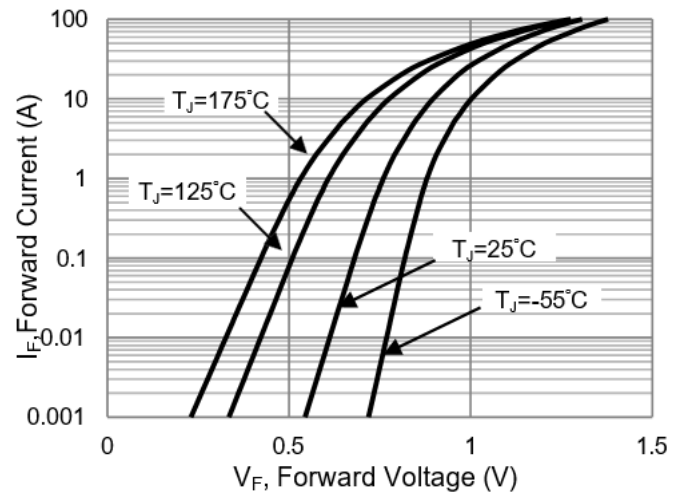
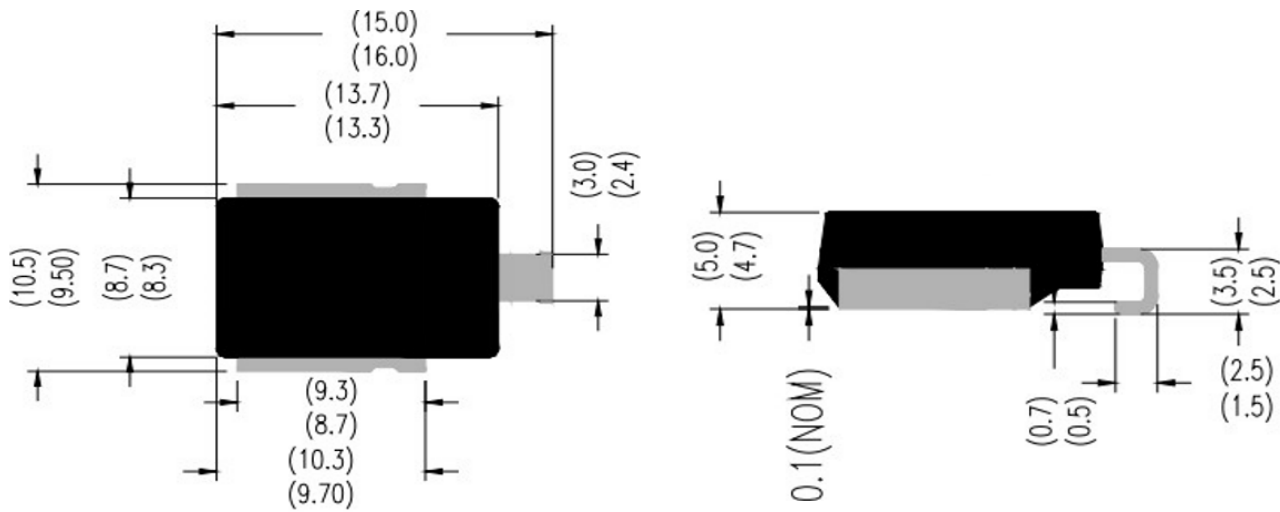


Fig.10 – Typical Forward Characteristics

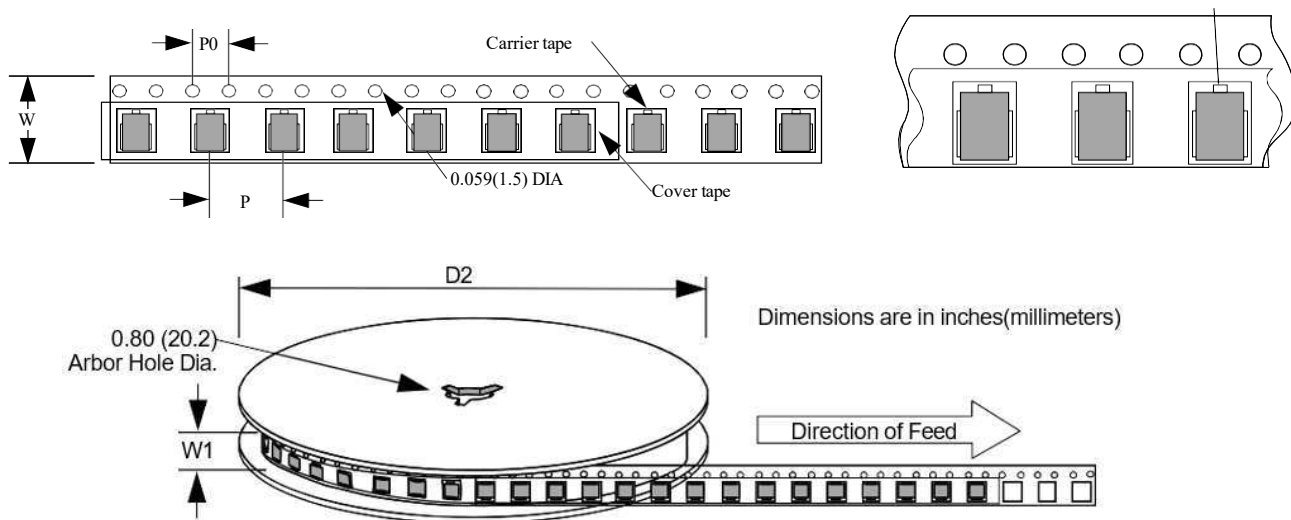


Package Outline Dimensions (Units: mm)

DO-218AB



Packing information



Dimension	Inches	Millimeters
	NOM	NOM
P	0.63	16
P0	0.157	4
W	0.945	24
W1	0.965	24.5
D2	13	330.2