

### Applications

- ◆ 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:** DO-218AB
- ◆ Molding compound meets UL 94V-0 flammability rating Base P/NHE3-RoHS-compliant, AEC-Q101 qualified
- ◆ **Terminals:**  
Matte tin plated leads, solderable per J-STD-002

### Features

- ◆ Junction passivation optimized design passivated anisotropic rectifier technology.
- ◆  $T_J = 175^{\circ}\text{C}$  capability suitable for high reliability and automotive requirement.
- ◆ Available in bi-directional polarity.
- ◆ Low leakage current.
- ◆ Meets ISO16750-2 surge specification (varied by test condition).
- ◆ Meets MSL-1, per J-STD-020, LF maximum peak of  $260^{\circ}\text{C}$ .
- ◆ AEC-Q101 qualified.
- ◆ Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC.

### DO-218AB



DO-218AB



Bi-directional

### Product and Packing Information B

Part Number	QTY/Reel	Reel Size
SM8TxxCA-AT	750	13 inch

### Maximum Ratings ( $T_C=25^{\circ}\text{C}$ , RH=45% ~ 75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at 10/1000 $\mu\text{s}$ waveform	$P_{PP}$	8000	W
Peak pulse power dissipation at 10/10000 $\mu\text{s}$ waveform		6000	W
Power dissipation on infinite heat sink at $T_C=25^{\circ}\text{C}$	$P_D$	8.5	W
Peak pulse current with 10/1000 $\mu\text{s}$ waveform	$I_{PPM}^{(1)}$	See next table	A
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +175	$^{\circ}\text{C}$
Typical thermal resistance, junction to case	$R_{\theta JC}$	0.85	$^{\circ}\text{C}/\text{W}$
Typical thermal resistance, junction to ambient	$R_{\theta JA}$	11	$^{\circ}\text{C}/\text{W}$

**Note :** (1) Non-repetitive current pulse derated above  $T_A=25^{\circ}\text{C}$

**Electrical Characteristics**

Part Number	V <sub>R</sub>	I <sub>T</sub>	I <sub>R</sub> @V <sub>R</sub>		V <sub>BR</sub> @I <sub>T</sub>		V <sub>C</sub> @I <sub>PP</sub>	I <sub>PP</sub>
			μA@25°C	μA@175°C	Min(V)	Max (V)		
SM8T33CA-AT	33.0	5	5	150	36.7	40.6	53.3	150
SM8T36CA-AT	36.0	5	5	150	40.0	44.2	58.1	138

**Note:** ①. Surge waveform: 10/1000μs

V<sub>R</sub>: Stand-off voltage -- Maximum voltage that can be applied

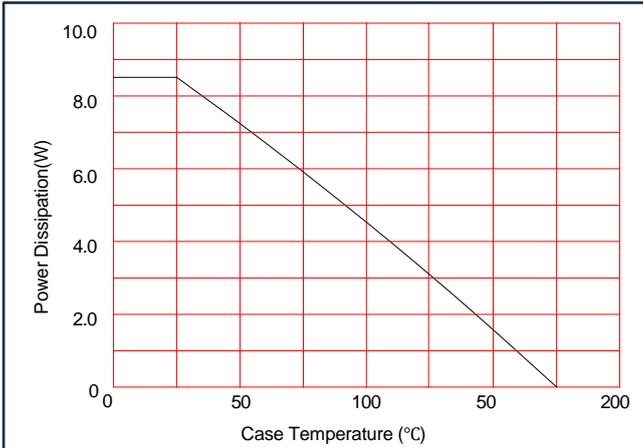
V<sub>BR</sub>: Breakdown voltage

V<sub>C</sub>: Clamping voltage -- Peak voltage measured across the suppressor at a specified I<sub>PP</sub>

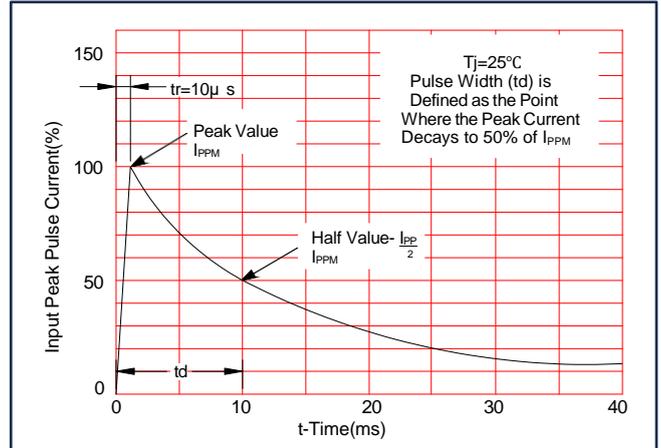
I<sub>R</sub>: Reverse leakage current

I<sub>T</sub>: Test current

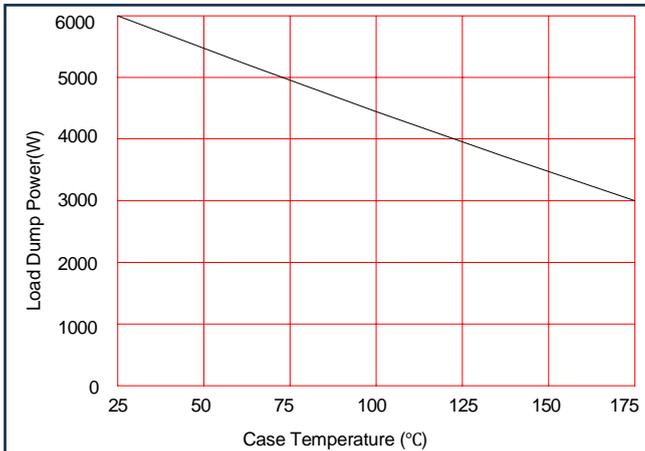
Ratings and Characteristic Curves (TA=25°C, unless otherwise noted)



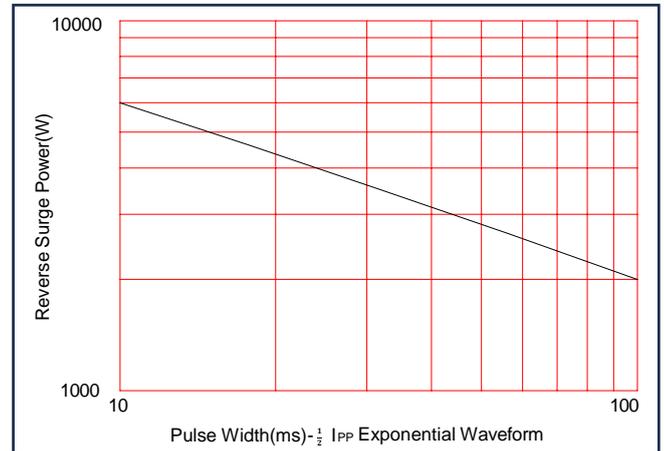
Power Derating Curve



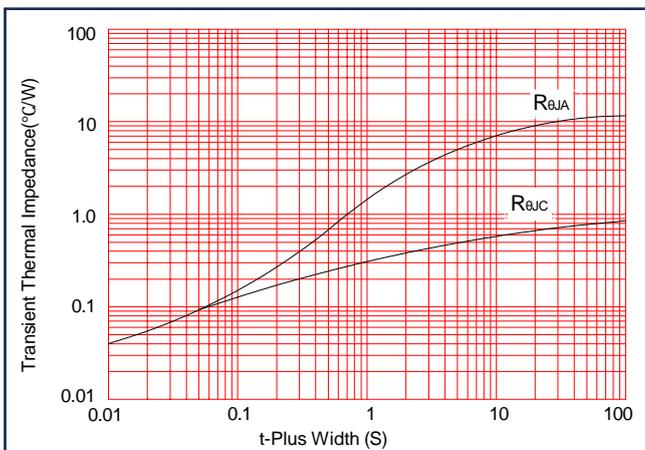
Pulse Waveform



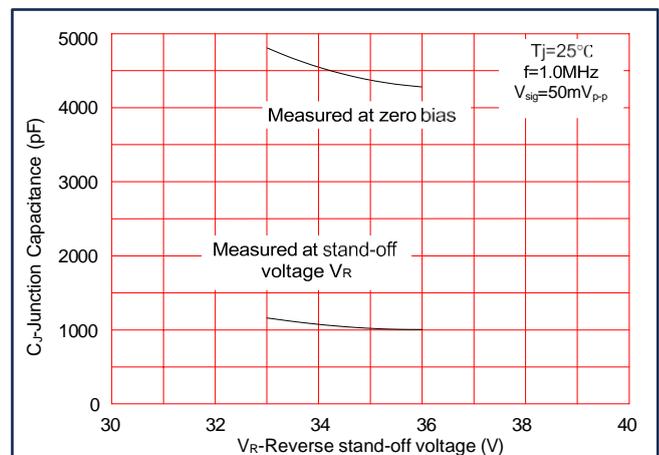
Load Dump Power Characteristics  
(10ms Exponential Waveform)



Reverse Power Capability

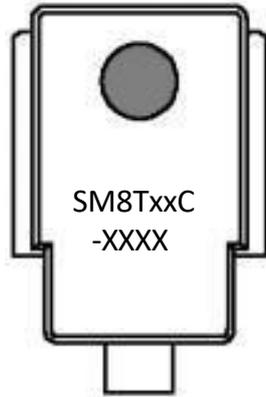


Typical Transient Thermal Impedance



Typical junction capacitance

Marking



SM	Surface Mount
8T	PD=8.5W
36	V <sub>R</sub> :36V
C	Bi-directional

x101 :

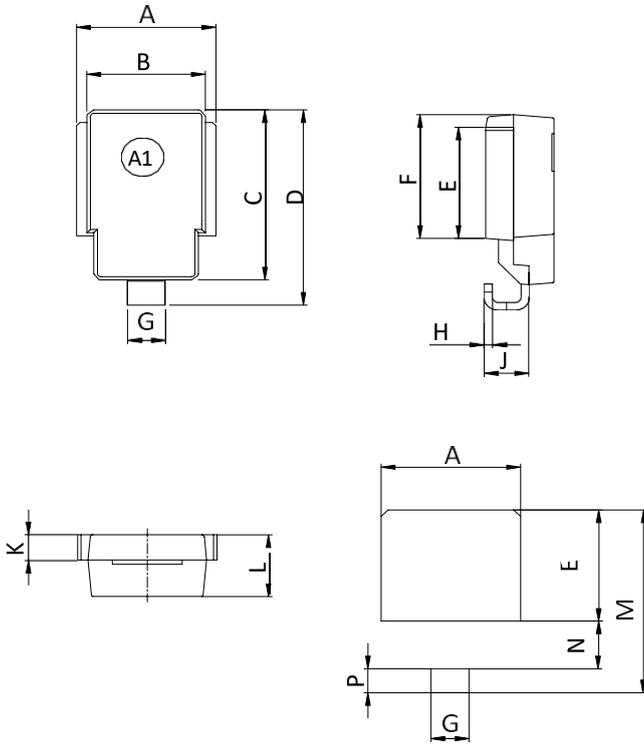
2020	2021	2022	2023	2024	2025
0	1	2	3	4	5
2026	2027	2028	2029	....	
6	7	8	9	....	

0x01 :

Month , 1、2、3 ~ 9、O、N、D 01xx :

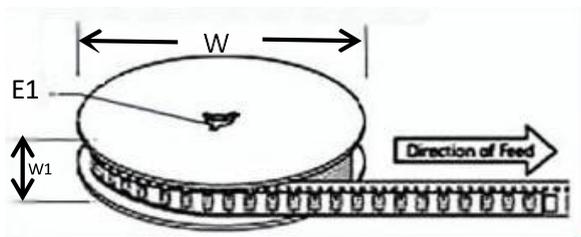
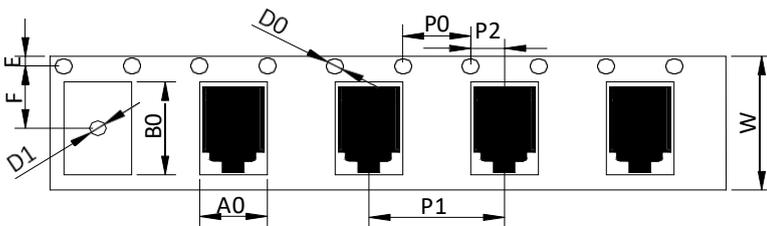
Lot number

Package Mechanical Data



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	9.5	10.5	0.374	0.413
B	8.3	8.7	0.327	0.342
C	13.3	13.7	0.524	0.539
D	15.0	16.0	0.592	0.628
E	8.5	9.1	0.335	0.358
F	9.5	10.1	0.374	0.398
G	2.4	3.0	0.094	0.118
H	0.5	0.7	0.020	0.028
J	2.7	3.7	0.106	0.146
K	1.9	2.1	0.075	0.083
L	4.7	5.1	0.185	0.201
M	14.2	14.8	0.559	0.583
N	3.5	4.1	0.138	0.161
P	1.6	2.2	0.063	0.087

Tape And Reel Specification DO-218AB



Ref.	Millimeters	Inches
A0	10.80 ± 0.3	0.425 ± 0.012
B0	16.13 ± 0.3	0.635 ± 0.012
C	330.0 ± 0.3	13.0 ± 0.012
D0	1.55 ± 0.2	0.061 ± 0.008
D1	1.55 ± 0.2	0.061 ± 0.008
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.30 ± 0.2	0.524 ± 0.008
F	11.50 ± 0.2	0.453 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	16.00 ± 0.2	0.630 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	24.00 ± 0.2	0.945 ± 0.008
W1	25.85 ± 0.2	1.018 ± 0.008