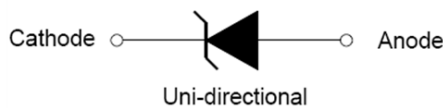


## Surface Mount Transient Voltage Suppressors

High temperature stability and high reliability conditions



DO-218AB



### 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 uni-directional polarity only.
- Low leakage current.
- Low forward voltage drop.
- High surge capability.
- 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.

PRIMARY CHARACTERISTICS	
$V_R$	10V to 43V
$P_{PP}$ (10/1000 $\mu\text{s}$ )	6600W
$P_{PP}$ (10/10000 $\mu\text{s}$ )	5200W
$P_D$	8W
$I_{FSM}$	700A
$T_{Jmax}$	$175^\circ\text{C}$
Polarity	Uni-directional
Package	DO-218AB

### TYPICAL 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

MAXIMUM RATINGS ( $T_C=25^\circ\text{C}$ , RH=45%-75%, unless otherwise noted)			
Parameter	Symbol	Value	Unit
Peak pulse power dissipation on 10/1000 $\mu\text{s}$ waveform	$P_{PP}$	6600	Watts
Peak pulse power dissipation on 10/10000 $\mu\text{s}$ waveform		5200	Watts
Power dissipation on infinite heat sink at $T_C=25^\circ\text{C}$	$P_D$	8.0	Watts
Peak pulse current with 10/1000 $\mu\text{s}$ waveform	$I_{PPM}^{(1)}$	See next table	Amps
Peak forward surge current, 8.3ms single half sine-wave	$I_{FSM}$	700	Amps
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +175	$^\circ\text{C}$
Typical thermal resistance, junction to case	$R_{\theta JC}$	0.9	$^\circ\text{C/W}$
Typical thermal resistance, junction to ambient	$R_{\theta JA}$	12	$^\circ\text{C/W}$

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

ELECTRICAL CHARACTERISTICS								
Part Number	$V_R$	$I_T$	$I_R@V_R$		$V_{BR}@I_T$		$V_C@I_{PP}$	$I_{PP}$
Uni-polar	V	mA	$\mu A@25^\circ C$	$\mu A@175^\circ C$	min(V)	max (V)	V	A
SM8S10A-AL	10.0	5	5	250	11.1	12.3	17.0	388
SM8S11A-AL	11.0	5	5	150	12.2	13.5	18.2	363
SM8S12A-AL	12.0	5	5	150	13.3	14.7	19.9	332
SM8S13A-AL	13.0	5	5	150	14.4	15.9	21.5	307
SM8S14A-AL	14.0	5	5	150	15.6	17.2	23.2	284
SM8S15A-AL	15.0	5	5	150	16.7	18.5	24.4	270
SM8S16A-AL	16.0	5	5	150	17.8	19.7	26.0	253
SM8S17A-AL	17.0	5	5	150	18.9	20.9	27.6	239
SM8S18A-AL	18.0	5	5	150	20.0	22.1	29.2	226
SM8S20A-AL	20.0	5	5	150	22.2	24.5	32.4	204
SM8S22A-AL	22.0	5	5	150	24.4	26.9	35.5	186
SM8S24A-AL	24.0	5	5	150	26.7	29.5	38.9	170
SM8S26A-AL	26.0	5	5	150	28.9	31.9	42.1	157
SM8S28A-AL	28.0	5	5	150	31.1	34.4	45.4	145
SM8S30A-AL	30.0	5	5	150	33.3	36.8	48.4	136
SM8S32A-AL	32.0	5	5	150	35.5	39.4	51.4	128.5
SM8S33A-AL	33.0	5	5	150	36.7	40.6	53.3	124
SM8S36A-AL	36.0	5	5	150	40.0	44.2	58.1	114
SM8S40A-AL	40.0	5	5	150	44.4	49.1	64.5	102
SM8S43A-AL	43.0	5	5	150	47.8	52.8	69.4	95.1

**Note:**

①. For all types maximum  $V_F=1.8V$  at  $I_F=100A$  measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

②. Surge waveform: 10/1000 $\mu s$

$V_R$ : Stand-off voltage -- Maximum voltage that can be applied

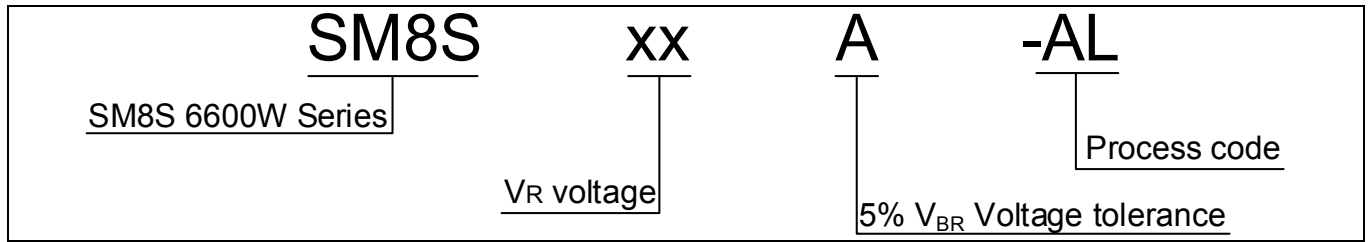
$V_{BR}$ : Breakdown voltage

$V_C$ : Clamping voltage -- Peak voltage measured across the suppressor at a specified  $I_{PP}$

$I_R$ : Reverse leakage current

$I_T$ : Test current

ORDERING INFORMATION



RATINGS AND CHARACTERISTICS CURVES ( $T_A=25^\circ C$ , unless otherwise noted)

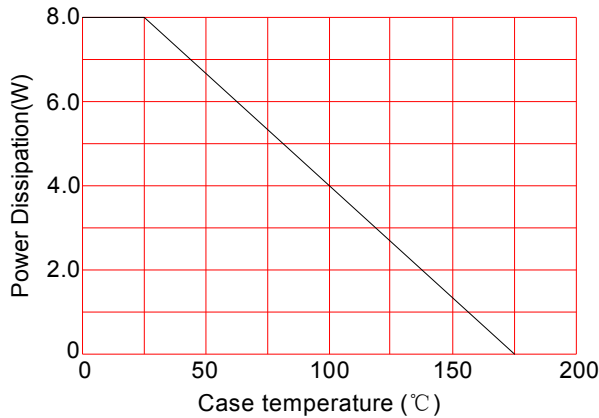


FIG.1: Power derating curve

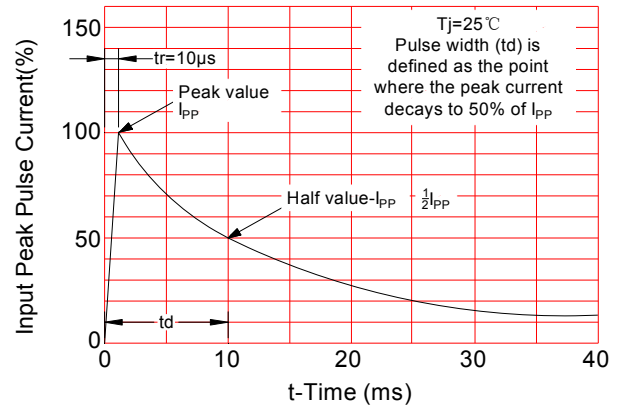


FIG.2: Pulse waveform

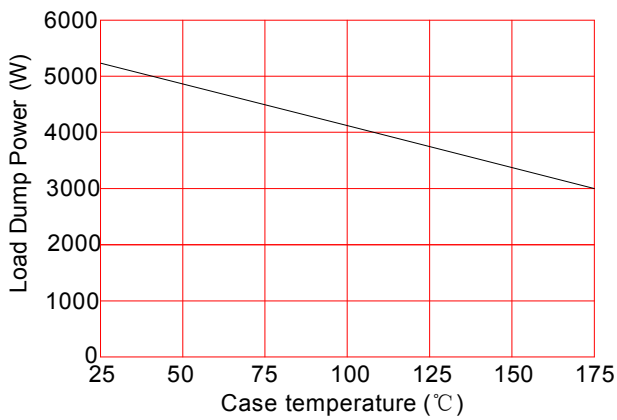


FIG.3: Load dump power characteristics (10ms exponential waveform)

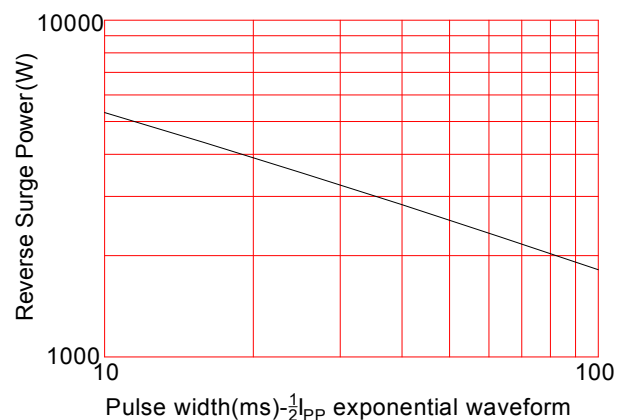


FIG.4: Reverse power capability

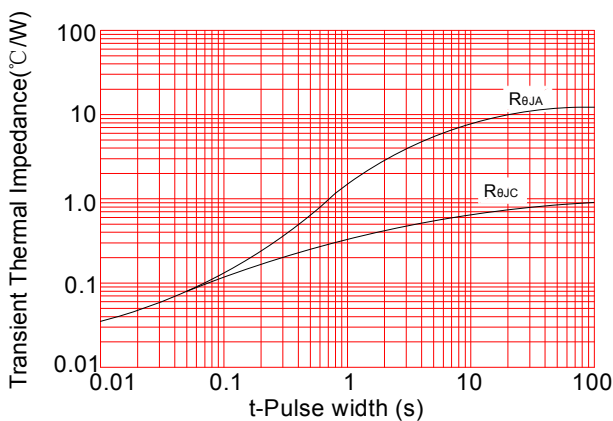


FIG.5: Typical transient thermal impedance

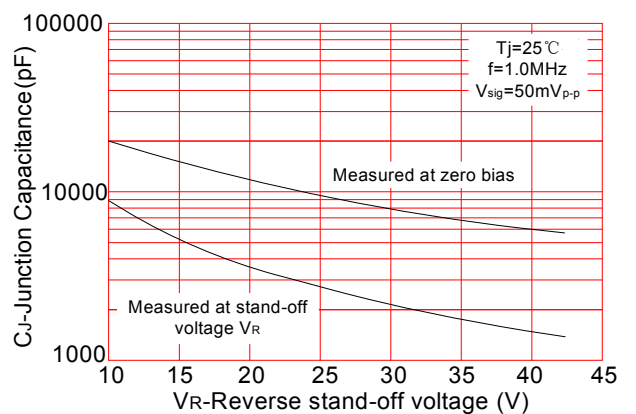
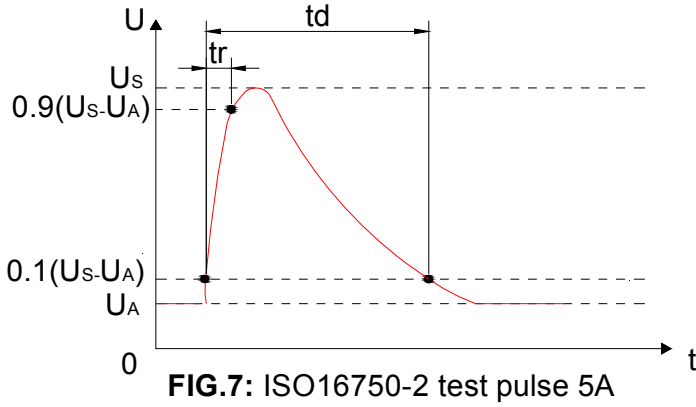
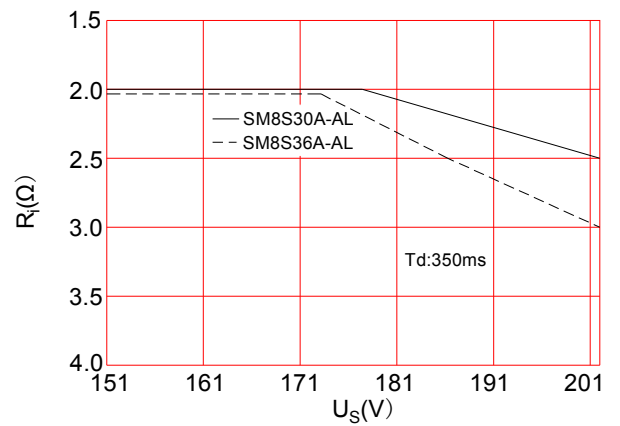
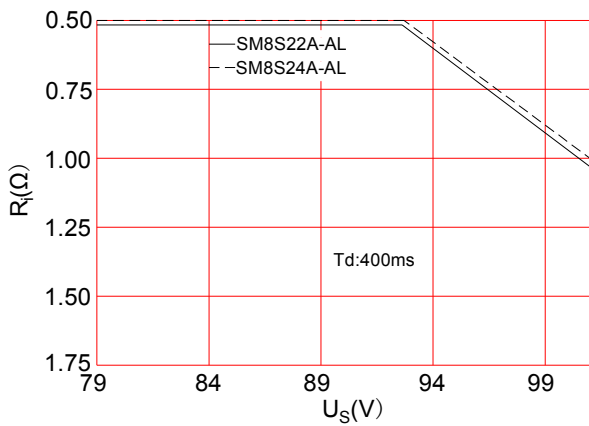


FIG.6: Typical junction capacitance

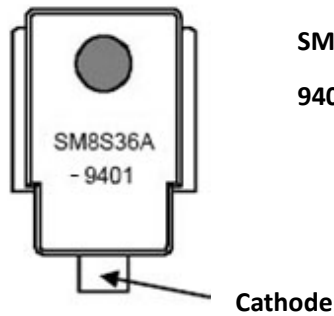


Parameter	12V system	24V system
Us	79~101V	151~202V
Ri	0.5~4Ω	1~8Ω
td	40~400ms	100~350ms
tr	5~10ms	5~10ms

**FIG.8: Parameters for test pulse 5A**



**MARKING**



**SM8S36A:** Device marking code

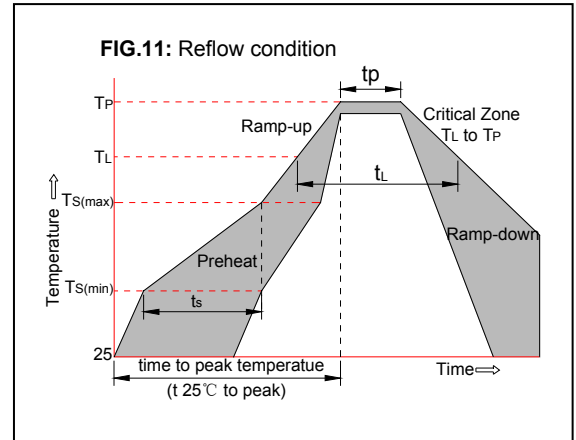
**9401:** “9” --2019 (year)

“4” --4 (month)

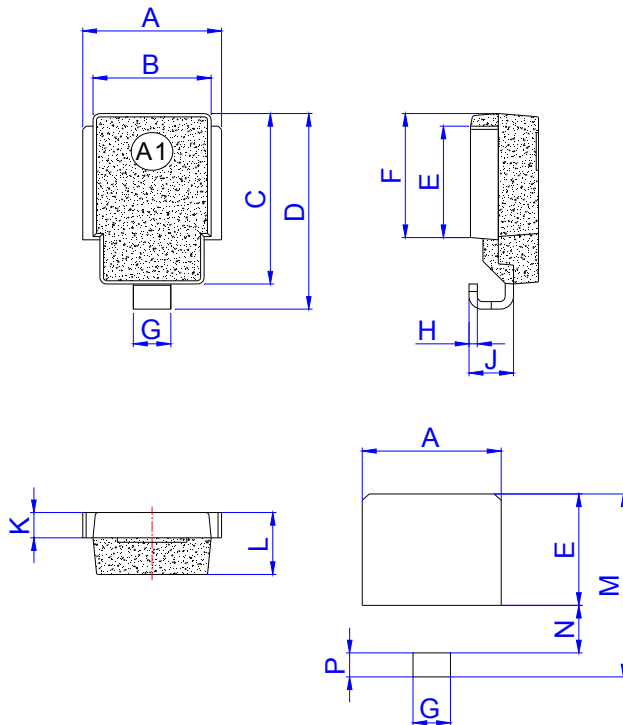
“01” -- (lot)

**SOLDERING PARAMETERS**

Reflow Condition		Pb-Free assembly (see FIG.11)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) ( $t_s$ )	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ )to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquidus)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_p$ )		8 min. Max
Do not exceed		+260°C



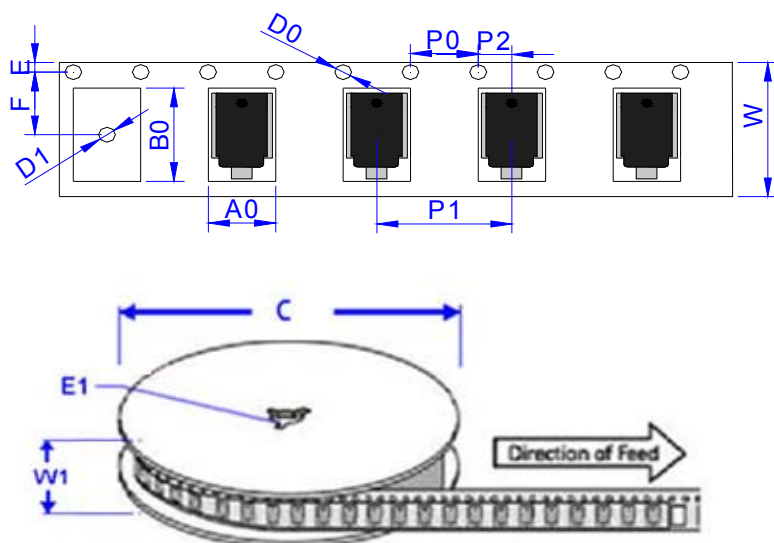
**PACKAGE MECHANICAL DATA**



DO-218AB

Ref.	Dimensions			
	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.	Dimensions	
	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

## ORDERING INFORMATION

PART No.	UNIT WEIGHT (g) typ	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
SM8SxxA-AL	2.985	750	3000	13 inch reel pack

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.

Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.

This document is the third version which is made in 26-Apr.-2021. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.

Copyright©2021 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.

单击下面可查看定价，库存，交付和生命周期等信息

[>>JW\(捷捷微\)](#)