FEATURES

- Junction passivation optimized design passivated anisotropic rectifier technology
- T_J = 175 ℃ capability suitable for high reliability and automotive requirement.
- Available in uni/bi-directional polarity only
- Low leakage current
- Low forward voltage drop
- High surge capability
- Meets ISO7637-2 surge specification (varied by test condition)
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245℃
- Compliant to ROHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC



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
Base P/NHE3 - RoHS-compliant

PRIMARY CHARACTERISTICS	
V_R	14 V to 48 V
P_{PPM}（10/1000μs）	6600W
P_{PPM}（10/10000μs）	5200W
P_D	8 W
I_{FSM}	700A
$T_J$max	175℃
Package	DO-218AB

MAXIMUM RATINGS(T_C=25℃, RH=45%-75%, unless otherwise noted)			
Parameter	**Symbol**	**Value**	**Unit**
Peak pulse power dissipation on 10/1000μs waveform	P_{PPM}	6600	Watts
Peak pulse power dissipation on 10/10000μs waveform		5200	Watts
Power dissipation on infinite heat sink at T_C=25℃	P_D	8.0	Watts
Peak pulse current with 10/1000us 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	℃
Typical thermal resistance, junction to case	$R_{\theta JC}$	0.9	℃/W

Note

(1) Non-repetitive current pulse derated above T_A=25℃

ELECTRICAL CHARACTERISTICS

Part Number		V_R	I_T	I_R@V_R		V_{BR} @I_1		Vc @I_{PP}	I_{PP}
Uni-polar	Bi-polar	V	mA	μA@25°C	μA@175°C	min(V)	max (V)	V	A
SM8S14A	SM8S14CA	14.0	5	5	150	15.6	17.2	23.2	284
SM8S15A	SM8S15CA	15.0	5	5	150	16.7	18.5	24.4	270
SM8S16A	SM8S16CA	16.0	5	5	150	17.8	19.7	26.0	253
SM8S17A	SM8S17CA	17.0	5	5	150	18.9	20.9	27.6	239
SM8S18A	SM8S18CA	18.0	5	5	150	20.0	22.1	29.2	226
SM8S20A	SM8S20CA	20.0	5	5	150	22.2	24.5	32.4	204
SM8S22A	SM8S22CA	22.0	5	5	150	24.4	26.9	35.5	186
SM8S24A	SM8S24CA	24.0	5	5	150	26.7	29.5	38.9	170
SM8S26A	SM8S26CA	26.0	5	5	150	28.9	31.9	42.1	157
SM8S28A	SM8S28CA	28.0	5	5	150	31.1	34.4	45.4	145
SM8S30A	SM8S30CA	30.0	5	5	150	33.3	36.8	48.4	136
SM8S33A	SM8S33CA	33.0	5	5	150	36.7	40.6	53.3	124
SM8S36A	SM8S36CA	36.0	5	5	150	40.0	44.2	58.1	114
SM8S40A	SM8S40CA	40.0	5	5	150	44.4	49.1	64.5	102
SM8S43A	SM8S43CA	43.0	5	5	150	47.8	52.8	69.4	95
SM8S48A	SM8S48CA	48.0	5	5	150	53.3	58.7	80.6	82

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:10/1000μs

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

RATINGS AND CHARACTERISTICS CURVES (T_A=25℃, unless otherwise noted)

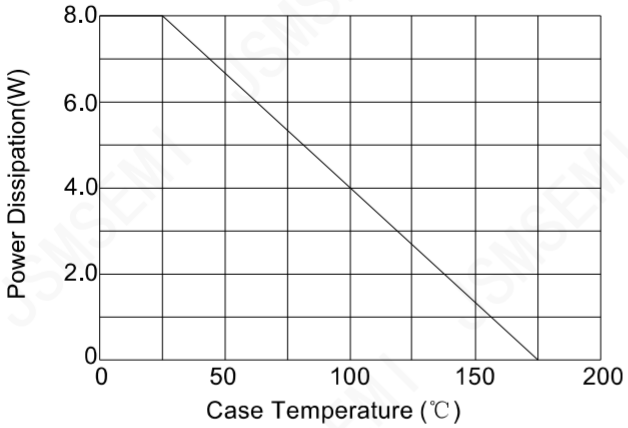


FIG.1: Power Derating Curve

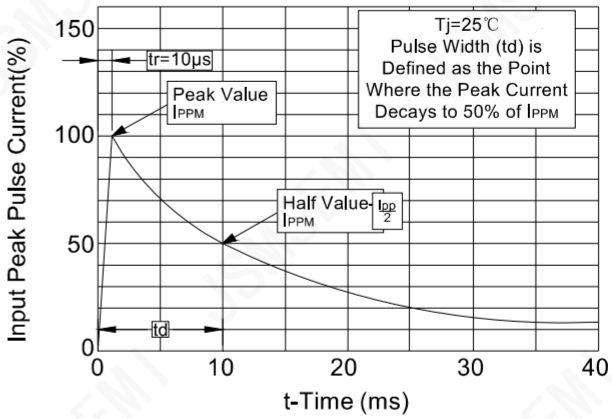


FIG.2: Pulse Waveform

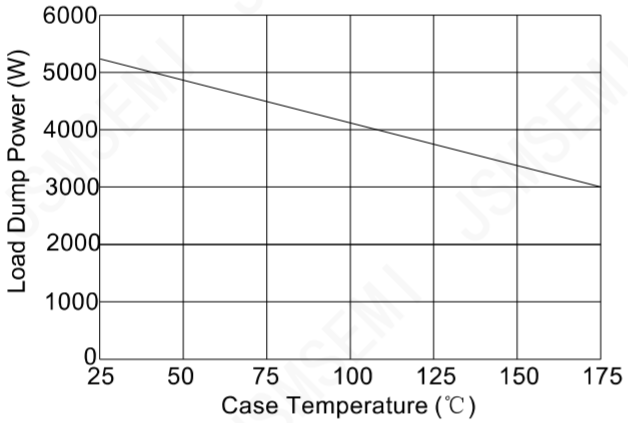


FIG.3: Load Dump Power Characteristics (10ms Exponential Wavaform)

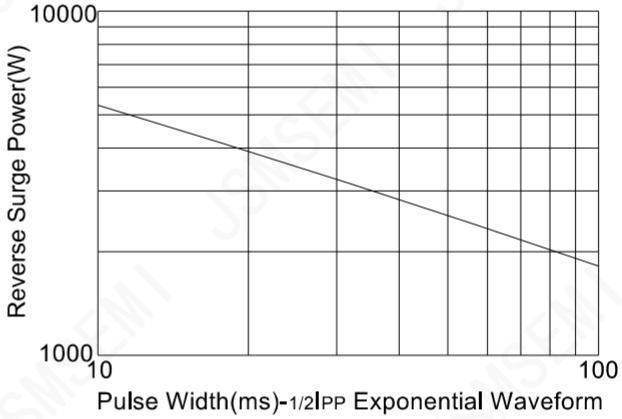


FIG.4: Reverse Power Capability

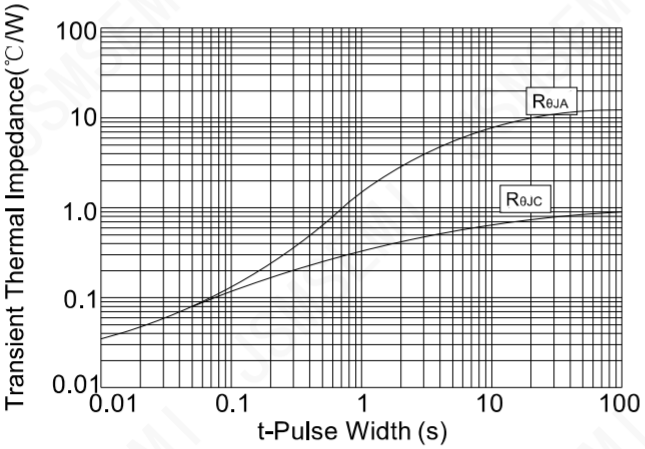


FIG.5: Typical Transient Thermal Impedance

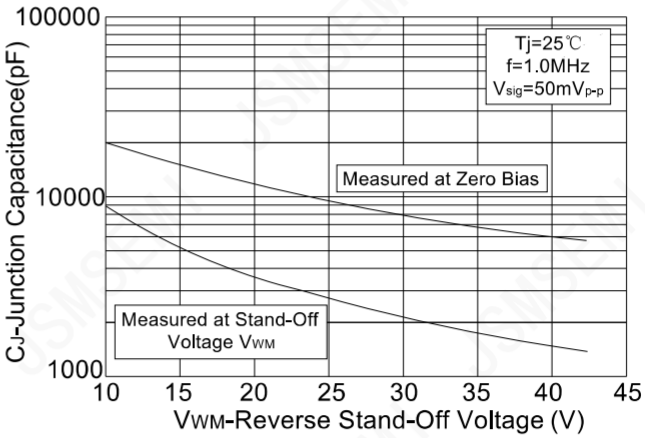


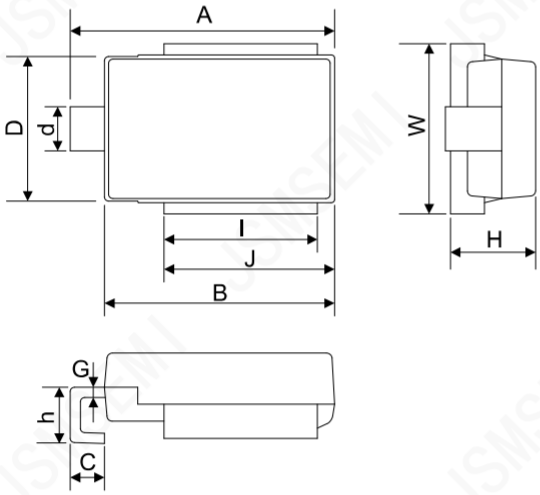
FIG.6: Typical Junction Capacitance

PINNING INFORMATION

Pin	Simplified outline	Symbol
Uni-Directional Pin1 cathode Pin2 anode		
Bi-Directional		

PACKAGE MECHANICAL DATA

DO-218AB



Dimensions	Millimeters	
	Min.	Max.
A	15.00	16.00
B	13.30	13.70
C	1.50	2.50
D	8.30	8.70
d	2.30	3.10
G	0.50	0.70
H	4.70	5.20
h	2.50	3.90
I	8.70	9.30
J	9.70	10.30
W	9.50	10.50

Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

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