

FEATURES

- | ISO10605(C=330pF, R=330Ω):±30kV Air , ±30kV(Contact)
- | HBM ≥±8kV & CDM ≥±2kV
- | Rated for load dump protection (ISO16750-2)in automotive applications
- | Meets ISO7637-2 Requirements
- | Meet AEC-Q101 Requirements
- | Green molding compound as per IEC61249 standard



DO-218AB



Schematic Symbol

MECHANICAL DATA

- | Case : Molded plastic,DO-218AB
- | Meets MSL Level 1 per J-STD-020
- | Only suitable for P-type chip

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

MAXIMUM RATINGS (T_A=25°C)

Parameter	Symbol	Value	Unit
10/1,000us Peak Pulse Power Dissipation on T _A =25°C	P _{PPM1} ⁽¹⁾	6600	W
10/10,000us Peak Pulse Power Dissipation on T _A =25°C	P _{PPM2}	5200	W
Peak Surge Current (60Hz half wave)	I _{FSM}	700	A
Typical Thermal Resistance Junction to Case	R _{θJC}	0.90	°C/W
Power Dissipation on infinite heatsink T _C =25°C	P _D	8	W
ISO10605 (C=330pF, R=330Ω) Contact	V _{ESD}	30	kV
ISO10605 (C=330pF, R=330Ω) Air	V _{ESD}	30	kV
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to 175	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Part Number	Device Marking Code	Reverse Stand-off Voltage	Breakdown Voltage Min.@I _T	Breakdown Voltage Max.@I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Reverse Leakage @V _{RWM} T _J =175°C
		V _{RWM} (V)	V _{BR} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A) ⁽¹⁾	I _R (uA) ⁽¹⁾	I _R (uA)
SM8S10CA	SM8S10CA	10.0	11.1	12.3	5.0	17.0	388	1.0	150
SM8S11CA	SM8S11CA	11.0	12.2	13.5	5.0	18.2	363	1.0	150
SM8S12CA	SM8S12CA	12.0	13.3	14.7	5.0	19.9	332	1.0	150
SM8S13CA	SM8S13CA	13.0	14.4	15.9	5.0	21.5	307	1.0	150
SM8S14CA	SM8S14CA	14.0	15.6	17.2	5.0	23.2	284	1.0	150
SM8S15CA	SM8S15CA	15.0	16.7	18.5	5.0	24.4	270	1.0	150
SM8S16CA	SM8S16CA	16.0	17.8	19.7	5.0	26.0	254	1.0	150
SM8S17CA	SM8S17CA	17.0	18.9	20.9	5.0	27.6	239	1.0	150
SM8S18CA	SM8S18CA	18.0	20.0	22.1	5.0	29.2	226	0.5	150
SM8S20CA	SM8S20CA	20.0	22.2	24.5	5.0	32.4	204	0.5	150
SM8S22CA	SM8S22CA	22.0	24.4	26.9	5.0	35.5	186	0.5	150
SM8S24CA	SM8S24CA	24.0	26.7	29.5	5.0	38.9	170	0.5	150
SM8S26CA	SM8S26CA	26.0	28.9	31.9	5.0	42.1	157	0.5	150
SM8S28CA	SM8S28CA	28.0	31.1	34.4	5.0	45.4	145	0.5	150
SM8S30CA	SM8S30CA	30.0	33.3	36.8	5.0	48.4	136	0.5	150
SM8S33CA	SM8S33CA	33.0	36.7	40.6	5.0	53.3	124	0.5	150
SM8S36CA	SM8S36CA	36.0	40.0	44.2	5.0	58.1	114	0.5	150
SM8S40CA	SM8S40CA	40.0	44.4	49.1	5.0	64.5	102	0.5	150
SM8S43CA	SM8S43CA	43.0	47.8	52.8	5.0	69.4	95	0.5	150
SM8S48CA	SM8S48CA	48.0	53.3	58.7	5.0	80.6	82	0.5	150
SM8S51CA	SM8S51CA	51.0	56.7	62.7	5.0	82.4	80.1	0.5	150
SM8S54CA	SM8S54CA	54.0	60.0	66.3	5.0	87.1	75.8	0.5	150
SM8S58CA	SM8S58CA	58.0	64.4	71.2	5.0	93.6	70.5	0.5	150
SM8S60CA	SM8S60CA	60.0	66.7	73.7	5.0	96.8	68.2	0.5	150
SM8S64CA	SM8S64CA	64.0	71.1	78.6	5.0	103	64.1	0.5	150
SM8S70CA	SM8S70CA	70.0	77.8	86.0	5.0	113	58.4	0.5	150
SM8S75CA	SM8S75CA	75.0	83.3	92.1	5.0	121	54.5	0.5	150
SM8S78CA	SM8S78CA	78.0	86.7	95.8	5.0	126	52.4	0.5	150
SM8S85CA	SM8S85CA	85.0	94.4	104.0	5.0	137	48.2	0.5	150

NOTES:

1.Non-repetitive current pulse per Fig.3 and derated above TA=25°C per Fig.1

CHARACTERISTIC CURVES

Fig.1 Pulse Power Rating Curve

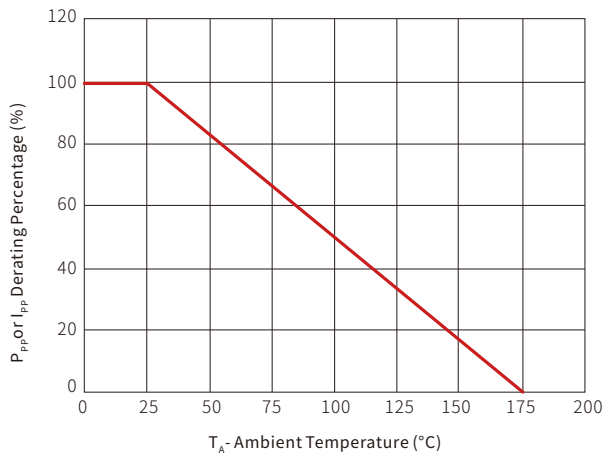


Fig.2 Load Dump Power Characteristics

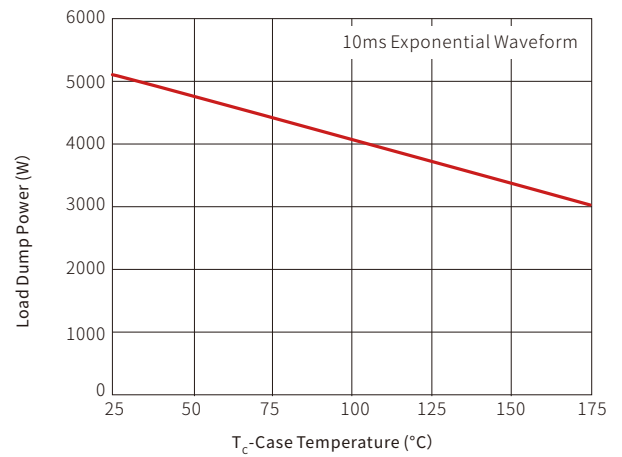


Fig.3 Pulse Waveform

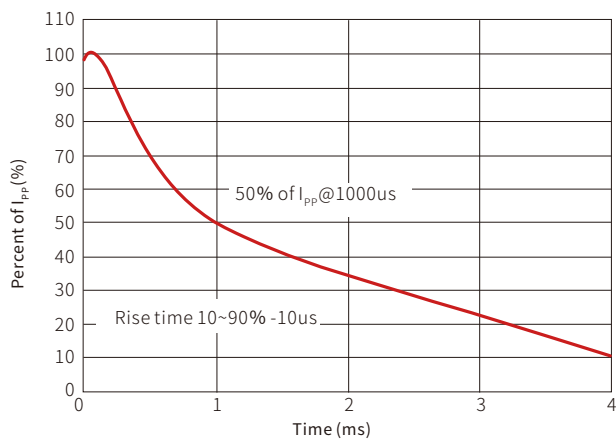


Fig.4 Peak Pulse Power Rating Curve

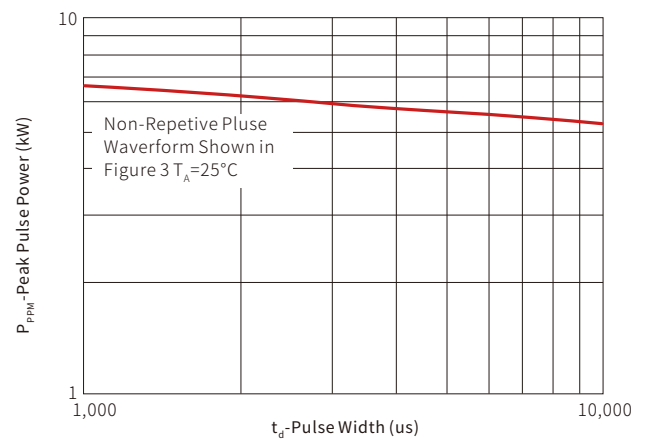


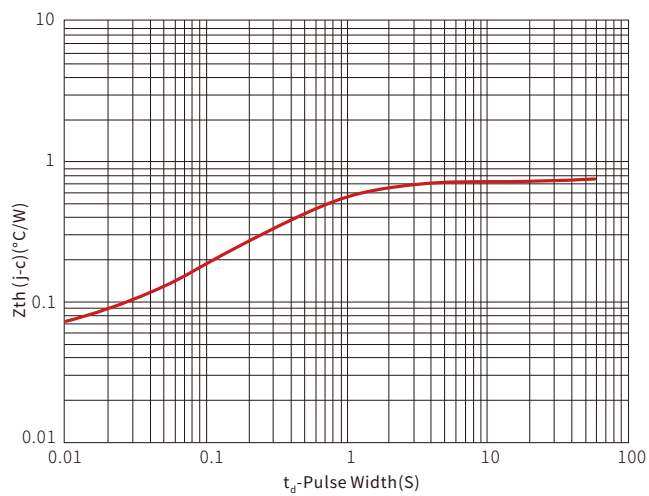
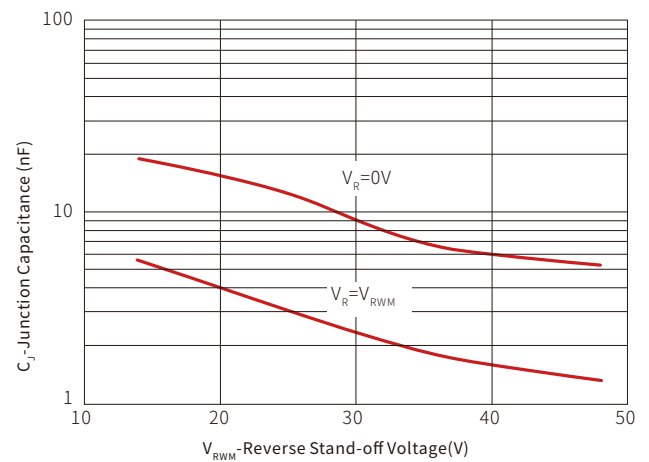
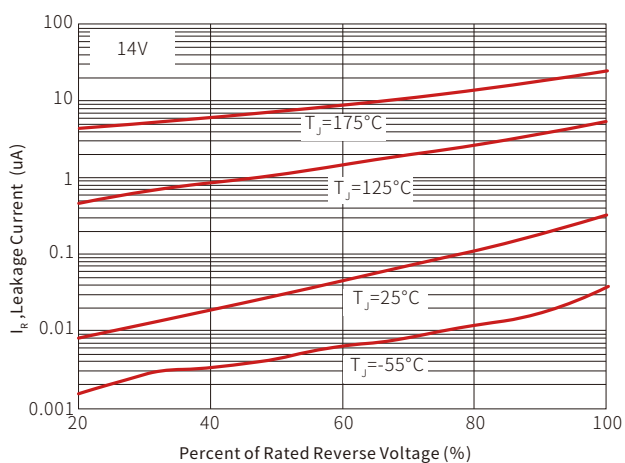
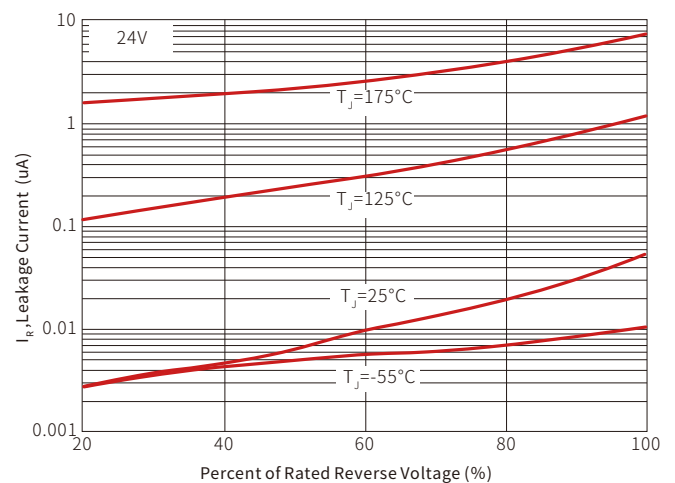
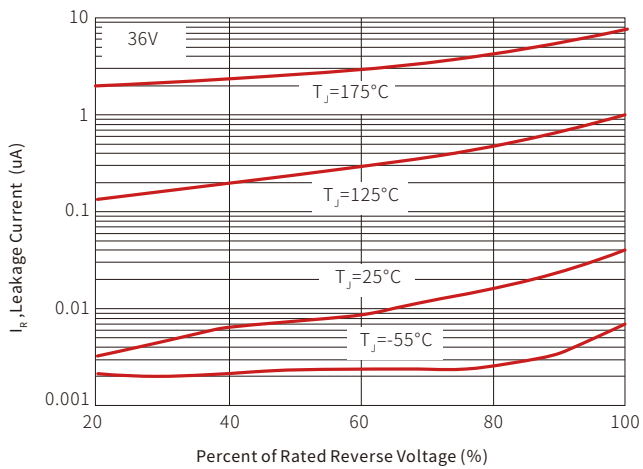
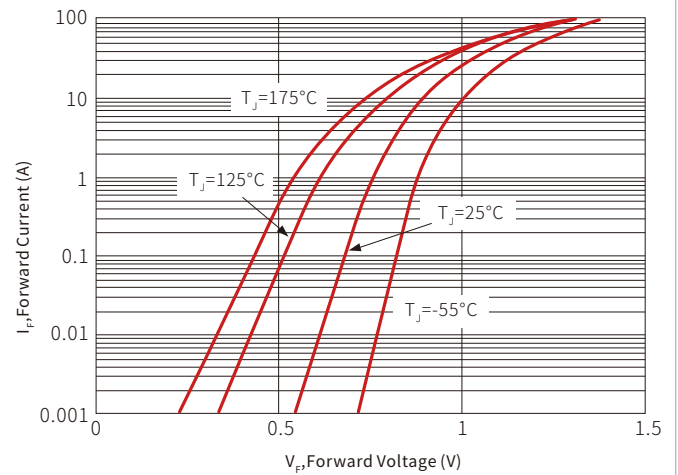
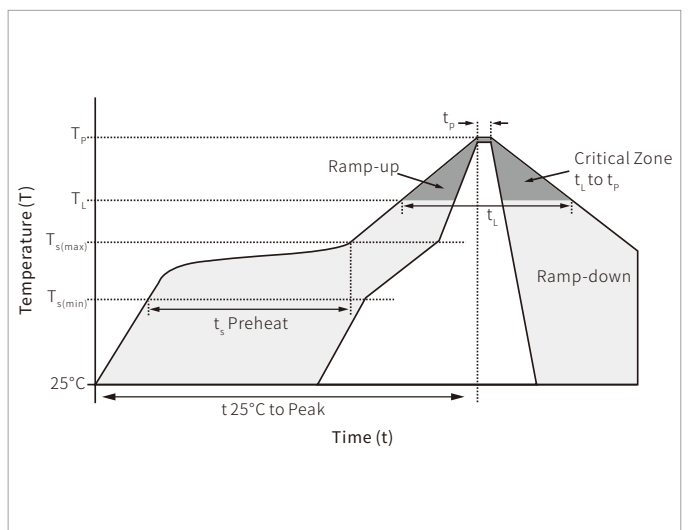
Fig.5 Typical Transient Thermal Impedance

Fig.6 Typical Capacitance

Fig.7 Typical Reverse Characteristics

Fig.8 Typical Reverse Characteristics


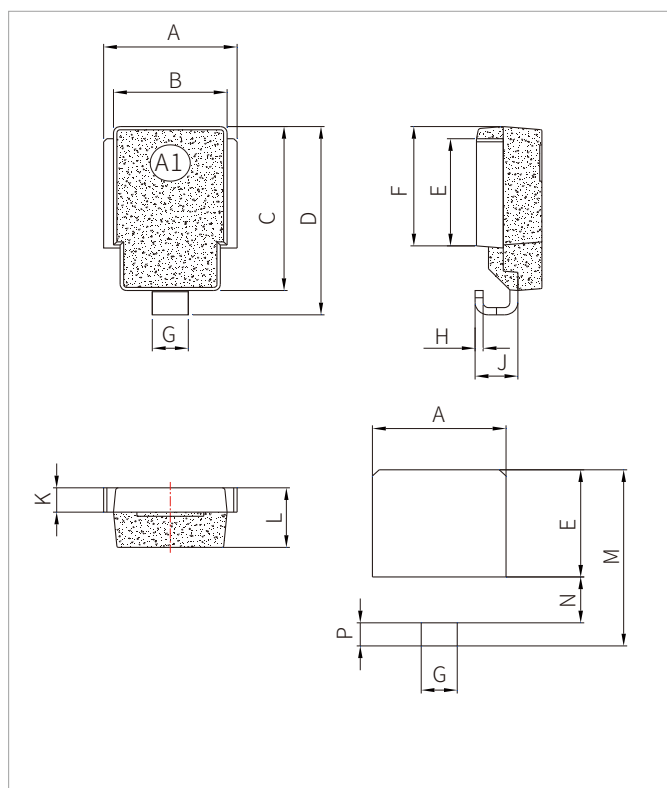
Fig.9 Typical Reverse Characteristics

Fig.10 Typical Forward Characteristics


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(min)}$)	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/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Time (min to max) (t_L)	60 – 150 seconds
Peak Temperature (T_p)		260°C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



DO-218AB PACKAGE INFORMATION



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

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SM8SxxCA	DO-218AB	750PCS	13"

Headquarters

No.3387 Shendu Road
Pujiang I&E Park
Minhang Shanghai China
201000

Hotline

400-021-5756

Web

<https://www.semiware.com>

Sales Center

Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service

Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support

Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions

Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

By QR Code

Website



Wechat

To find your local partner within Semiware' s global website: www.semiware.com

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.