

DO-214AB(SMC)

FEATURES

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- 5000W peak pulse power capability with a 10/1000us waveform
- Low incremental surge resistance, excellent clamping capability Very fast response time
- Component in accordance to RoHS
- Solder dip 265°C max. 10s, per JESD 22-B106
- AEC-Q101 Qualified
- Automotive Product No.: Base P/N-H

TYPICAL APPLICATIONS

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

MECHANICAL DATA

Case: DO-214AB(SMC)

Molding compound meets UL 94 V-0 flammability rating Halogen-free, RoHS-compliant

Terminals: Tin plated leads, solderable per J-STD-002 and JESD 22-B102

Primary Characteristics

V_{BR}	24V to 100V
P_{DPM} (10 x 1000us)	5000 W
P_D	6.5 W
I_{FSM}	300A(Uni)
T_J max.	150°C

Maximum Ratings (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with 10/1000us waveform ⁽¹⁾⁽²⁾ (fig.1)	P_{PPM}	5000	W
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	6.5	W
Peak pulse current with 10/1000us waveform ⁽¹⁾	I_{PPM}	See next table	A
Electrostatic Discharge	IEC61000-4-2 air discharge	± 30	kV
	IEC61000-4-2 contact discharge	± 30	kV
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

Thermal Characteristics (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Typ.	Unit
Thermal resistance Junction to Lead	$R_{th_{JL}}$	15	°C/W
Thermal resistance Junction to Ambient ⁽³⁾	$R_{th_{JA}}$	75	°C/W

Notes:

⁽¹⁾ Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ per Fig.2.

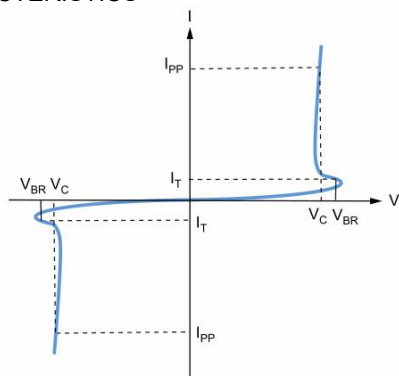
⁽²⁾ Mounted on 0.6 x 0.6" (16.0 x 16.0 mm) copper pads to each terminal

⁽³⁾ Mounted on minimum recommended pad layout

Electrical Characteristics (Ta = 25°C unless otherwise noted)

Device Type	Device Marking Code	Reverse Stand off Voltage VR	Breakdown Voltage VBR (Volts) @ IT		Test Current	Maximum Clamping Voltage VC@Ipp(V)	Maximum Peak Pulse Current	Max. Reverse Leakage @ VRWM
BI-POLAR	BI	VRWM(V)	Min.(V)	Max.(V)	IT(mA)	VC MAX.(V)	IPP(A)	IR(μA)
5.0SMDJ24CA-N	5NEZ	24	26.7	29.5	1	31.1	129.0	5
5.0SMDJ26CA-N	5NFE	26	28.9	31.9	1	33.6	119.0	5
5.0SMDJ28CA-N	5NFG	28	31.1	34.4	1	36.3	110.0	5
5.0SMDJ30CA-N	5NFK	30	33.3	36.8	1	38.7	103.0	5
5.0SMDJ33CA-N	5NFM	33	36.7	40.6	1	42.6	93.9	5
5.0SMDJ36CA-N	5NFP	36	40.0	44.2	1	46.4	86.1	5
5.0SMDJ40CA-N	5NFR	40	44.4	49.1	1	51.6	77.6	5
5.0SMDJ43CA-N	5NFT	43	47.8	52.8	1	55.5	72.1	5
5.0SMDJ45CA-N	5NFV	45	50.0	55.3	1	58.1	68.8	5
5.0SMDJ48CA-N	5NFX	48	53.3	58.9	1	61.9	64.7	5
5.0SMDJ51CA-N	5NFZ	51	56.7	62.7	1	65.9	60.7	5
5.0SMDJ54CA-N	5NGE	54	60.0	66.3	1	69.6	57.5	5
5.0SMDJ58CA-N	5NGG	58	64.4	71.2	1	74.8	53.5	5
5.0SMDJ60CA-N	5NGK	60	66.7	73.7	1	77.4	51.7	5
5.0SMDJ64CA-N	5NGM	64	71.1	78.6	1	82.4	48.6	5
5.0SMDJ70CA-N	5NGP	70	77.8	86.0	1	90.4	44.3	5
5.0SMDJ75CA-N	5NGR	75	83.3	92.1	1	96.8	41.4	5
5.0SMDJ78CA-N	5NGT	78	86.7	95.8	1	100.8	39.7	5
5.0SMDJ80CA-N	5NGS	80	89.4	98.8	1	104.0	38.5	5
5.0SMDJ85CA-N	5NGV	85	94.4	104.0	1	110.0	36.5	5
5.0SMDJ90CA-N	5NGX	90	100.0	111.0	1	116.8	34.3	5
5.0SMDJ95CA-N	5NGY	95	106.0	118.0	1	124.8	32.0	5
5.0SMDJ100CA-N	5NGZ	100	111.0	123.0	1	129.6	30.9	5

I - V CURVE CHARACTERISTICS



V_{BR}.....Breakdown voltage
I_T.....Reverse test current
V_C.....Clamping voltage
I_{PP}.....Peak pulse surge current

Ratings and Characteristics Curves ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 - Power Derating Curve

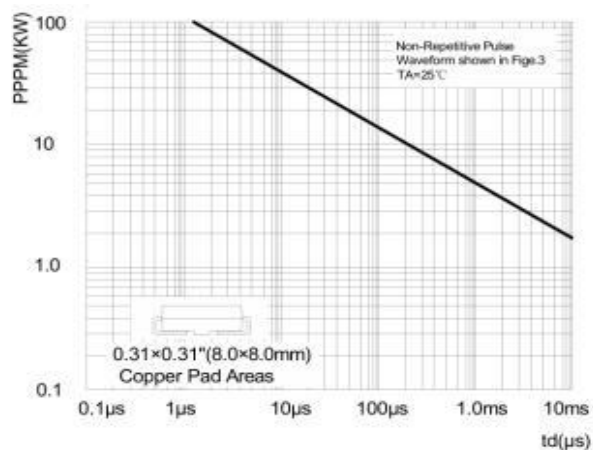


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

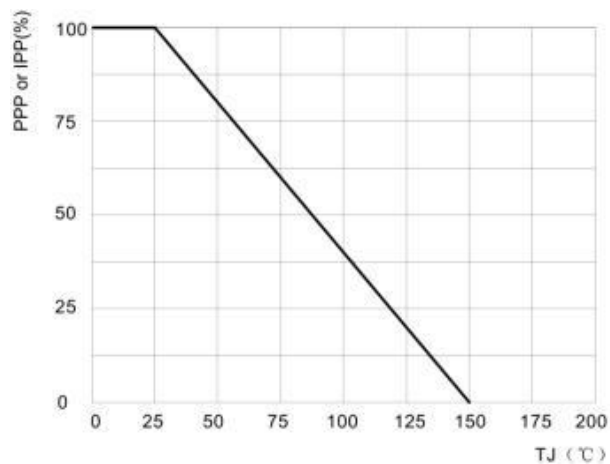


Fig. 3 - Pulse Waveform

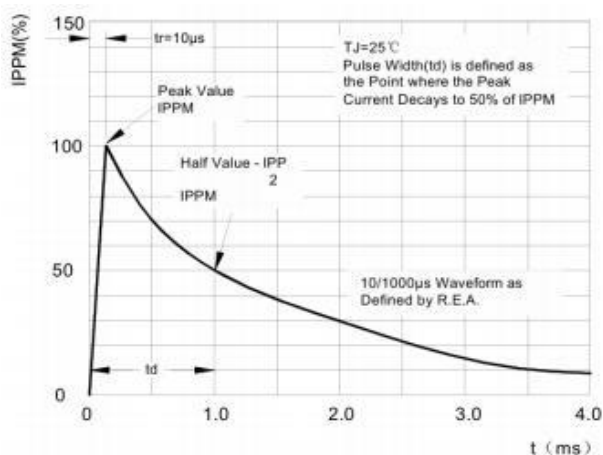


Fig. 4 - Typical Transient Thermal Impedance

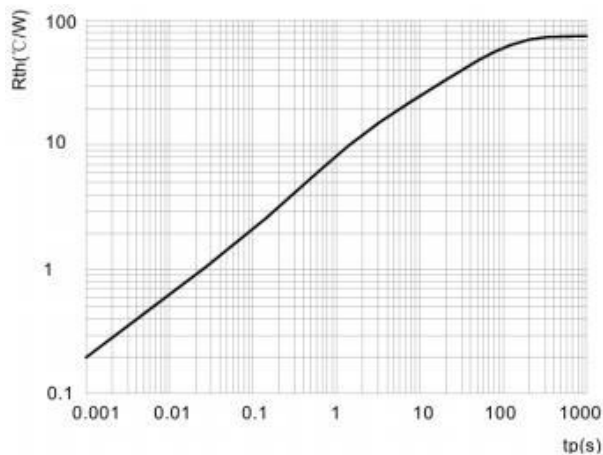


Fig. 5 - Maximum Non-Repetitive Surge Current

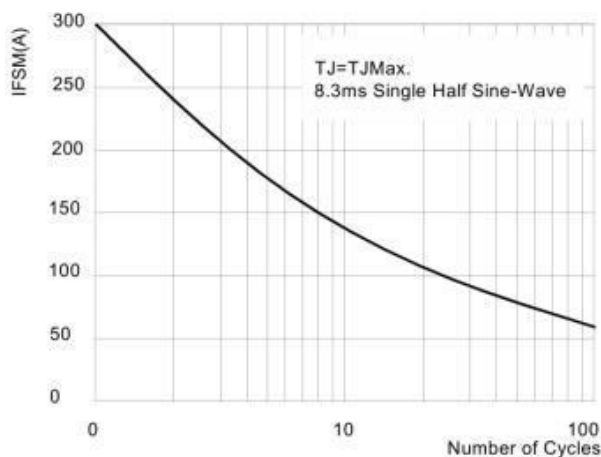


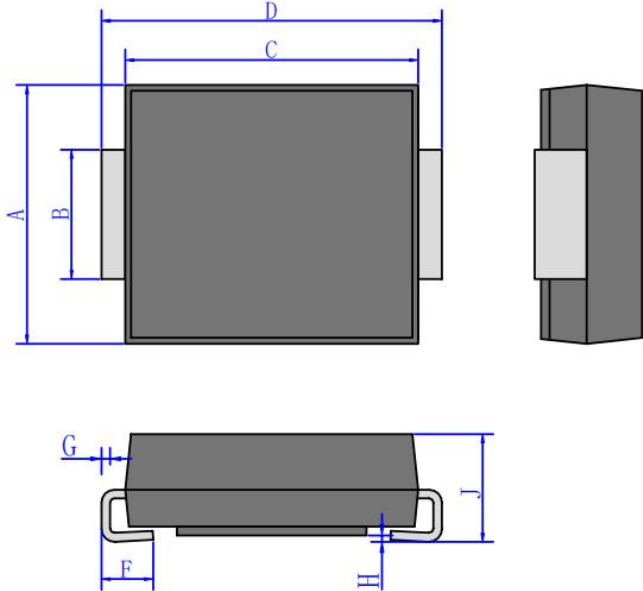
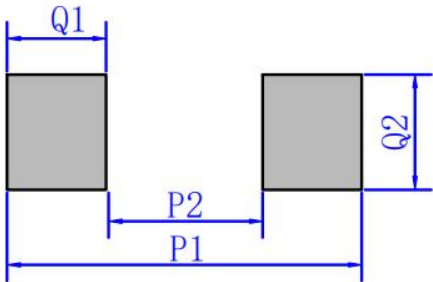
Fig. 6 - Steady State Power Dissipation



Ordering Information

PREFERED	MIN. PACKAGE (pcs)	INNER BOX QUANTITY (pcs)	OUTER CARTON QUANTITY (pcs)	DELIVERY MODE
5.0SMDJ**CA-N	3000	6000	42000	13" reel

Package Outline Dimensions in millimeters

DO-214AB(SMC)	Dim	Min	Max
	A	5.59	6.22
	B	2.85	3.27
	C	6.60	7.11
	D	7.75	8.13
	F	0.76	1.52
	G	0.15	0.31
	H	0.05	0.20
	J	1.99	2.61
MOUNTING PAD LAYOUT	Dim	Value(mm)	
	P1	9.40	
	P2	4.40	
	Q1	2.50	
	Q2	3.30	

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