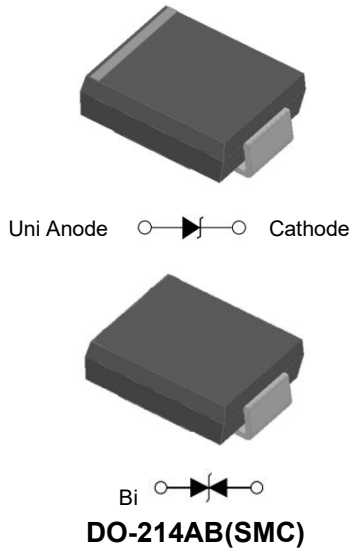




Primary Characteristics	
V_{BR}	6.4V to 543V
P_{DPM} (10 x 1000us)	5000 W
P_D	6.5 W
I_{FSM}	300A(Uni)
T_J max.	150°C

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
- High temperature soldering guaranteed: 260°C/10s at terminals
- Meets MSL level 1 Component in accordance to RoHS
- 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

Maximum Ratings ($T_a = 25^\circ\text{C}$ 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
Peak forward surge current 8.3ms single half sine-wave ⁽³⁾	I_{FSM}	300(Uni)	A
Instantaneous forward voltage ⁽⁴⁾	@ 100A	V_F	3.5/5.0(Uni)
	@ 1A		1.5(Uni)
Electrostatic Discharge	IEC61000-4-2 air discharge	ESD	± 30
	IEC61000-4-2 contact discharge		± 30
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

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

Parameter	Symbol	Typ.	Unit
Thermal resistance Junction to Lead	R_{thJL}	15	°C/W
Thermal resistance Junction to Ambient ⁽⁵⁾	R_{thJA}	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⁾ Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

⁽⁴⁾ $V_F=3.5V$ Max for devices of $V_{BR} \leq 220V$, and $V_F=5.0V$ Max for devices of $V_{BR} > 220V$.

⁽⁵⁾ Mounted on minimum recommended pad layout

5.0SMDJ5.0A/CA THRU 5.0SMDJ440A/CA

Surface Mount Transient Voltage Suppressors

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

Part Number (Uni)	Part Number (Bi)	Marking		Reverse Stand off Voltage V _R (Volts)	Breakdown Voltage V _{BR} (Volts) @ I _r		Test Current I _r (mA)	Maximum Clamping Voltage V _{C@Ipp} (V)	Maximum Peak Pulse Current I _{pp} (A)	Maximum Reverse Leakage I _{R@V_R} (μA)
		Uni	Bi		Min.	Max.				
5.0SMDJ5.0A	5.0SMDJ5.0CA	5PDE	5BDE	5.00	6.40	7.00	10	9.2	543.5	1000
5.0SMDJ6.0A	5.0SMDJ6.0CA	5PDG	5BDG	6.00	6.67	7.37	10	10.3	485.4	1000
5.0SMDJ6.5A	5.0SMDJ6.5CA	5PDK	5BDK	6.50	7.22	7.98	10	11.2	446.4	1000
5.0SMDJ7.0A	5.0SMDJ7.0CA	5PDM	5BDM	7.00	7.78	8.60	10	12.0	416.7	500
5.0SMDJ7.5A	5.0SMDJ7.5CA	5PDP	5BDP	7.50	8.33	9.21	10	12.9	387.6	500
5.0SMDJ8.0A	5.0SMDJ8.0CA	5PDR	5BDR	8.00	8.89	9.83	10	13.6	367.6	200
5.0SMDJ8.5A	5.0SMDJ8.5CA	5PDT	5BDT	8.50	9.44	10.40	10	14.4	347.2	100
5.0SMDJ9.0A	5.0SMDJ9.0CA	5PDV	5BDV	9.00	10.00	11.10	10	15.4	324.7	10
5.0SMDJ10A	5.0SMDJ10CA	5PDX	5BDX	10.00	11.10	12.30	10	17.0	294.1	5
5.0SMDJ11A	5.0SMDJ11CA	5PDZ	5BDZ	11.00	12.20	13.50	10	18.2	274.7	5
5.0SMDJ12A	5.0SMDJ12CA	5PEE	5BEE	12.00	13.30	14.70	10	19.9	252.0	5
5.0SMDJ13A	5.0SMDJ13CA	5PEG	5BEG	13.00	14.40	15.90	10	21.5	233.0	5
5.0SMDJ14A	5.0SMDJ14CA	5PEK	5BEK	14.00	15.60	17.20	10	23.2	216.0	5
5.0SMDJ15A	5.0SMDJ15CA	5PEM	5BEM	15.00	16.70	18.50	1	24.4	205.0	5
5.0SMDJ16A	5.0SMDJ16CA	5PEP	5BEP	16.00	17.80	19.70	1	26.0	193.0	5
5.0SMDJ17A	5.0SMDJ17CA	5PER	5BER	17.00	18.90	20.90	1	27.6	181.0	5
5.0SMDJ18A	5.0SMDJ18CA	5PET	5BET	18.00	20.00	22.10	1	29.2	172.0	5
5.0SMDJ20A	5.0SMDJ20CA	5PEV	5BEV	20.00	22.20	24.50	1	32.4	155.0	5
5.0SMDJ22A	5.0SMDJ22CA	5PEX	5BEX	22.00	24.40	26.90	1	35.5	141.0	5
5.0SMDJ24A	5.0SMDJ24CA	5PEZ	5BEZ	24.00	26.70	29.50	1	38.9	129.0	5
5.0SMDJ26A	5.0SMDJ26CA	5PFE	5BFE	26.00	28.90	31.90	1	42.1	119.0	5
5.0SMDJ28A	5.0SMDJ28CA	5PFG	5BFG	28.00	31.10	34.40	1	45.4	110.0	5
5.0SMDJ30A	5.0SMDJ30CA	5PFK	5BFK	30.00	33.30	36.80	1	48.4	103.0	5
5.0SMDJ33A	5.0SMDJ33CA	5PFM	5BFM	33.00	36.70	40.60	1	53.3	93.9	5
5.0SMDJ36A	5.0SMDJ36CA	5PFP	5BFP	36.00	40.00	44.20	1	58.1	86.1	5
5.0SMDJ40A	5.0SMDJ40CA	5PFR	5BFR	40.00	44.40	49.10	1	64.5	77.6	5
5.0SMDJ43A	5.0SMDJ43CA	5PFT	5BFT	43.00	47.80	52.80	1	69.4	72.1	5
5.0SMDJ45A	5.0SMDJ45CA	5PFV	5BFV	45.00	50.00	55.30	1	72.7	68.8	5
5.0SMDJ48A	5.0SMDJ48CA	5PFX	5BFX	48.00	53.30	58.90	1	77.4	64.7	5
5.0SMDJ51A	5.0SMDJ51CA	5PFZ	5BFZ	51.00	56.70	62.70	1	82.4	60.7	5
5.0SMDJ54A	5.0SMDJ54CA	5PGE	5BGE	54.00	60.00	66.30	1	87.1	57.5	5
5.0SMDJ58A	5.0SMDJ58CA	5PGG	5BGG	58.00	64.40	71.20	1	93.6	53.5	5

5.0SMDJ5.0A/CA THRU 5.0SMDJ440A/CA

Surface Mount Transient Voltage Suppressors

Part Number (Uni)	Part Number (Bi)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_R		Test Current I_T (mA)	Maximun Clamping Voltage $V_C@I_{pp}$ (V)	Maximum Peak Pulse Current I_{pp} (A)	Maximum Reverse Leakage $I_R@V_R$ (μA)
		Uni	Bi		Min.	Max.				
5.0SMDJ60A	5.0SMDJ60CA	5PGK	5BGK	60.00	66.70	73.70	1	96.8	51.7	5
5.0SMDJ64A	5.0SMDJ64CA	5PGM	5BGM	64.00	71.10	78.60	1	103.0	48.6	5
5.0SMDJ70A	5.0SMDJ70CA	5PGP	5BGP	70.00	77.80	86.00	1	113.0	44.3	5
5.0SMDJ75A	5.0SMDJ75CA	5PGR	5BGR	75.00	83.30	92.10	1	121.0	41.4	5
5.0SMDJ78A	5.0SMDJ78CA	5PGT	5BGT	78.00	86.70	95.80	1	126.0	39.7	5
5.0SMDJ80A	5.0SMDJ80CA	5PGS	5BGS	80.00	89.40	98.80	1	130.0	38.5	5
5.0SMDJ85A	5.0SMDJ85CA	5PGV	5BGV	85.00	94.40	104.00	1	137.0	36.5	5
5.0SMDJ90A	5.0SMDJ90CA	5PGX	5BGX	90.00	100.00	111.00	1	146.0	34.3	5
5.0SMDJ100A	5.0SMDJ100CA	5PGZ	5BGZ	100.00	111.00	123.00	1	162.0	30.9	5
5.0SMDJ110A	5.0SMDJ110CA	5PHE	5BHE	110.00	122.00	135.00	1	177.0	28.3	5
5.0SMDJ120A	5.0SMDJ120CA	5PHG	5BHG	120.00	133.00	147.00	1	193.0	26.0	5
5.0SMDJ130A	5.0SMDJ130CA	5PHK	5BHK	130.00	144.00	159.00	1	209.0	24.0	5
5.0SMDJ150A	5.0SMDJ150CA	5PHM	5BHM	150.00	167.00	185.00	1	243.0	20.6	5
5.0SMDJ160A	5.0SMDJ160CA	5PHP	5BHP	160.00	178.00	197.00	1	259.0	19.3	5
5.0SMDJ170A	5.0SMDJ170CA	5PHR	5BHR	170.00	189.00	209.00	1	275.0	18.2	5
5.0SMDJ180A	5.0SMDJ180CA	5PHT	5BHT	180.00	200.00	221.00	1	292.0	17.5	5
5.0SMDJ200A	5.0SMDJ200CA	5PHV	5BHV	200.00	224.00	247.00	1	325.0	15.4	5
5.0SMDJ220A	5.0SMDJ220CA	5PHX	5BHX	220.00	244.00	270.00	1	357.0	14.1	5
5.0SMDJ250A	5.0SMDJ250CA	5PHZ	5BHZ	250.00	279.00	309.00	1	406.0	12.4	5
5.0SMDJ300A	5.0SMDJ300CA	5PJE	5BJE	300.00	335.00	371.00	1	487.0	10.3	5
5.0SMDJ350A	5.0SMDJ350CA	5PJG	5BJG	350.00	391.00	432.00	1	568.0	8.9	5
5.0SMDJ400A	5.0SMDJ400CA	5PJK	5BJK	400.00	447.00	494.00	1	649.0	7.8	5
5.0SMDJ440A	5.0SMDJ440CA	5PJM	5BJM	440.00	492.00	544.00	1	714.0	7.1	5

Notes:

(1) Pulse Test: $t_p \leq 50ms$

(2) Surge current waveform per Fig. 3 and derated per Fig.2

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

Fig. 1 - Power Derating Curve

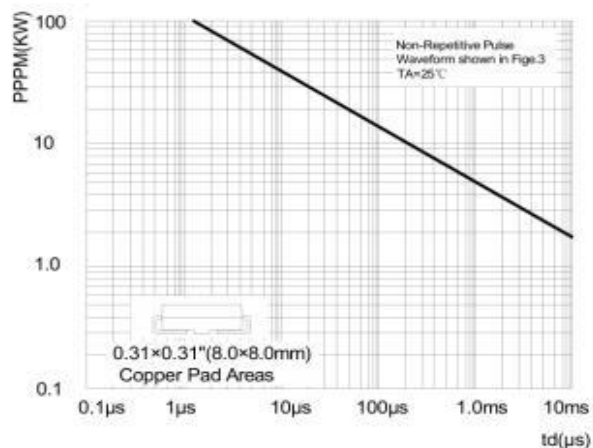


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

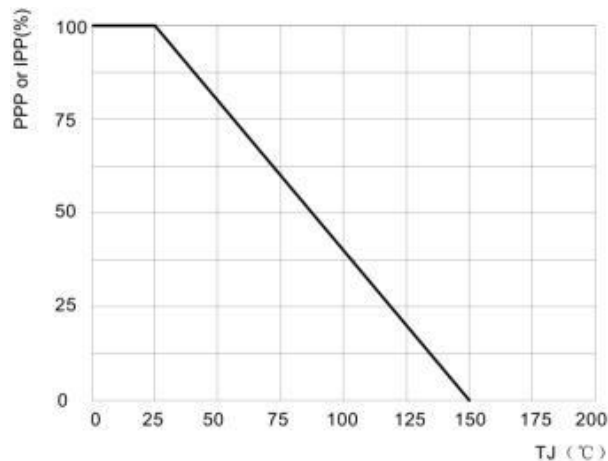


Fig. 3 - Pulse Waveform

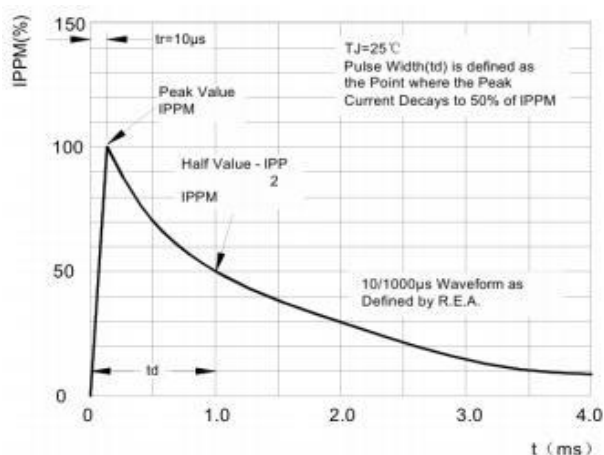


Fig. 4 - Typical Transient Thermal Impedance

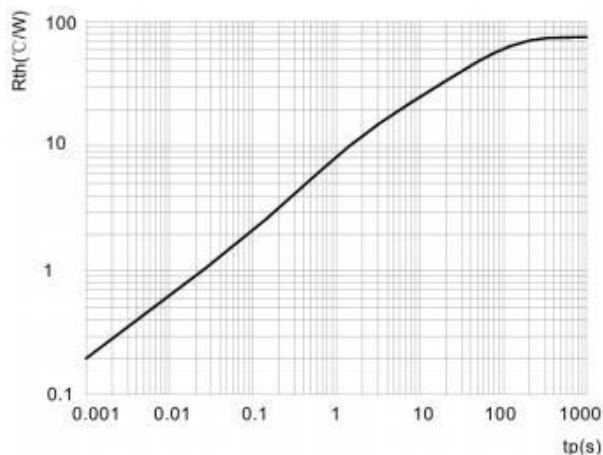


Fig. 5 - Maximum Non-Repetitive Surge Current

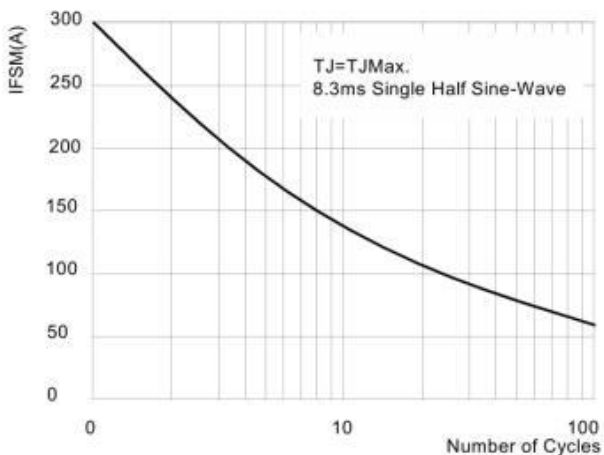


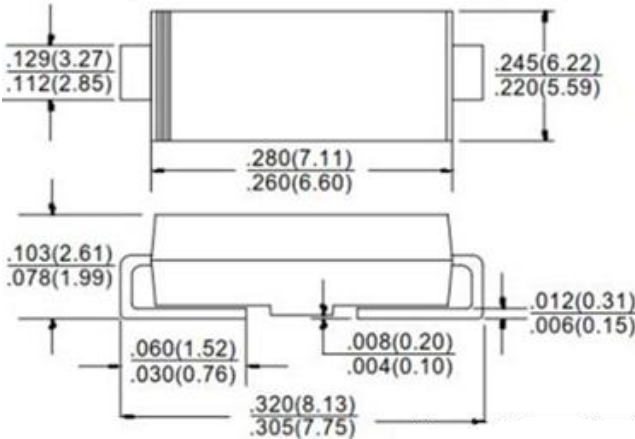
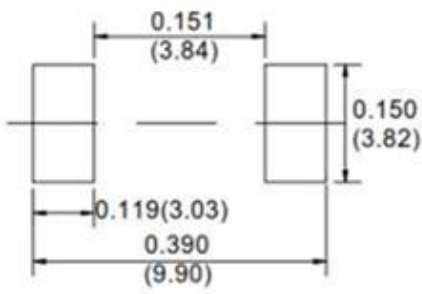
Fig. 6 - Steady State Power Dissipation



Ordering Information

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

Package Outline Dimensions in millimeters

DO-214AB(SMC)	MOUNTING PAD LAYOUT
 Top View Dimensions (mm/inch): Width: .280(7.11) / .260(6.60) Height: .245(6.22) / .220(5.59) Lead Width: .129(3.27) / .112(2.85) Lead Length: .103(2.61) / .078(1.99) Pad Width: .060(1.52) / .030(0.76) Pad Length: .320(8.13) / .305(7.75) Spacing: .008(0.20) / .004(0.10) Standoff: .012(0.31) / .006(0.15) Side View Dimensions (mm/inch): Total Height: .129(3.27) Lead Height: .103(2.61) Pad Height: .060(1.52) Standoff: .012(0.31)	 Mounting Pad Layout Dimensions (mm/inch): Pad Width: 0.151(3.84) Pad Length: 0.150(3.82) Pad Spacing: 0.119(3.03) Total Width: 0.390(9.90)

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