

### DO-214AB (SMC J-Bend)



Dimensions in inches and (millimeters)

Agency	Agency File Number
	E521119

PRIMARY CHARACTERISTICS	
V <sub>RWM</sub>	5.0V to 440V
V <sub>BR</sub>	6.4V to 543V
PPPM	1500W
T <sub>J</sub> max	150°C
Polarity	Uni-directional & Bi-directional
Package	DO-214AB

### FEATURES

- For surface mounted applications in order to optimize board space
- Typical maximum temperature coefficient  $\Delta V_{BR} = 0.1\% \times V_{BR} @ 25^\circ C \times \Delta T$
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Repetition Rate (duty cycle): 0.01%
- Fast response time: typically less than 1.0ps from 0 Volts to BV
- Meet MSL1 Level, per J-STD-020, LF maximum peak of 260 °C
- Plastic package has Underwriters Laboratory Flammability 94V-0
- Matte Tin Lead-free plated



### MECHANICAL DATA

**Case:** JEDEC DO-214AB. Molded plastic

**Terminal:** Solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denoted positive end (cathode) except Bidirectional

### DEVICES FOR BIPOLAR APPLICATION

- For Bidirectional use C or CA Suffix for types SMCJ5.0 thru types SMCJ440 (e.g. SMCJ5.0A , SMCJ440CA)
- Electrical characteristics apply in both directions

### MAXIMUM RATINGS (25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000µs waveform (Note 1, 2)	PPPM	1500	Watts
Peak Pulse Current of on 10/1000µs waveform (Note 1)	IPPM	See Next Table	Amps
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2, 3)	IFSM	200	Amps
Operating junction and Storage Temperature Range	T <sub>J</sub> T <sub>STG</sub>	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	15	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	75	°C/W

Note

- (1) Non-repetitive current pulse above T<sub>A</sub> = 25 °C
- (2) Mounted on 8.0mm x 8.0mm Copper Pads to each terminal

(3) 8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

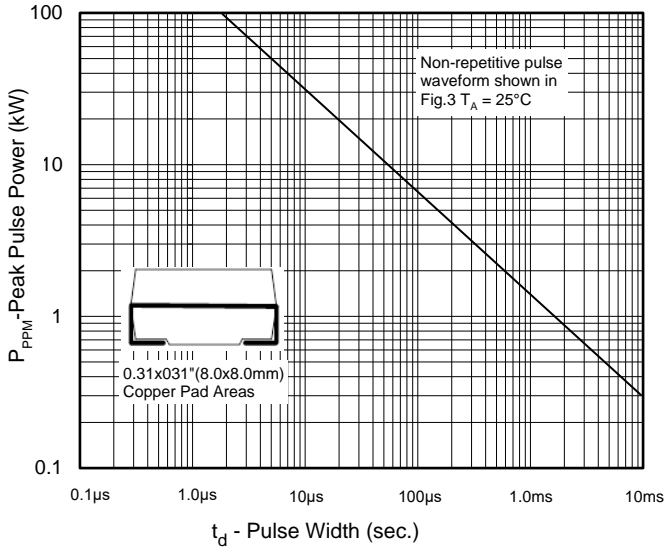
## ELECTRICAL CHARACTERISTICS

PART NUMBER		MARKING CODE		TEST CURRENT IT (mA)	BREAKDOWN VOLTAGE VBR(V) @IT		STAND-OFF VOLTAGE VRWM(V)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V)	MAXIMUM PEAK PULSE CURRENT Ipp (A)	MAXIMUM REVERSE LEAKAGE @ VRWM IR(μA)
UNI- POLAR	BI-POLAR	UNI	BI		MIN	MAX				
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	10	6.40	7.00	5.0	9.2	167.9	800.0
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	10	6.67	7.37	6.0	10.3	150.0	800.0
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	10	7.22	7.98	6.5	11.2	137.9	500.0
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	10	7.78	8.60	7.0	12.0	128.8	200.0
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	1	8.33	9.21	7.5	12.9	119.8	100.0
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	1	8.89	9.83	8.0	13.6	113.6	50.0
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	1	9.44	10.40	8.5	14.4	107.3	20.0
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	1	10.00	11.10	9.0	15.4	100.3	10.0
SMCJ10A	SMCJ10CA	GDX	BDX	1	11.10	12.30	10.0	17.0	90.9	5.0
SMCJ11A	SMCJ11CA	GDZ	BDZ	1	12.20	13.50	11.0	18.2	84.9	1.0
SMCJ12A	SMCJ12CA	GEE	BEE	1	13.30	14.70	12.0	19.9	77.6	1.0
SMCJ13A	SMCJ13CA	GEG	BEG	1	14.40	15.90	13.0	21.5	71.9	1.0
SMCJ14A	SMCJ14CA	GEK	BEK	1	15.60	17.20	14.0	23.2	66.6	1.0
SMCJ15A	SMCJ15CA	GEM	BEM	1	16.70	18.50	15.0	24.4	63.3	1.0
SMCJ16A	SMCJ16CA	GEP	BEP	1	17.80	19.70	16.0	26.0	59.4	1.0
SMCJ17A	SMCJ17CA	GER	BER	1	18.90	20.90	17.0	27.6	56.0	1.0
SMCJ18A	SMCJ18CA	GET	BET	1	20.00	22.10	18.0	29.2	52.9	1.0
SMCJ20A	SMCJ20CA	GEV	BEV	1	22.20	24.50	20.0	32.4	47.7	1.0
SMCJ22A	SMCJ22CA	GEX	BEX	1	24.40	26.90	22.0	35.5	43.5	1.0
SMCJ24A	SMCJ24CA	GEZ	BEZ	1	26.70	29.50	24.0	38.9	39.7	1.0
SMCJ26A	SMCJ26CA	GFE	BFE	1	28.90	31.90	26.0	42.1	36.7	1.0
SMCJ28A	SMCJ28CA	GFG	BFG	1	31.10	34.40	28.0	45.4	34.0	1.0
SMCJ30A	SMCJ30CA	GFK	BFK	1	33.30	36.80	30.0	48.4	31.9	1.0
SMCJ33A	SMCJ33CA	GFM	BFM	1	36.70	40.60	33.0	53.3	29.0	1.0
SMCJ36A	SMCJ36CA	GFP	BFP	1	40.00	44.20	36.0	58.1	26.6	1.0
SMCJ40A	SMCJ40CA	GFR	BFR	1	44.40	49.10	40.0	64.5	24.0	1.0
SMCJ43A	SMCJ43CA	GFT	BFT	1	47.80	52.80	43.0	69.4	22.3	1.0
SMCJ45A	SMCJ45CA	GFV	BFV	1	50.00	55.30	45.0	72.7	21.3	1.0
SMCJ48A	SMCJ48CA	GFX	BFX	1	53.30	58.90	48.0	77.4	20.0	1.0
SMCJ51A	SMCJ51CA	GFZ	BFZ	1	56.70	62.70	51.0	82.4	18.8	1.0
SMCJ54A	SMCJ54CA	GGE	BGE	1	60.00	66.30	54.0	87.1	17.7	1.0
SMCJ58A	SMCJ58CA	GGG	BGG	1	64.40	71.20	58.0	93.6	16.5	1.0
SMCJ60A	SMCJ60CA	G GK	BGK	1	66.70	73.70	60.0	96.8	16.0	1.0
SMCJ64A	SMCJ64CA	GGM	BGM	1	71.10	78.60	64.0	103.0	15.0	1.0
SMCJ70A	SMCJ70CA	G GP	BGP	1	77.80	86.00	70.0	113.0	13.7	1.0
SMCJ75A	SMCJ75CA	GGR	BGR	1	83.30	92.10	75.0	121.0	12.8	1.0
SMCJ78A	SMCJ78CA	G GT	BGT	1	86.70	95.80	78.0	126.0	12.3	1.0
SMCJ85A	SMCJ85CA	G GV	BGV	1	94.40	104.00	85.0	137.0	11.3	1.0
SMCJ90A	SMCJ90CA	G GX	BGX	1	100.00	111.00	90.0	146.0	10.6	1.0
SMCJ100A	SMCJ100CA	G GZ	BGZ	1	111.00	123.00	100.0	162.0	9.5	1.0
SMCJ110A	SMCJ110CA	G HE	BHE	1	122.00	135.00	110.0	177.0	8.7	1.0
SMCJ120A	SMCJ120CA	G HG	BHG	1	133.00	147.00	120.0	193.0	8.0	1.0
SMCJ130A	SMCJ130CA	G HK	BHK	1	144.00	159.00	130.0	209.0	7.4	1.0
SMCJ150A	SMCJ150CA	G HM	BHM	1	167.00	185.00	150.0	243.0	6.4	1.0
SMCJ160A	SMCJ160CA	G HP	BHP	1	178.00	197.00	160.0	259.0	6.0	1.0
SMCJ170A	SMCJ170CA	G HR	BHR	1	189.00	209.00	170.0	275.0	5.6	1.0
SMCJ180A	SMCJ180CA	G HT	BHT	1	201.00	222.00	180.0	292.0	5.2	1.0
SMCJ200A	SMCJ200CA	G HV	BHV	1	224.00	247.00	200.0	324.0	4.7	1.0
SMCJ220A	SMCJ220CA	G HX	BHX	1	246.00	272.00	220.0	356.0	4.3	1.0
SMCJ250A	SMCJ250CA	G HZ	BHZ	1	279.00	309.00	250.0	405.0	3.8	1.0
SMCJ300A	SMCJ300CA	G JE	BJE	1	335.00	371.00	300.0	486.0	3.1	1.0
SMCJ350A	SMCJ350CA	G JG	BJG	1	391.00	432.00	350.0	567.0	2.7	1.0
SMCJ400A	SMCJ400CA	G JK	BJK	1	447.00	494.00	400.0	648.0	2.4	1.0
SMCJ440A	SMCJ440CA	G JM	BJM	1	492.00	543.00	440.0	713.0	2.2	1.0

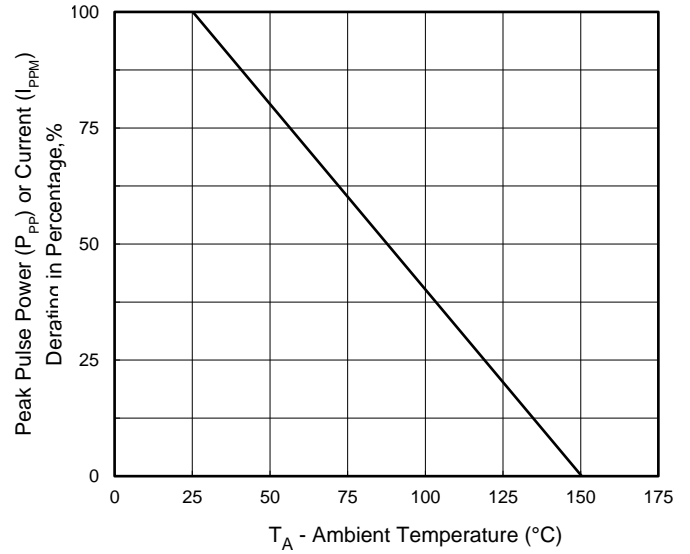
For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

**RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25^\circ\text{C}$  unless otherwise noted)**

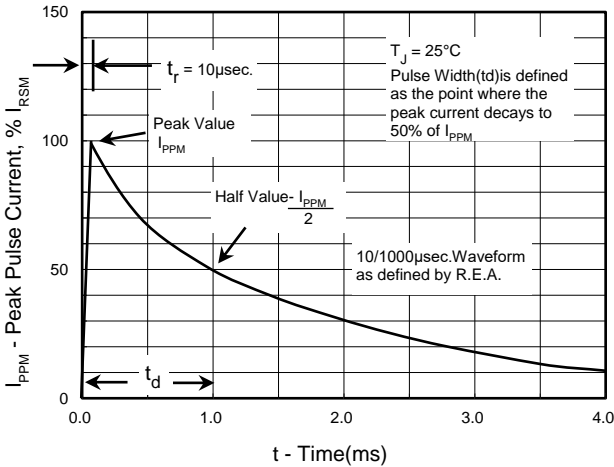
**Peak Pulse Power Rating**



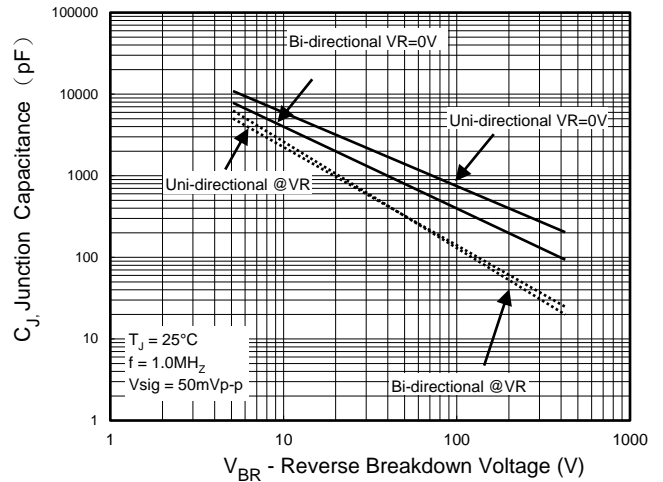
**Pulse Derating Curve**



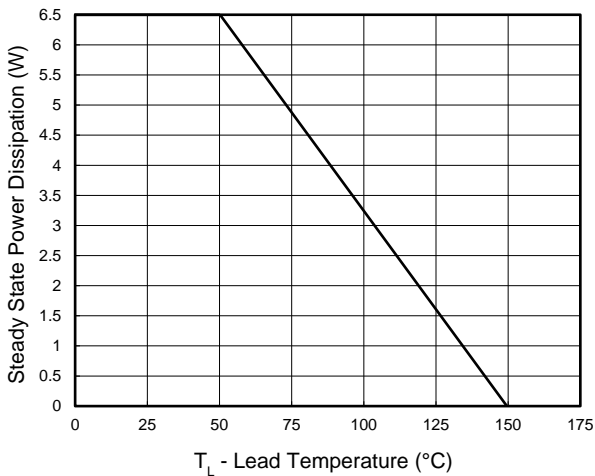
**Pulse Waveform**



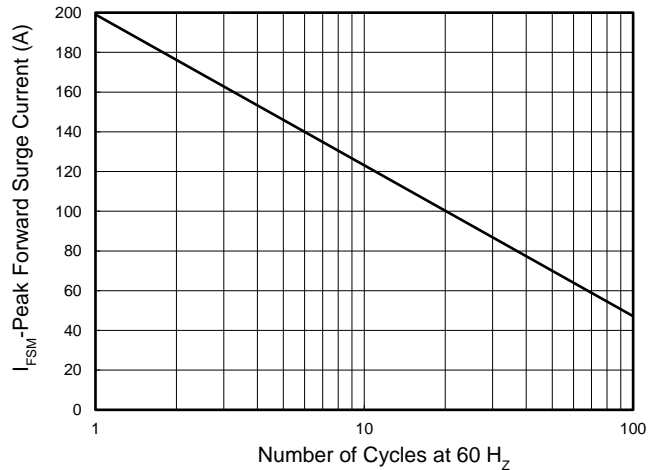
**Typical Junction Capacitance**



**Steady State Power Derating Curve**



**Maximum Non-repetitive Forward Surge current uni-directional only**



## Ordering Information

Part Number	Quantity	Packing Option	Component Package	Packing Specification
SMCJxxxA	3000	Tape & Reel - 16mm/13" tape	DO-214AB	EIA STD RS-481



AOS Green Products use reduced levels of Halogens, and are also RoHS compliant. Please visit [www.aosmd.com/media/AOSGreenPolicy.pdf](http://www.aosmd.com/media/AOSGreenPolicy.pdf) for additional information.

Note: Green Product means Pb-free, RoHS and Halogens free compliant.

Part Number	Part Marking
<p><b>SMCJ XXX C A</b></p>	

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