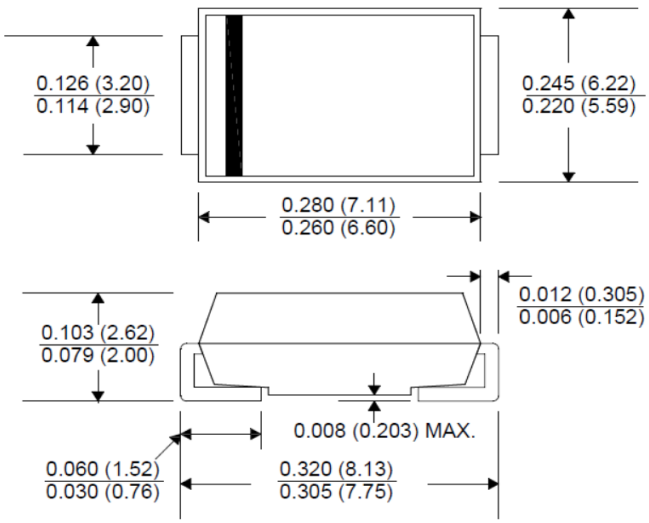
SMCJ5.0 thru SMCJ440

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

DO-214AB (SMC J-Bend)



Dimensions in inches and(millimeters)

Agency	Agency File Number
	E521119

PRIMARY CHARACTERISTICS	
V_{RWM}	5.0V to 440V
V_{BR}	6.4V to 543V
P_{PPM}	1500W
T_J 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 △VBR=0.1%xVBR@25°C x△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 ℃
- Plastic package has Underwriters Laboratory Flammability 94V-0
- Matte Tin Lead-free plated

Green

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)	P_{PPM}	1500	Watts
Peak Pulse Current of on 10/1000μs waveform(Note 1)	I_{PPM}	See Next Table	Amps
Peak Forward Surge Current,8.3ms Single Half Sine-Wave(Note 2，3)	I_{FSM}	200	Amps
Operating junction and Storage Temperature Range	T_J T_{STG}	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	15	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	75	°C/W

Note

(1) Non-repetitive current pulse above T_A = 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.

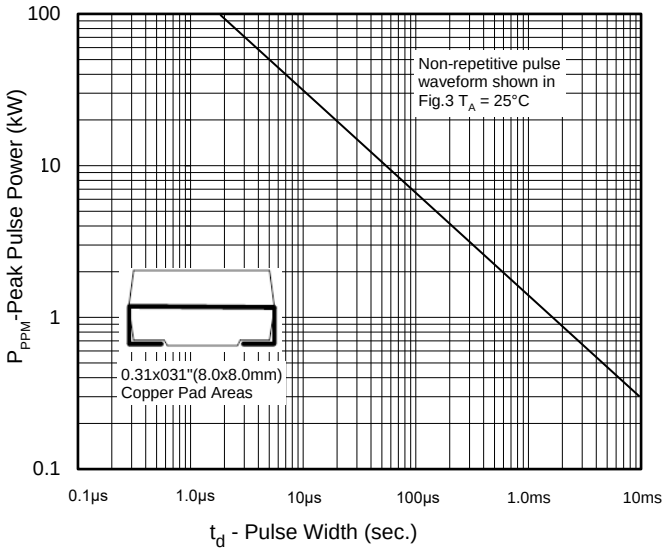
ELECTRICAL CHARACTERISTICS

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	GGK	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	GGP	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	GGT	BGT	1	86.70	95.80	78.0	126.0	12.3	1.0
SMCJ85A	SMCJ85CA	GGV	BGV	1	94.40	104.00	85.0	137.0	11.3	1.0
SMCJ90A	SMCJ90CA	GGX	BGX	1	100.00	111.00	90.0	146.0	10.6	1.0
SMCJ100A	SMCJ100CA	GGZ	BGZ	1	111.00	123.00	100.0	162.0	9.5	1.0
SMCJ110A	SMCJ110CA	GHE	BHE	1	122.00	135.00	110.0	177.0	8.7	1.0
SMCJ120A	SMCJ120CA	GHG	BHG	1	133.00	147.00	120.0	193.0	8.0	1.0
SMCJ130A	SMCJ130CA	GHK	BHK	1	144.00	159.00	130.0	209.0	7.4	1.0
SMCJ150A	SMCJ150CA	GHM	BHM	1	167.00	185.00	150.0	243.0	6.4	1.0
SMCJ160A	SMCJ160CA	GHP	BHP	1	178.00	197.00	160.0	259.0	6.0	1.0
SMCJ170A	SMCJ170CA	GHR	BHR	1	189.00	209.00	170.0	275.0	5.6	1.0
SMCJ180A	SMCJ180CA	GHT	BHT	1	201.00	222.00	180.0	292.0	5.2	1.0
SMCJ200A	SMCJ200CA	GHV	BHV	1	224.00	247.00	200.0	324.0	4.7	1.0
SMCJ220A	SMCJ220CA	GHX	BHX	1	246.00	272.00	220.0	356.0	4.3	1.0
SMCJ250A	SMCJ250CA	GHZ	BHZ	1	279.00	309.00	250.0	405.0	3.8	1.0
SMCJ300A	SMCJ300CA	GJE	BJE	1	335.00	371.00	300.0	486.0	3.1	1.0
SMCJ350A	SMCJ350CA	GJG	BJG	1	391.00	432.00	350.0	567.0	2.7	1.0
SMCJ400A	SMCJ400CA	GJK	BJK	1	447.00	494.00	400.0	648.0	2.4	1.0
SMCJ440A	SMCJ440CA	GJM	BJM	1	492.00	543.00	440.0	713.0	2.2	1.0

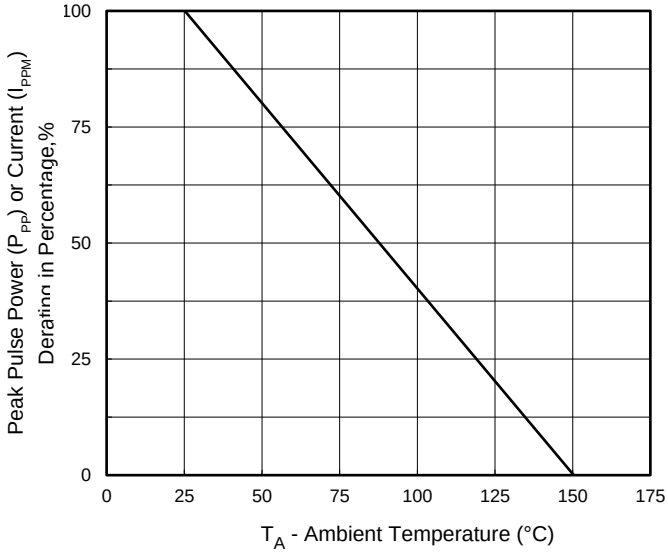
For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

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

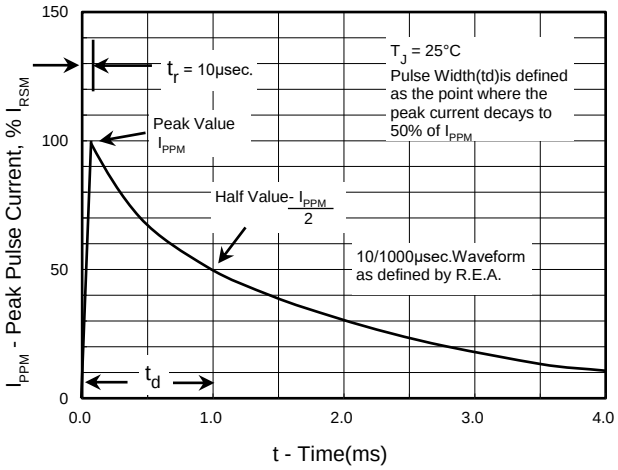
Peak Pulse Power Rating



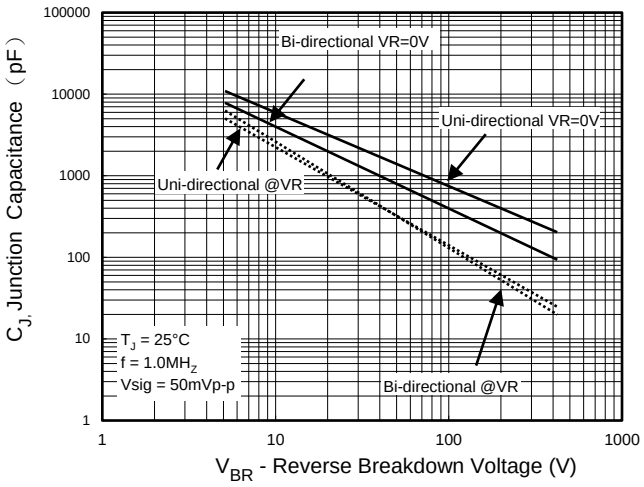
Pulse Derating Curve



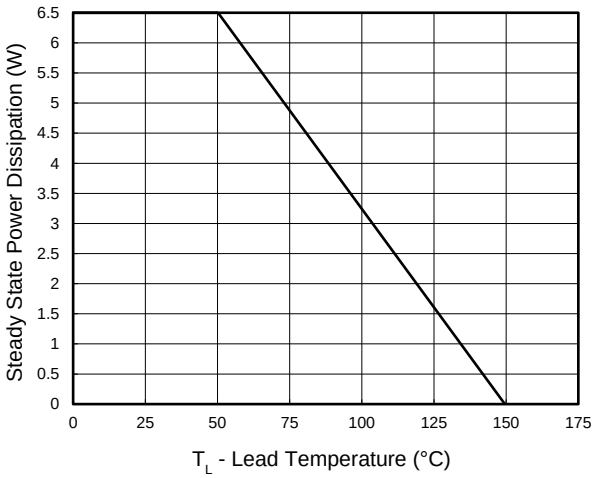
Pulse Waveform



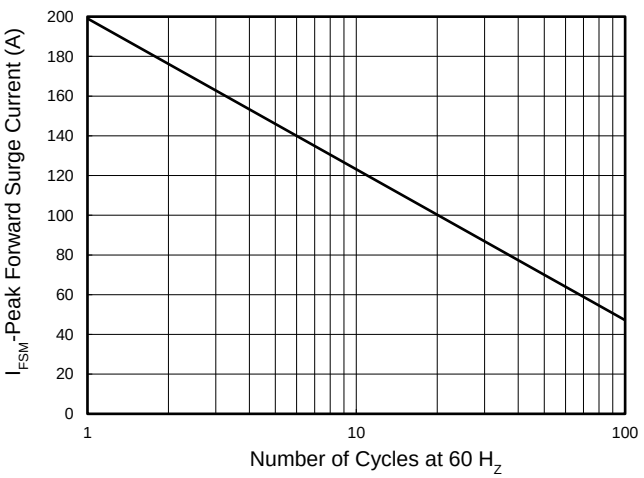
Typical Junction Capacitance



Steady State Power Derating Curve



Maximum Non-repetitive Forward Surge current uni-directional only

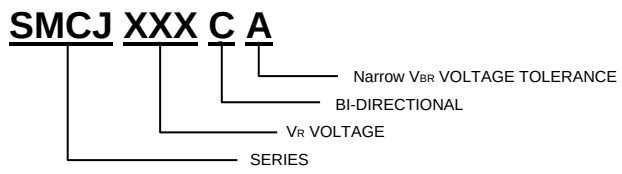
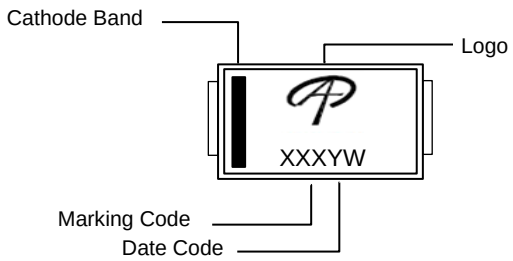


Ordering Information

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 for additional information.

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

Part Number	Part Marking
	

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