

DO-214AB (SMC J-Bend)



Dimensions in inches and (millimeters)

Agency	Agency File Number
	E521119

PRIMARY CHARACTERISTICS	
VRWM	5.0V to 250V
VBR	6.4V to 309V
PPPM	3000W
TJ max	150°C
Polarity	Uni-directional & Bi-directional
Package	DO-214AB

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	3000	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	300	Amps
Operating junction and Storage Temperature Range	TJ TSTG	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	REJL	15	°C/W
Typical Thermal Resistance Junction to Ambient	REJA	75	°C/W

Note

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

FEATURES

- For surface mounted applications in order to optimize board space
- Typical maximum temperature coefficient $\Delta VBR = 0.1\% \times VBR @ 25^\circ C \times \Delta T$
- 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 SMDJ5.0 thru types SMDJ250 (e.g. SMDJ5.0A, SMDJ250CA)
- Electrical characteristics apply in both directions

ELECTRICAL CHARACTERISTICS

PART NUMBER		MARKING CODE		TEST CURRENT IT (mA)	BREAKDOWN VOLTAGE VBR(V) @IT		REVERSE STAND-OFF VOLTAGE VRWM(V)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc(V)	MAXIMUM PEAK PULSE CURRENT Ipp (A)	MAXIMUM REVERSE LEAKAGE @ VRWM IR(μA)
					MIN	MAX				
UNI- POLAR	BI-POLAR	UNI	BI							
SMDJ5.0A	SMDJ5.0CA	RDE	DDE	10	6.40	7.00	5.0	9.2	326.1	800.0
SMDJ6.0A	SMDJ6.0CA	RDG	DDG	10	6.67	7.37	6.0	10.3	291.3	800.0
SMDJ6.5A	SMDJ6.5CA	RDK	DDK	10	7.22	7.98	6.5	11.2	267.9	500.0
SMDJ7.0A	SMDJ7.0CA	PDM	DDM	10	7.78	8.60	7.0	12.0	250.0	200.0
SMDJ7.5A	SMDJ7.5CA	PDP	DDP	1	8.33	9.21	7.5	12.9	232.6	100.0
SMDJ8.0A	SMDJ8.0CA	PDR	DDR	1	8.89	9.83	8.0	13.6	220.6	50.0
SMDJ8.5A	SMDJ8.5CA	PDT	DDT	1	9.44	10.40	8.5	14.4	208.4	20.0
SMDJ9.0A	SMDJ9.0CA	PDV	DDV	1	10.00	11.10	9.0	15.4	194.9	10.0
SMDJ10A	SMDJ10CA	PDX	DDX	1	11.10	12.30	10.0	17.0	176.5	5.0
SMDJ11A	SMDJ11CA	PDZ	DDZ	1	12.20	13.50	11.0	18.2	164.9	2.0
SMDJ12A	SMDJ12CA	PEE	DEE	1	13.30	14.70	12.0	19.9	150.8	2.0
SMDJ13A	SMDJ13CA	PEG	DEG	1	14.40	15.90	13.0	21.5	139.6	2.0
SMDJ14A	SMDJ14CA	PEK	DEK	1	15.60	17.20	14.0	23.2	129.4	2.0
SMDJ15A	SMDJ15CA	PEM	DEM	1	16.70	18.50	15.0	24.4	123.0	2.0
SMDJ16A	SMDJ16CA	PEP	DEP	1	17.80	19.70	16.0	26.0	115.4	2.0
SMDJ17A	SMDJ17CA	PER	DER	1	18.90	20.90	17.0	27.6	108.7	2.0
SMDJ18A	SMDJ18CA	PET	DET	1	20.00	22.10	18.0	29.2	102.8	2.0
SMDJ20A	SMDJ20CA	PEV	DEV	1	22.20	24.50	20.0	32.4	92.6	2.0
SMDJ21A	SMDJ21CA	PHV	DHV	1	23.31	25.73	21.0	34.1	88.0	2.0
SMDJ22A	SMDJ22CA	PEX	DEX	1	24.40	26.90	22.0	35.5	84.6	2.0
SMDJ24A	SMDJ24CA	PEZ	DEZ	1	26.70	29.50	24.0	38.9	77.2	2.0
SMDJ26A	SMDJ26CA	PFE	DFE	1	28.90	31.90	26.0	42.1	71.3	2.0
SMDJ28A	SMDJ28CA	PFG	DFG	1	31.10	34.40	28.0	45.4	66.1	2.0
SMDJ30A	SMDJ30CA	PFK	DFK	1	33.30	36.80	30.0	48.4	62.0	2.0
SMDJ33A	SMDJ33CA	PFM	DFM	1	36.70	40.60	33.0	53.3	56.3	2.0
SMDJ36A	SMDJ36CA	PFV	DFV	1	40.00	44.20	36.0	58.1	51.7	2.0
SMDJ40A	SMDJ40CA	PFR	DFR	1	44.40	49.10	40.0	64.5	46.6	2.0
SMDJ43A	SMDJ43CA	PFT	DFT	1	47.80	52.80	43.0	69.4	43.3	2.0
SMDJ45A	SMDJ45CA	PFV	DFV	1	50.00	55.30	45.0	72.7	41.3	2.0
SMDJ48A	SMDJ48CA	PFX	DFX	1	53.30	58.90	48.0	77.4	38.8	2.0
SMDJ51A	SMDJ51CA	PFZ	DFZ	1	56.70	62.70	51.0	82.4	36.5	2.0
SMDJ54A	SMDJ54CA	RGE	DGE	1	60.00	66.30	54.0	87.1	34.5	2.0
SMDJ58A	SMDJ58CA	PGG	DGG	1	64.40	71.20	58.0	93.6	32.1	2.0
SMDJ60A	SMDJ60CA	PGK	DGK	1	66.70	73.70	60.0	96.8	31.0	2.0
SMDJ64A	SMDJ64CA	PGM	DGM	1	71.10	78.60	64.0	103.0	29.2	2.0
SMDJ70A	SMDJ70CA	PGP	DGP	1	77.80	86.00	70.0	113.0	26.6	2.0
SMDJ75A	SMDJ75CA	PGR	DGR	1	83.30	92.10	75.0	121.0	24.8	2.0
SMDJ78A	SMDJ78CA	PGT	DGT	1	86.70	95.80	78.0	126.0	23.9	2.0
SMDJ85A	SMDJ85CA	PGV	DGV	1	94.40	104.00	85.0	137.0	21.9	2.0
SMDJ90A	SMDJ90CA	PGX	DGX	1	100.00	111.00	90.0	146.0	20.6	2.0
SMDJ100A	SMDJ100CA	PGZ	DGZ	1	111.00	123.00	100.0	162.0	18.6	2.0
SMDJ110A	SMDJ110CA	PHE	DHE	1	122.00	135.00	110.0	177.0	17.0	2.0
SMDJ120A	SMDJ120CA	PHG	DHG	1	133.00	147.00	120.0	193.0	15.6	2.0
SMDJ130A	SMDJ130CA	PHK	DHK	1	144.00	159.00	130.0	209.0	14.4	2.0
SMDJ150A	SMDJ150CA	PHM	DHM	1	167.00	185.00	150.0	243.0	12.4	2.0
SMDJ160A	SMDJ160CA	PHP	DHP	1	178.00	197.00	160.0	259.0	11.6	2.0
SMDJ170A	SMDJ170CA	PHR	DHR	1	189.00	209.00	170.0	275.0	11.0	2.0
SMDJ180A	SMDJ180CA	PHT	DHT	1	201.00	222.00	180.0	292.0	10.4	2.0
SMDJ200A	SMDJ200CA	PHX	DHX	1	224.00	247.00	200.0	324.0	9.3	2.0
SMDJ220A	SMDJ220CA	PHZ	DHZ	1	246.00	272.00	220.0	356.0	8.5	2.0
SMDJ250A	SMDJ250CA	PIE	DIE	1	279.00	309.00	250.0	405.0	7.5	2.0

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
SMDJxxxA	3000	Tape & Reel - 16mm/13" tape	DO-214AB	EIA STD RS-481



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

Part Number	Part Marking
<p>SMDJ XXX C A</p> <p>Series</p> <p>V_R VOLTAGE</p> <p>BI-DIRECTIONAL</p> <p>Narrow V_R VOLTAGE TOLERANCE</p>	<p>Cathode Band</p> <p>Logo</p> <p>Marking Code</p> <p>Date Code</p>

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