

TRANSIENT VOLTAGE SUPPRESSOR

SMD Series

Features

- 3000Watts peak pulse power (tp=10/1000μs)
- Low leakage.
- Quick response to surge voltage
- Excellent clamping capability.
- Uni and Bidirectional unit.
- Polarity: Color band denotes cathode end except bipolar



DO-214AB

Mechanical Data

- Epoxy: UL 94V-0 rate flame retardant.
- Case: SMC/DO-214AB, molded plastic.
- Terminals: solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end except bipolar.
- Weight: 0.260 gram (approx.)
- RoHS Compliant



BI-directional



UNI-directional

Maximum Ratings (@TA = 25°C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Operating junction and storage temperature range	T_J/T_{STG}	-55 to +150	°C
Steady state power dissipation at $T_L=75^\circ\text{C}$	$P_{M(AV)}$	6.5	W
Peak pulse power dissipation on 10/1000μs waveform	P_{PP}	3000	W
Maximum instantaneous forward voltage at 50A for unidirectional	V_F	5.0	V
Peak forward surge current, 8.3ms single half sine wave (1)	I_{FSM}	200	A
Typical thermal resistance junction to lead	$R_{\theta_{JL}}$	15	°C/W
Typical thermal resistance	$R_{\theta_{JA}}$	75	°C/W

Notes: 1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

Electrical Characteristic (@TA = 25°C, unless otherwise specified)

Part Number		V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @I _{PP}	I _{PP}
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
SMDJ5.0A	SMDJ5.0CA	5	300	6.4	7	10	9.2	326.1
SMDJ6.0A	SMDJ6.0CA	6	250	6.67	7.37	10	10.3	291.3
SMDJ6.5A	SMDJ6.5CA	6.5	150	7.22	7.98	10	11.2	267.9
SMDJ7.0A	SMDJ7.0CA	7	100	7.78	8.6	10	12	250
SMDJ7.5A	SMDJ7.5CA	7.5	50	8.33	9.21	1	12.9	232.6
SMDJ8.0A	SMDJ8.0CA	8	30	8.89	9.83	1	13.6	220.6
SMDJ8.5A	SMDJ8.5CA	8.5	20	9.44	10.4	1	14.4	208.3
SMDJ9.0A	SMDJ9.0CA	9	10	10	11.1	1	15.4	194.8
SMDJ10A	SMDJ10CA	10	5	11.1	12.3	1	17	176.5
SMDJ11A	SMDJ11CA	11	2	12.2	13.5	1	18.2	164.8
SMDJ12A	SMDJ12CA	12	1	13.3	14.7	1	19.9	150.8
SMDJ13A	SMDJ13CA	13	1	14.4	15.9	1	21.5	139.5
SMDJ14A	SMDJ14CA	14	1	15.6	17.2	1	23.2	129.3
SMDJ15A	SMDJ15CA	15	1	16.7	18.5	1	24.4	123
SMDJ16A	SMDJ16CA	16	1	17.8	19.7	1	26	115.4
SMDJ17A	SMDJ17CA	17	1	18.9	20.9	1	27.6	108.7
SMDJ18A	SMDJ18CA	18	1	20	22.1	1	29.2	102.7
SMDJ20A	SMDJ20CA	20	1	22.2	24.5	1	32.4	92.6
SMDJ22A	SMDJ22CA	22	1	24.4	26.9	1	35.5	84.5
SMDJ24A	SMDJ24CA	24	1	26.7	29.5	1	38.9	77.1
SMDJ26A	SMDJ26CA	26	1	28.9	31.9	1	42.1	71.3
SMDJ28A	SMDJ28CA	28	1	31.1	34.4	1	45.4	66.1
SMDJ30A	SMDJ30CA	30	1	33.3	36.8	1	48.4	62
SMDJ33A	SMDJ33CA	33	1	36.7	40.6	1	53.3	56.3
SMDJ36A	SMDJ36CA	36	1	40	44.2	1	58.1	51.6
SMDJ40A	SMDJ40CA	40	1	44.4	49.1	1	64.5	46.5
SMDJ43A	SMDJ43CA	43	1	47.8	52.8	1	69.4	43.2
SMDJ45A	SMDJ45CA	45	1	50	55.3	1	72.7	41.3
SMDJ48A	SMDJ48CA	48	1	53.3	58.9	1	77.4	38.8
SMDJ51A	SMDJ51CA	51	1	56.7	62.7	1	82.4	36.4
SMDJ54A	SMDJ54CA	54	1	60	66.3	1	87.1	34.4
SMDJ58A	SMDJ58CA	58	1	64.4	71.2	1	93.6	32.1
SMDJ60A	SMDJ60CA	60	1	66.7	73.7	1	96.8	31

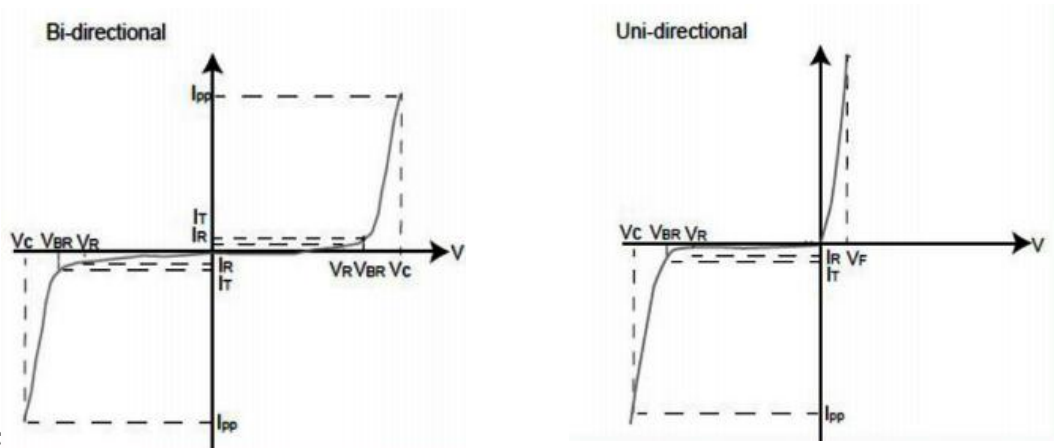
Part Number		V_R	$I_R@V_R$	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	I_{PP}
Uni-Polar	Bi-Polar	V	μA	min(V)	max(V)	mA	max(V)	A
SMDJ64A	SMDJ64CA	64	64	71.1	78.6	1	103	29.1
SMDJ70A	SMDJ70CA	70	70	77.8	86	1	113	26.5
SMDJ75A	SMDJ75CA	75	75	83.3	92.1	1	121	24.8
SMDJ78A	SMDJ78CA	78	78	86.7	95.8	1	126	23.8
SMDJ85A	SMDJ85CA	85	85	94.4	104	1	137	21.9
SMDJ90A	SMDJ90CA	90	90	100	111	1	146	20.5
SMDJ100A	SMDJ100CA	100	100	111	123	1	162	18.5
SMDJ110A	SMDJ110CA	110	110	122	135	1	177	16.9
SMDJ120A	SMDJ120CA	120	120	133	147	1	193	15.5
SMDJ130A	SMDJ130CA	130	130	144	159	1	209	14.4
SMDJ150A	SMDJ150CA	150	150	167	185	1	243	12.3
SMDJ160A	SMDJ160CA	160	160	178	197	1	259	11.6
SMDJ170A	SMDJ170CA	170	1	189	209	1	275	10.9
SMDJ180A	SMDJ180CA	180	1	201	222	1	292	10.2
SMDJ190A	SMDJ190CA	190	1	211	234	1	307	9.7
SMDJ200A	SMDJ200CA	200	1	224	247	1	324	9.2
SMDJ210A	SMDJ210CA	210	1	233	258	1	337	8.9
SMDJ220A	SMDJ220CA	220	1	246	272	1	356	8.4
SMDJ250A	SMDJ250CA	250	1	279	309	1	405	7.4
SMDJ300A	SMDJ300CA	300	1	335	371	1	486	6.1
SMDJ350A	SMDJ350CA	350	1	391	432	1	567	5.2
SMDJ400A	SMDJ400CA	400	1	447	494	1	648	4.6
SMDJ440A	SMDJ440CA	440	1	492	543	1	713	4.2
SMDJ510A	SMDJ510CA	510	1	570.1	640.5	1	833.4	3.5

Notes: 2. V_{BR} measured with I_T current pulse = 10 ~ 15ms

3. Per 10 x 1000 μ s waveform

4. For bidirectional type having V_R of 10 volts and less, the I_R limit is double

V-I Curve



Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

Fig.1 - Pulse Derating Curve

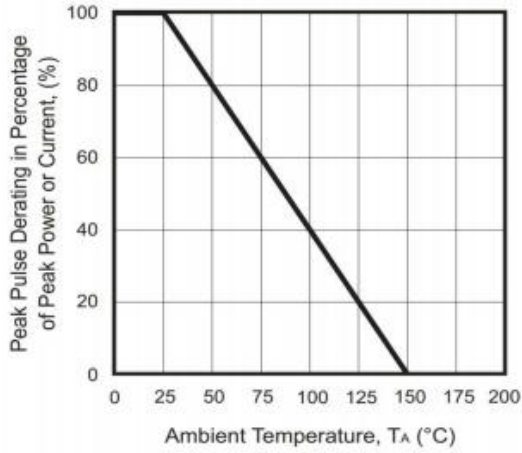


Fig.2 - Max. Non-Repetitive Surge Current

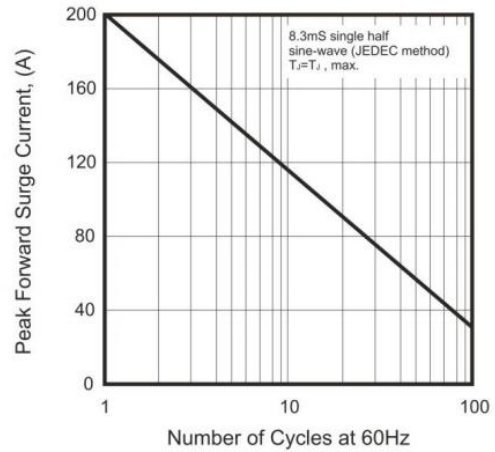


Fig.3 - Steady State Power Derating Curve

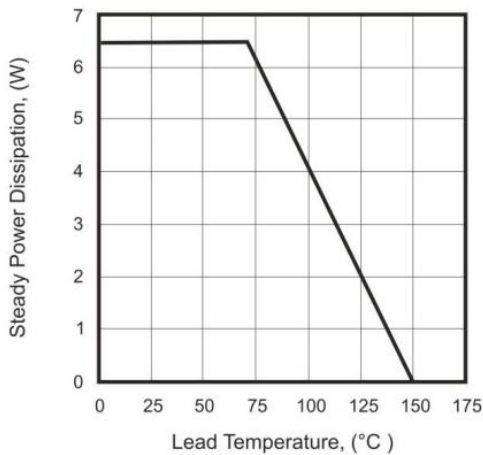


Fig.4 - Peak Pulse Power Rating Curve

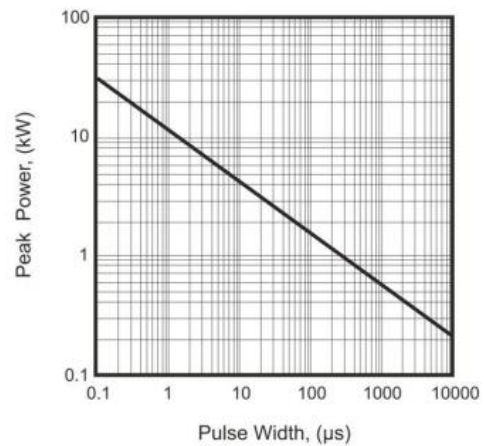


Fig.5 - Pulse Waveform

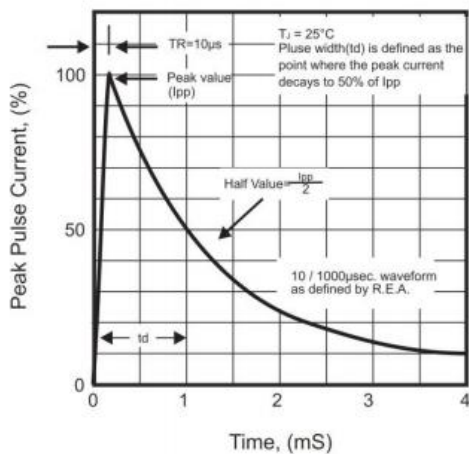
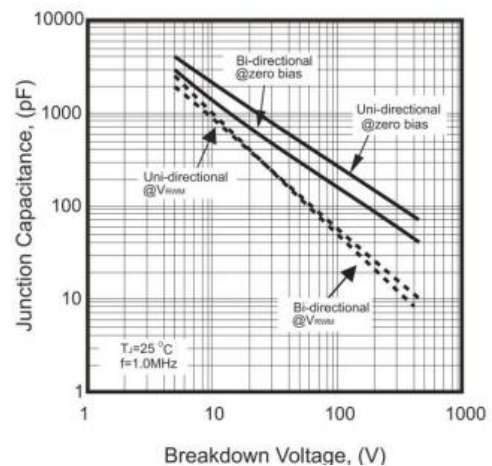
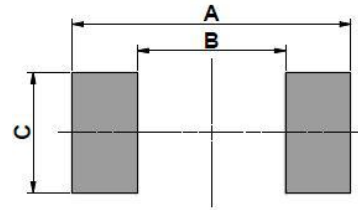
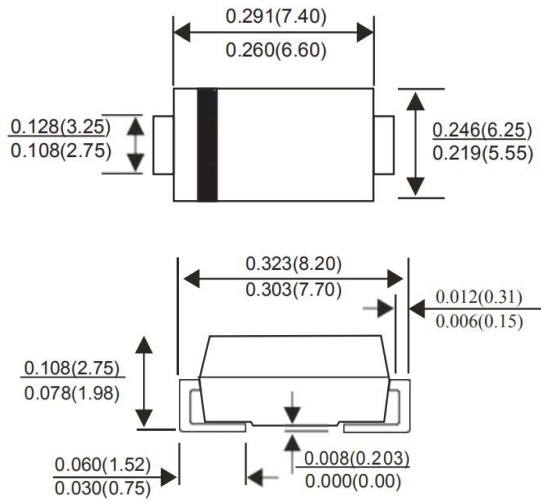


Fig.6 - Typical Junction Capacitance



Product Dimensions And Suggested PAD Layout

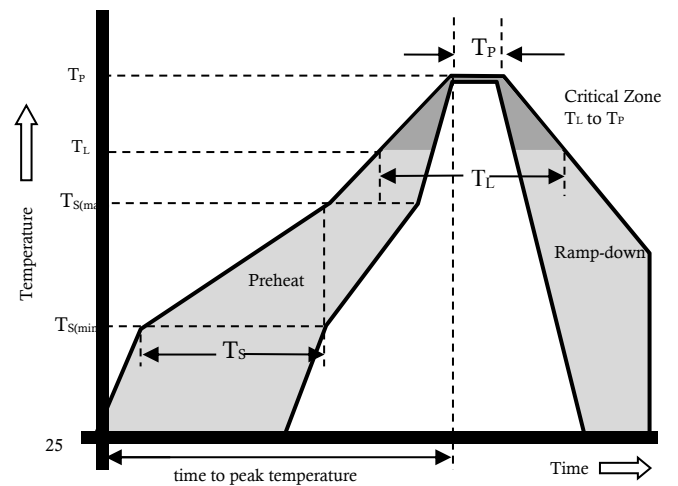


REF	mm	inch
A	8.13	0.32
B	4.69max	0.185max
C	3.2min	0.126min

SMC/DO-214AB

Reflow Profile

Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 seconds
Average ramp up rate (Liquidus Temp (T _L) to peak)		3°C/second max
T _{S(max)} to T _L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T _L) (Liquidus)	217°C
	- Temperature (T _L)	60 – 150 seconds
Peak Temp (T _P)		260+0/-5 °C
Time within 5°C of actual Peak Temp (T _P)		8-15 seconds
Ramp-down Rate		6°C/s max
Time 25°C to peak Temp (T _P)		8 min max.
Do not exceed		260°C



Part Number System

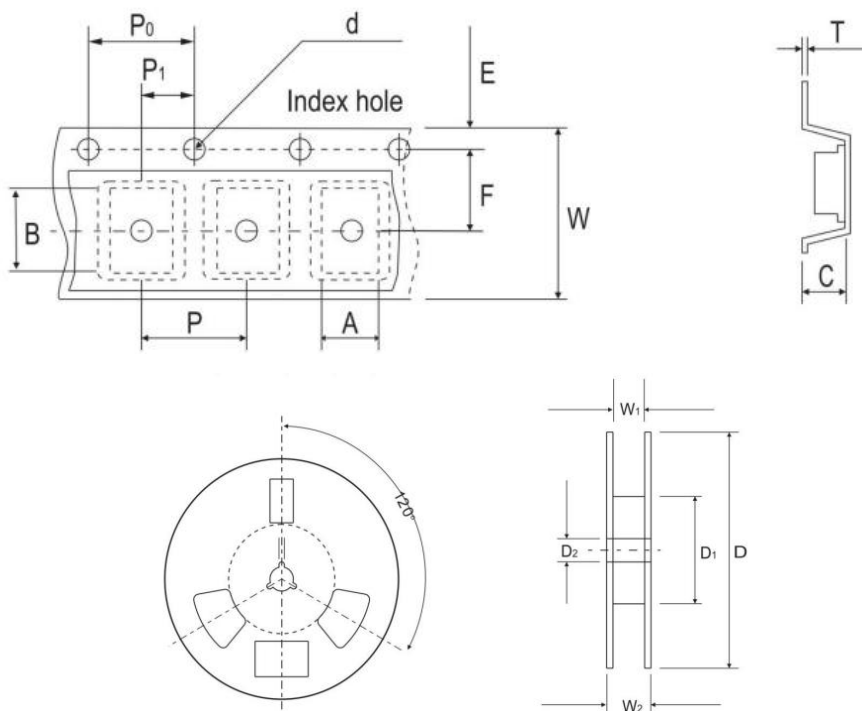
SMBJ XXX C A
(1) (2) (3) (4)

- (1) Series Code
- (2) Reverse Stand-Off Voltage
- (3)BI-directional
- (4)Suffix ‘A’ denotes 5% tolerance devices

Marking Codes

Part Number	SMDJXXXXA
	SMDJXXXXCA
Marking Code	SMDJXXXXA
	SMDJXXXXCA

Reel Taping Specification



DO-214AB (SMC)	SYMBOL	A	B	C	d	T	D	D1	D2
	(mm)	See Note 1			1.55 ± 0.05	0.40 (Max.)	330	50.00 (Min.)	13.00 + 0.50 - 0.20
	(inch)	See Note 1			0.061 ± 0.002	0.016 (Max.)	13	1.969 (Min.)	0.512 + 0.020 - 0.008
	SYMBOL	E	F	P	P0	P1	W	W1	W2
	(mm)	1.75 ± 0.10	7.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	16.00 ± 0.10	16.40 + 2.00 - 0.00	22.40 (Max.)
	(inch)	0.069±0.004	0.295±0.002	0.315±0.004	0.157±0.004	0.079±0.002	0.630±0.004	0.646 + 0.079 - 0.000	0.882 (Max.)

Ordering information

Package	Base qty	Reel Size	Delivery mode
DO-214AB(SMC)	3000 PCS	13 inch	Tape and reel



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