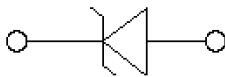
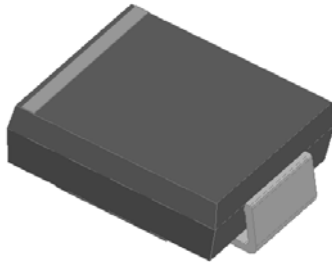
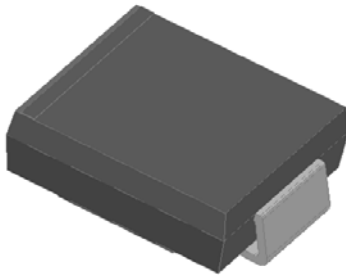


## Surface Mount Transient Voltage Suppressor Diodes

### Uni-directional



### Bi-directional



### Features

- UL recognition, file # E517074
- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 3000W peak pulse power capability with a 10/1000  $\mu$ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS

### 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

- **Package:** DO-214AB (SMC)  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types

### ■Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform <sup>(1)</sup> <sup>(2)</sup>	P <sub>PPM</sub>	W	3000
Peak pulse current, with a 10/1000us waveform <sup>(1)</sup>	I <sub>PPM</sub>	A	See Next Table
Power dissipation, on infinite heat sink at TL=75°C <sup>(2)</sup>	P <sub>D</sub>	W	6.5
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only <sup>(3)</sup>	I <sub>FSM</sub>	A	300
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	°C	-55 to +150

### ■Electrical Characteristics (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage at 100A for unidirectional only <sup>(4)</sup>	V <sub>FM</sub>	V	3.5/5.0



# SMDJ SERIES

## ■ Thermal Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal Resistance(Typical)	$R_{\theta JA}^{(5)}$	°C/W	junction to ambient	75
	$R_{\theta JL}$	°C/W	junction to lead	15

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig.2.
- (2) Mounted on 0.31 x 0.31" (8.0 x 8.0 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)  $V_F=3.5\text{V}$  Max for devices of  $V_{BR} \leq 220\text{V}$ , and  $V_F=5.0\text{V}$  Max for devices of  $V_{BR} > 220\text{V}$ .
- (5) Mounted on minimum recommended pad layout.

## ■ Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage $I_R^{(3)}$ @ $V_{RWM}$ ( $\mu\text{A}$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}^{(2)}$ (A)	Maximum Clamping Voltage $V_c$ @ $I_{PP}$ (V)
		Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMDJ5.0A	SMDJ5.0CA(4)	6.4	7.07	10	1000	5	326.09	9.2
SMDJ6.0A	SMDJ6.0CA	6.67	7.37	10	1000	6	291.26	10.3
SMDJ6.5A	SMDJ6.5CA	7.22	7.98	10	500	6.5	267.86	11.2
SMDJ7.0A	SMDJ7.0CA	7.78	8.6	10	200	7	250	12
SMDJ7.5A	SMDJ7.5CA	8.33	9.21	1	100	7.5	232.56	12.9
SMDJ8.0A	SMDJ8.0CA	8.89	9.83	1	50	8	220.59	13.6
SMDJ8.5A	SMDJ8.5CA	9.44	10.4	1	25	8.5	208.33	14.4
SMDJ9.0A	SMDJ9.0CA	10	11.1	1	10	9	194.81	15.4
SMDJ10A	SMDJ10CA	11.1	12.3	1	5	10	176.47	17
SMDJ11A	SMDJ11CA	12.2	13.5	1	5	11	164.84	18.2
SMDJ12A	SMDJ12CA	13.3	14.7	1	5	12	150.75	19.9
SMDJ13A	SMDJ13CA	14.4	15.9	1	5	13	139.53	21.5
SMDJ14A	SMDJ14CA	15.6	17.2	1	5	14	129.31	23.2
SMDJ15A	SMDJ15CA	16.7	18.5	1	5	15	122.95	24.4
SMDJ16A	SMDJ16CA	17.8	19.7	1	5	16	115.38	26
SMDJ17A	SMDJ17CA	18.9	20.9	1	5	17	108.7	27.6
SMDJ18A	SMDJ18CA	20	22.1	1	5	18	102.74	29.2
SMDJ19A	SMDJ19CA	21.1	23.3	1	5	19	97.47	30.8
SMDJ20A	SMDJ20CA	22.2	24.5	1	5	20	92.59	32.4
SMDJ22A	SMDJ22CA	24.4	26.9	1	5	22	84.51	35.5
SMDJ24A	SMDJ24CA	26.7	29.5	1	5	24	77.12	38.9
SMDJ26A	SMDJ26CA	28.9	31.9	1	5	26	71.26	42.1
SMDJ28A	SMDJ28CA	31.1	34.4	1	5	28	66.08	45.4
SMDJ30A	SMDJ30CA	33.3	36.8	1	5	30	61.98	48.4
SMDJ33A	SMDJ33CA	36.7	40.6	1	5	33	56.29	53.3
SMDJ36A	SMDJ36CA	40	44.2	1	5	36	51.64	58.1
SMDJ40A	SMDJ40CA	44.4	49.1	1	5	40	46.51	64.5
SMDJ43A	SMDJ43CA	47.8	52.8	1	5	43	43.23	69.4
SMDJ45A	SMDJ45CA	50	55.3	1	5	45	41.27	72.7
SMDJ48A	SMDJ48CA	53.3	58.9	1	5	48	38.76	77.4



# SMDJ SERIES

## ■Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage $I_R^{(3)}$ @ $V_{RWM}$ ( $\mu A$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}^{(2)}$ (A)	Maximum Clamping Voltage $V_c$ @ $I_{PP}$ (V)
		Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMDJ51A	SMDJ51CA	56.7	62.7	1	5	51	36.41	82.4
SMDJ54A	SMDJ54CA	60	66.3	1	5	54	34.44	87.1
SMDJ58A	SMDJ58CA	64.4	71.2	1	5	58	32.05	93.6
SMDJ60A	SMDJ60CA	66.7	73.7	1	5	60	30.99	96.8
SMDJ64A	SMDJ64CA	71.1	78.6	1	5	64	29.13	103
SMDJ70A	SMDJ70CA	77.8	86	1	5	70	26.55	113
SMDJ75A	SMDJ75CA	83.3	92.1	1	5	75	24.79	121
SMDJ78A	SMDJ78CA	86.7	95.8	1	5	78	23.81	126
SMDJ80A	SMDJ80CA	88.8	97.6	1	5	80	23.15	129.6
SMDJ85A	SMDJ85CA	94.4	104	1	5	85	21.9	137
SMDJ90A	SMDJ90CA	100	111	1	5	90	20.55	146
SMDJ100A	SMDJ100CA	111	123	1	5	100	18.52	162
SMDJ110A	SMDJ110CA	122	135	1	5	110	16.95	177
SMDJ120A	SMDJ120CA	133	147	1	5	120	15.54	193
SMDJ130A	SMDJ130CA	144	159	1	5	130	14.35	209
SMDJ140A	SMDJ140CA	155	171	1	5	140	13.23	226.8
SMDJ150A	SMDJ150CA	167	185	1	5	150	12.35	243
SMDJ160A	SMDJ160CA	178	197	1	5	160	11.58	259
SMDJ170A	SMDJ170CA	189	209	1	5	170	10.91	275
SMDJ180A	SMDJ180CA	200	220	1	5	180	10.29	291.6
SMDJ190A	SMDJ190CA	211	232	1	5	190	9.75	307.8
SMDJ200A	SMDJ200CA	224	247	1	5	200	9.26	324
SMDJ220A	SMDJ220CA	246	272	1	5	220	8.43	356
SMDJ250A	SMDJ250CA	279	309	1	5	250	7.41	405
SMDJ300A	SMDJ300CA	335	371	1	5	300	6.17	486
SMDJ350A	SMDJ350CA	391	432	1	5	350	5.29	567
SMDJ400A	SMDJ400CA	447	494	1	5	400	4.63	648
SMDJ440A	SMDJ440CA	492	543	1	5	440	4.21	713
SMDJ250A	SMDJ250CA	279	309	1	5	250	7.41	405
SMDJ300A	SMDJ300CA	335	371	1	5	300	6.17	486
SMDJ350A	SMDJ350CA	391	432	1	5	350	5.29	567
SMDJ400A	SMDJ400CA	447	494	1	5	400	4.63	648
SMDJ440A	SMDJ440CA	492	543	1	5	440	4.21	713

### Notes:

- (1) Pulse Test:  $t_p \leq 50ms$  Pulse test:  $t_p \leq 50ms$ .
- (2) Surge current waveform per Fig. 3 and derated per Fig.2.
- (3) For bi-directional types having  $V_{RWM}$  of 10 V and less, the IR limit is doubled.
- (4) For the bi-directional SMDJ5.0CA, the maximum  $V_{BR}$  is 7.25 V.



# SMDJ SERIES

## Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMDJ SERIES	F1	Approximate 0.257	3000	/	42000	13" reel

## Characteristics(Typical)

FIG1: Peak Pulse Power Rating Curve

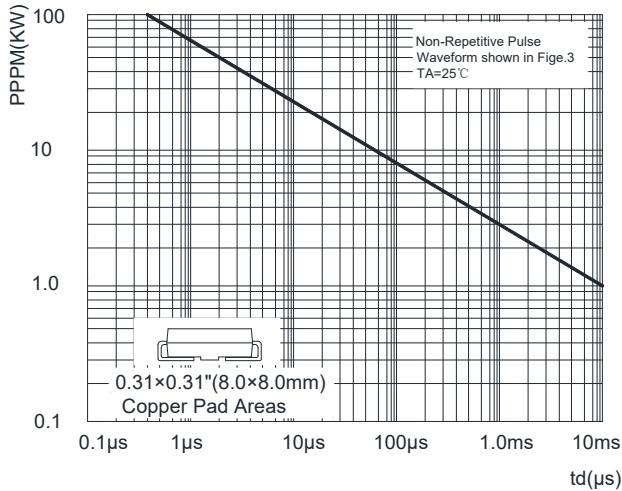


FIG2: Pulse Power or Current vs. Initial Junction Temperature

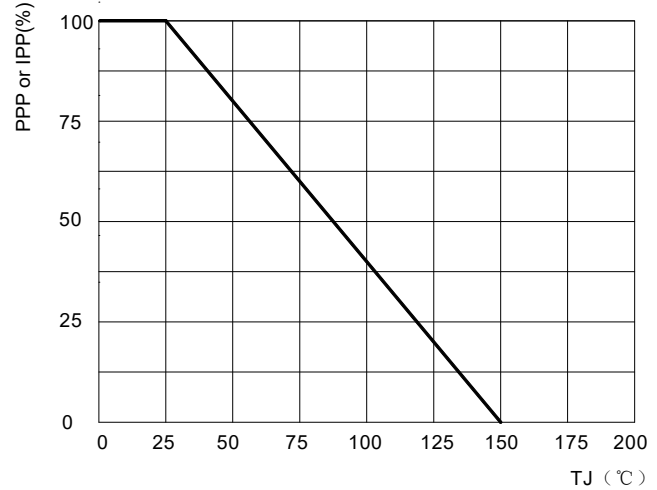


FIG3: Pulse Waveform

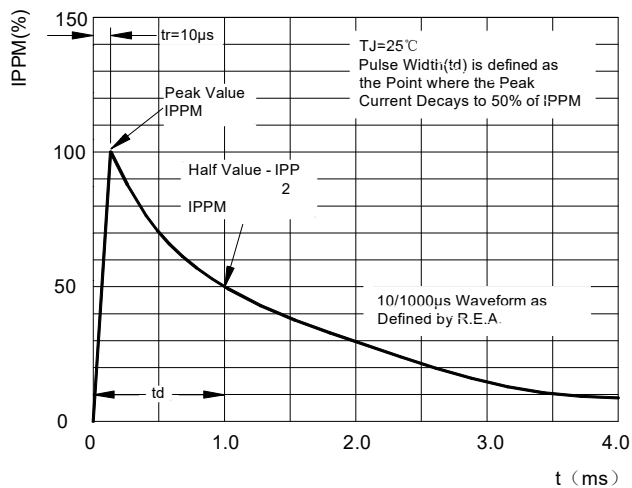


FIG4: Typical Transient Thermal Impedance

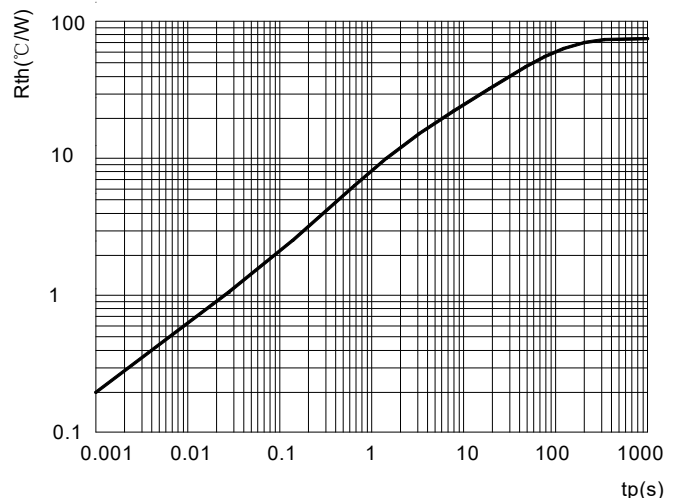


FIG5: Maximum Non-Repetitive Surge Current

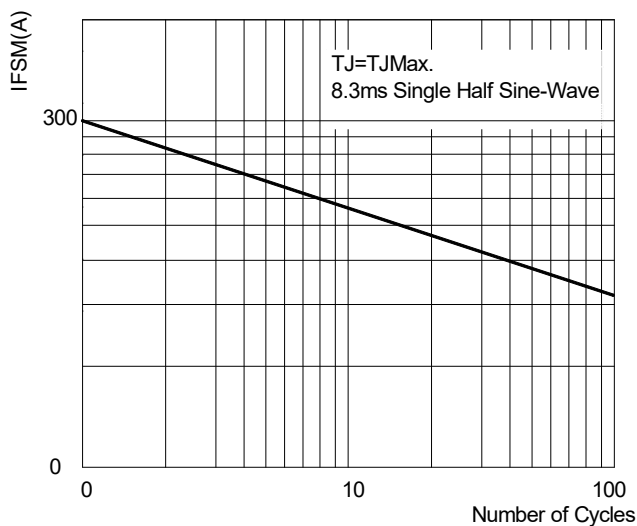
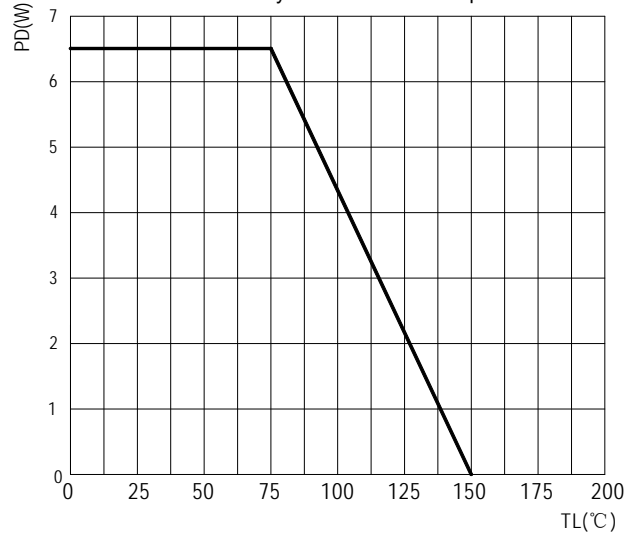
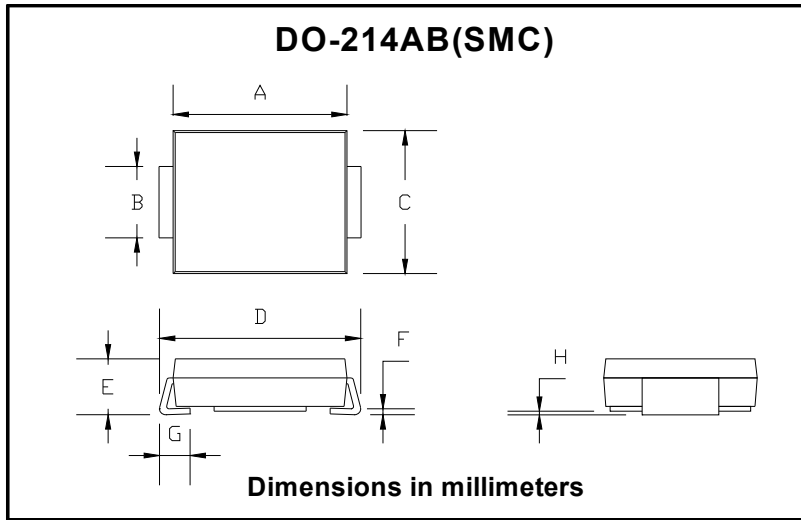


FIG6: Steady State Power Dissipation

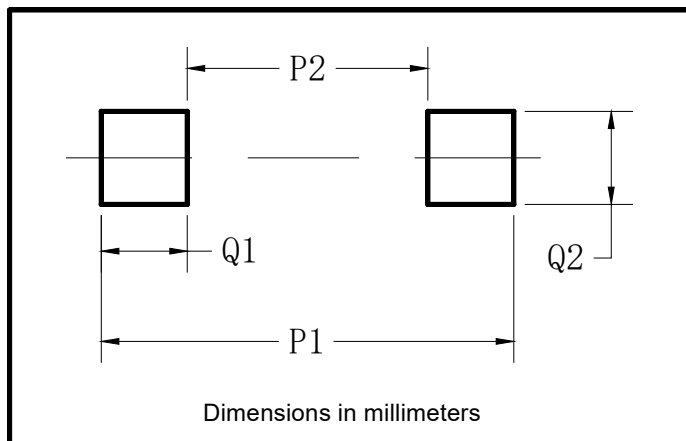


## ■ Outline Dimensions



DO-214AB (SMC)		
Dim	Min	Max
A	6.60	7.11
B	2.85	3.27
C	5.59	6.22
D	7.75	8.13
E	1.99	2.61
F	0.15	0.31
G	0.76	1.52
H	0.05	0.20

## ■ Suggested pad layout



Dim	Typ
P1	9.9
P2	3.84
Q1	3.03
Q2	3.82



## SMDJ SERIES

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