

Features

- P_{PP} 3000W
- V_{RWM} 5.0V- 440V
- Glass passivated chip

Applications

- Clamping Voltage

Marking

- SMDJ XXCA/XXA
- XX:From 5.0 To 440



SMC top view



Uni-direction



Bi-directional



Halogen-Free

Limiting Values(Absolute Maximum Rating)

Symbol	Parameter	Conditions	Value	Unit
P_{PPM}	Peak power dissipation	with a 10/1000us waveform	3000	W
I_{PPM}	Peak pulse current(1)	with a 10/1000us waveform	See Next Table	A
I_{FSM}	Peak forward surge current(2)	8.3 ms single half sine-wave unidirectional only	300	A
P_D	Power dissipation	On infinite heat sink at $T_L=73^{\circ}\text{C}$	6.5	W
T_J, T_{STG}	storage temperature range	Operating junction and storage temperature range	-55 ~ +150	$^{\circ}\text{C}$

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.

(2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal

(3) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$

Ordering Information (Example)

Type	Package	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
SMDJ Series	SMC	3,000	6,000	42,000	13" reel

Electrical Characteristics ($T_a=25^\circ\text{C}$ unless otherwise noted)

Part Number Add C For Bi-Directional (Note 4)	Reverse Stand off Voltage	Breakdown Voltage VBR @ I_T (Note 5)		Test Current	Max. Reverse Leakage @ VRWM(Note 6)	Max Clamping Voltage@ I_{pp}	Max. Peak Pulse Current I_{pp}
	$V_{RWM}(V)$	Min.(V)	Max.(V)	$I_T(mA)$	$I_R(\mu A)$	$V_C(V)$	(A)
SMDJ5.0(C)A	5.0	6.40	7.00	10	800.0	9.2	326.09
SMDJ6.0(C)A	6.0	6.67	7.37	10	800.0	10.3	291.26
SMDJ6.5(C)A	6.5	7.22	7.98	10	500.0	11.2	267.86
SMDJ7.0(C)A	7.0	7.78	8.60	10	200.0	12.0	250.00
SMDJ7.5(C)A	7.5	8.33	9.21	1	100.0	12.9	232.56
SMDJ8.0(C)A	8.0	8.89	9.83	1	50.0	13.6	220.59
SMDJ8.5(C)A	8.5	9.44	10.40	1	20.0	14.4	208.33
SMDJ9.0(C)A	9.0	10.00	11.10	1	10.0	15.4	194.81
SMDJ10(C)A	10.0	11.00	12.30	1	5.0	17.0	176.47
SMDJ11(C)A	11.0	12.20	13.50	1	5.0	18.2	164.84
SMDJ12(C)A	12.0	13.30	14.70	1	2.0	19.9	150.75
SMDJ13(C)A	13.0	14.40	15.90	1	2.0	21.5	139.53
SMDJ14(C)A	14.0	15.60	17.20	1	2.0	23.2	129.31
SMDJ15(C)A	15.0	16.70	18.50	1	1.0	24.4	122.95
SMDJ16(C)A	16.0	17.80	19.70	1	1.0	26.0	115.38
SMDJ17(C)A	17.0	18.90	20.90	1	1.0	27.6	108.70
SMDJ18(C)A	18.0	20.00	22.10	1	1.0	29.2	102.74
SMDJ20(C)A	20.0	22.00	24.50	1	1.0	32.4	92.59
SMDJ22(C)A	22.0	24.40	26.90	1	1.0	35.5	84.51
SMDJ24(C)A	24.0	26.70	29.50	1	1.0	38.9	77.12
SMDJ26(C)A	26.0	28.90	31.90	1	1.0	42.1	71.26
SMDJ28(C)A	28.0	31.10	34.40	1	1.0	45.4	66.08
SMDJ30(C)A	30.0	33.50	36.80	1	1.0	48.4	61.98
SMDJ33(C)A	33.0	36.70	40.60	1	1.0	53.3	56.29
SMDJ36(C)A	36.0	40.00	44.20	1	1.0	58.1	51.64
SMDJ40(C)A	40.0	44.40	49.10	1	1.0	64.5	46.51
SMDJ43(C)A	43.0	47.80	52.80	1	1.0	69.4	43.23
SMDJ45(C)A	45.0	50.00	55.30	1	1.0	72.7	41.27
SMDJ48(C)A	48.0	53.30	58.90	1	1.0	77.4	38.76
SMDJ51(C)A	51.0	56.70	62.70	1	1.0	82.4	36.41
SMDJ54(C)A	54.0	60.00	66.30	1	1.0	87.1	34.44
SMDJ58(C)A	58.0	64.40	71.20	1	1.0	93.6	32.05
SMDJ60(C)A	60.0	66.70	73.70	1	1.0	96.8	30.99
SMDJ64(C)A	64.0	71.10	78.60	1	1.0	103.0	29.13
SMDJ70(C)A	70.0	77.80	86.00	1	1.0	113.0	26.55
SMDJ75(C)A	75.0	83.30	92.10	1	1.0	121.0	24.79

Electrical Characteristics (T_a=25 °C unless otherwise noted)

Part Number Add C For Bi-Directional (Note 4)	Reverse Stand off Voltage	Breakdown Voltage VBR @ I _T (Note 5)		Test Current	Max. Reverse Leakage @ VRWM(Note 6)	Max Clamping Voltage@I _{pp}	Max. Peak Pulse Current I _{pp}
	V _{RWM} (V)	Min.(V)	Max.(V)	I _T (mA)	I _R (uA)	V _C (V)	(A)
SMDJ78(C)A	78.0	86.70	95.80	1.0	1.0	126.0	23.81
SMDJ85(C)A	85.0	94.40	104.00	1.0	1.0	137.0	21.90
SMDJ90(C)A	90.0	100.00	111.00	1.0	1.0	146.0	20.55
SMDJ100(C)A	100.0	111.00	123.00	1.0	1.0	162.0	18.52
SMDJ110(C)A	110.0	122.00	135.00	1.0	1.0	177.0	16.95
SMDJ120(C)A	120.0	133.00	147.00	1.0	1.0	193.0	15.54
SMDJ130(C)A	130.0	144.00	159.00	1.0	1.0	209.0	14.35
SMDJ150(C)A	150.0	167.00	185.00	1.0	1.0	243.0	12.35
SMDJ160(C)A	160.0	178.00	197.00	1.0	1.0	259.0	11.58
SMDJ170(C)A	170.0	189.00	209.00	1.0	1.0	275.0	10.91
SMDJ180(C)A	180.0	200.00	220.00	1.0	1.0	291.6	10.29
SMDJ190(C)A	190.0	211.00	232.00	1.0	1.0	307.8	9.75
SMDJ200(C)A	200.0	224.00	247.00	1.0	1.0	324.0	9.26
SMDJ220(C)A	220.0	246.00	272.00	1.0	1.0	356.0	8.43
SMDJ250(C)A	250.0	279.00	309.00	1.0	1.0	405.0	7.41
SMDJ300(C)A	300.0	335.00	371.00	1.0	1.0	486.0	6.17
SMDJ350(C)A	350.0	391.00	432.00	1.0	1.0	567.0	5.29
SMDJ400(C)A	400.0	447.00	494.00	1.0	1.0	648.0	4.63
SMDJ440(C)A	440.0	492.00	543.00	1.0	1.0	713.0	4.21

Notes:

4. Suffix C denotes Bi-directional device.
5. VBR measured with I_T current pulse = 300μs
6. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

Typical Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

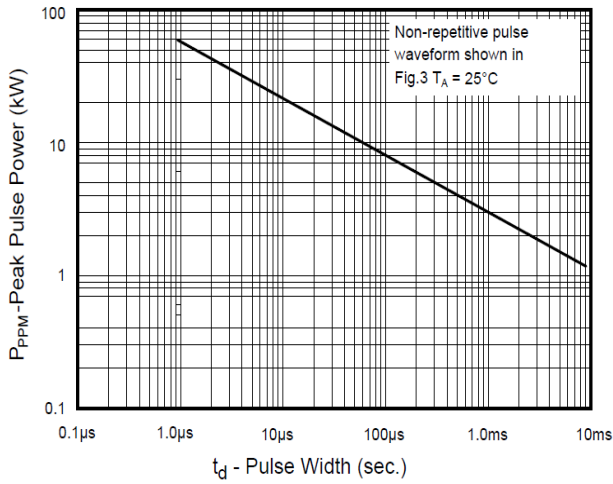


Fig. 2 - Pulse Derating Curve

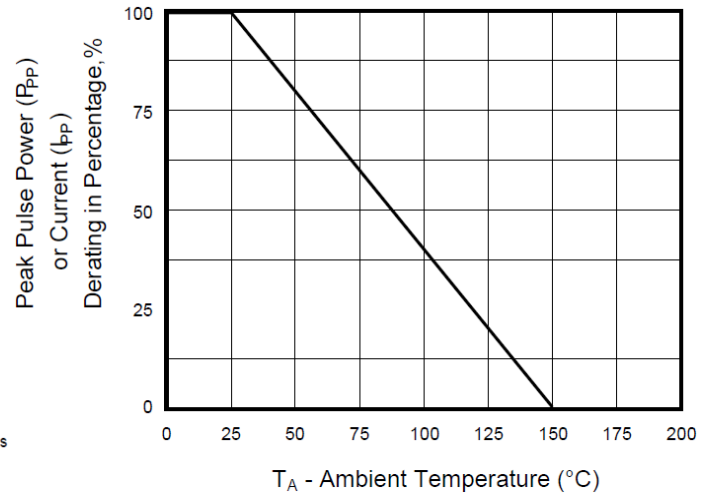


Fig. 3 - Pulse Waveform

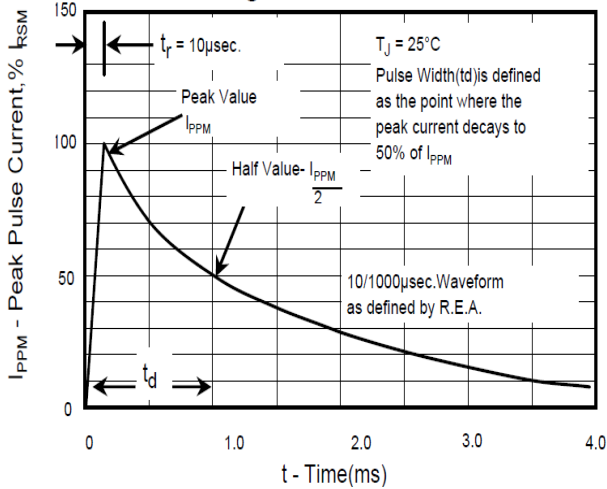


Fig. 4 - Typical Junction Capacitance

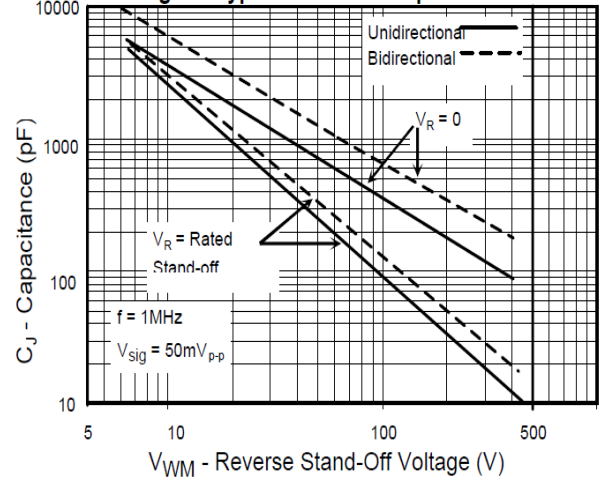


Fig. 5 - Steady State Power Derating Curve

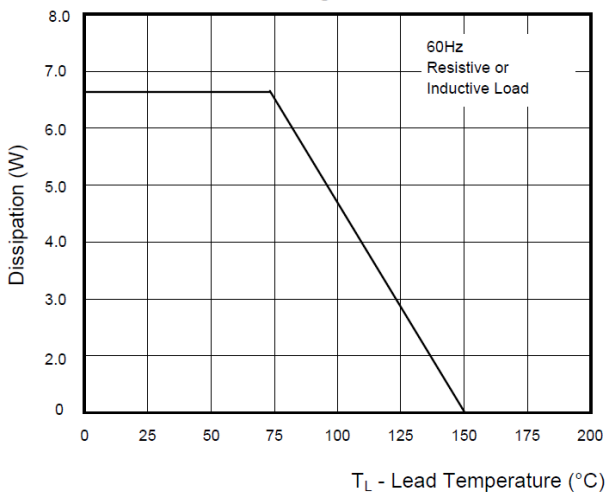
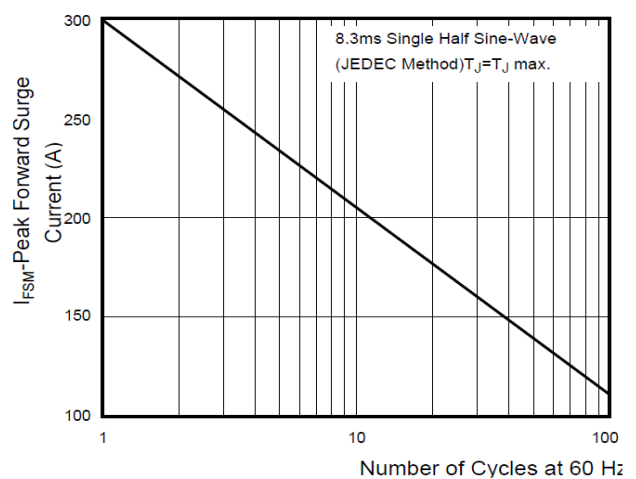
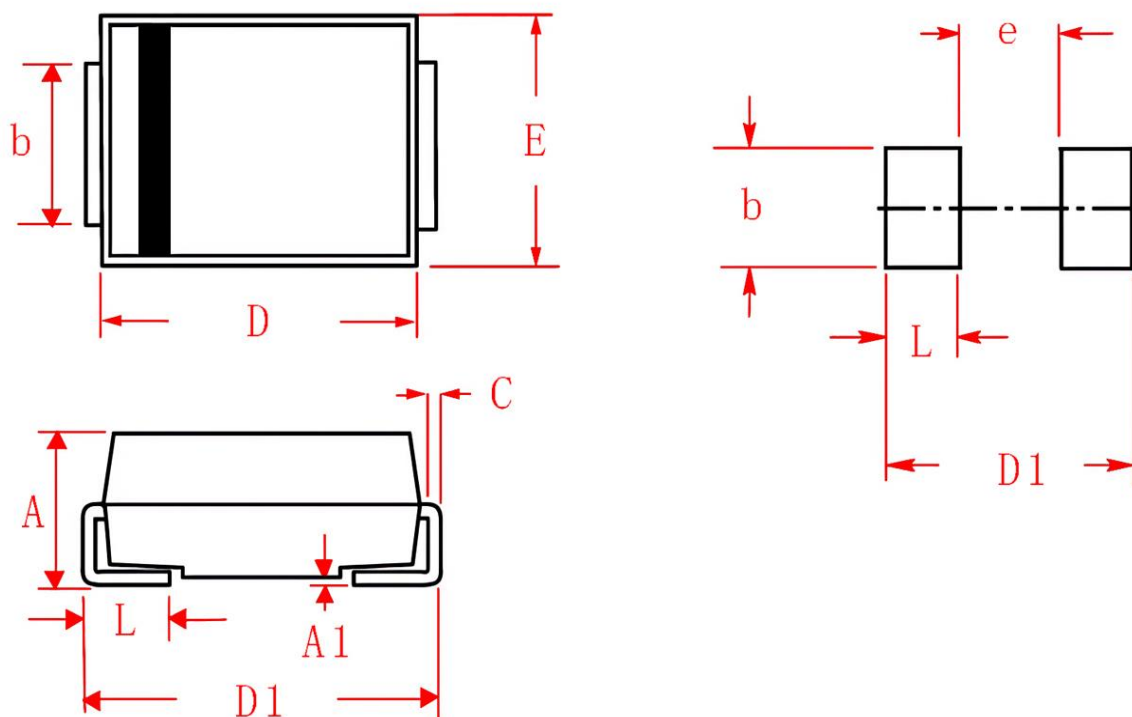


Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



SMC Package information

SMC (DO-214AB)



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	2.000	2.620	0.079	0.103
A1	0.050	0.210	0.002	0.008
b	2.750	3.250	0.108	0.128
C	0.150	0.310	0.006	0.012
D	6.500	7.000	0.256	0.275
D1	7.600	8.000	0.299	0.315
E	5.600	6.200	0.220	0.244
e	-	4.690	-	0.185
L	0.900	1.600	0.035	0.063