

3.0SMCJ5.0(C)A THRU 3.0SMCJ440(C)A

3000W Surface Mount Transient Voltage Suppressors

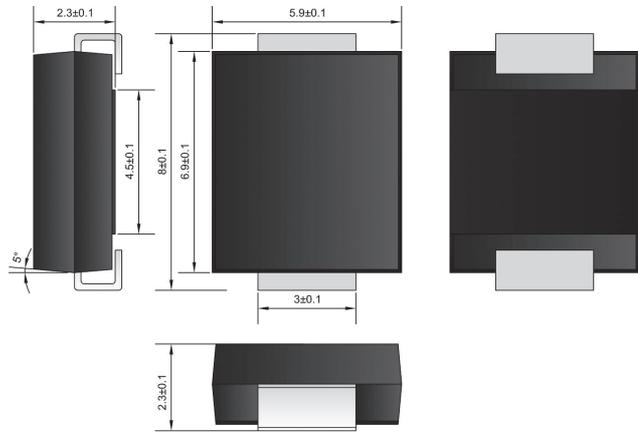
■ Features

- 3000W peak pulse power capability with a 10/1000us waveform, repetition rate (duty cycle): 0.01%.
- Excellent clamping capability.
- Low incremental surge resistance.
- Glass passivated chip junction.
- Ultra high-speed switching.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Mechanical data

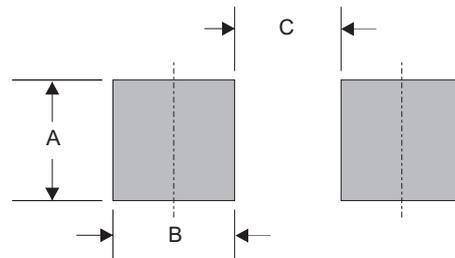
- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.007 ounce, 0.226 gram

■ Outline SMC(DO-214AB)



Dimensions in millimeters

■ SMC foot print



A	B	C
0.132 (3.30)	0.098 (2.50)	0.176 (4.40)

Dimensions in inches and (millimeters)

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	3.0SMCJ series	UNIT
Peak power dissipation	with a 10/1000us waveform, note 1	P_{PPM}	3000	W
Peak forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method), note 2	I_{FSM}	300	A
Steady state power dissipation	on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	6.0	W
Peak pulse current	with a 10/1000us waveform, note 1	I_{PPM}	See Table 1	A
Maximum instantaneous forward voltage	at 100A for unidirectional only, note 3	V_F	3.5 / 5.0	V
Operating temperature		T_J	-55 ~ +150	°C
Storage temperature		T_{STG}	-55 ~ +150	°C

Notes : 1. Non-repetitive current pulse, per Fig. 3 and derated above $T_a=25^\circ\text{C}$ per Fig. 2.
 2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
 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 $V_{BR} > 201\text{V}$.

RATINGS AND CHARACTERISTIC CURV 3.0SMCJ5.0(C)A THRU 3.0SMCJ440(C)A

■ Electrical characteristics

table 1

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @ I_{PP}		Maximum Leakage Current	Marking Code	
	V_{RWM}	$V_{BR Min}$	$V_{BR Max}$	I_T	I_{FSM}	V_C	I_{PP}	$I_R@V_{RWM}$		
	Volts	Volts	Volts	mA	A	Volts	A	uA	UNI	BI
3.0SMCJ5.0(C)A	5.0	6.40	7.00	10	300	9.2	326.09	500	RDE	DDE
3.0SMCJ6.0(C)A	6.0	6.67	7.37	10	300	10.3	291.26	500	RDG	DDG
3.0SMCJ6.5(C)A	6.5	7.22	7.98	10	300	11.2	267.86	500	RDK	DDK
3.0SMCJ7.0(C)A	7.0	7.78	8.60	10	300	12.0	250.00	200	PDM	DDM
3.0SMCJ7.5(C)A	7.5	8.33	9.21	1.0	300	12.9	232.56	100	PDP	DDP
3.0SMCJ8.0(C)A	8.0	8.89	9.83	1.0	300	13.6	220.59	50	PDR	DDR
3.0SMCJ8.5(C)A	8.5	9.44	10.40	1.0	300	14.4	208.33	25	PDT	DDT
3.0SMCJ9.0(C)A	9.0	10.00	11.10	1.0	300	15.4	194.81	10	PDV	DDV
3.0SMCJ10(C)A	10.0	11.10	12.30	1.0	300	17.0	176.47	5	PDX	DDX
3.0SMCJ11(C)A	11.0	12.20	13.50	1.0	300	18.2	164.84	5	PDZ	DDZ
3.0SMCJ12(C)A	12.0	13.30	14.70	1.0	300	19.9	150.75	5	PEE	DEE
3.0SMCJ13(C)A	13.0	14.40	15.90	1.0	300	21.5	139.53	5	PEG	DEG
3.0SMCJ14(C)A	14.0	15.60	17.20	1.0	300	23.2	129.31	5	PEK	DEK
3.0SMCJ15(C)A	15.0	16.70	18.50	1.0	300	24.4	122.95	5	PEM	DEM
3.0SMCJ16(C)A	16.0	17.80	19.70	1.0	300	26.0	115.38	5	PEP	DEP
3.0SMCJ17(C)A	17.0	18.90	20.90	1.0	300	27.6	108.70	5	PER	DER
3.0SMCJ18(C)A	18.0	20.00	22.10	1.0	300	29.2	102.74	5	PET	DET
3.0SMCJ19(C)A	19.0	21.10	23.30	1.0	300	30.8	97.47	5	PEB	DEB
3.0SMCJ20(C)A	20.0	22.20	24.50	1.0	300	32.4	92.59	5	PEV	DEV
3.0SMCJ22(C)A	22.0	24.40	26.90	1.0	300	35.5	84.51	5	PEX	DEX
3.0SMCJ24(C)A	24.0	26.70	29.50	1.0	300	38.9	77.12	5	PEZ	DEZ
3.0SMCJ26(C)A	26.0	28.90	31.90	1.0	300	42.1	71.26	5	PFE	DFE
3.0SMCJ28(C)A	28.0	31.10	34.40	1.0	300	45.4	66.08	5	PFG	DFG
3.0SMCJ30(C)A	30.0	33.30	36.80	1.0	300	48.4	61.98	5	PFK	DFK
3.0SMCJ33(C)A	33.0	36.70	40.06	1.0	300	53.3	56.29	5	PFM	DFM
3.0SMCJ36(C)A	36.0	40.00	44.20	1.0	300	58.1	51.64	5	PFP	DFP
3.0SMCJ40(C)A	40.0	44.40	49.10	1.0	300	64.5	46.51	5	PFR	DFR
3.0SMCJ43(C)A	43.0	47.80	52.80	1.0	300	69.4	43.23	5	PFT	DFT
3.0SMCJ45(C)A	45.0	50.00	55.30	1.0	300	72.7	41.27	5	PFV	DFV
3.0SMCJ48(C)A	48.0	53.30	58.90	1.0	300	77.4	38.76	5	PFX	DFX
3.0SMCJ51(C)A	51.0	56.70	62.70	1.0	300	82.4	36.41	5	PFZ	DFZ
3.0SMCJ54(C)A	54.0	60.00	66.30	1.0	300	87.1	34.44	5	PGE	DGE
3.0SMCJ58(C)A	58.0	64.40	71.20	1.0	300	93.6	32.05	5	PGG	DGG
3.0SMCJ60(C)A	60.0	66.70	73.70	1.0	300	96.8	30.99	5	PGK	DGK
3.0SMCJ64(C)A	64.0	71.10	78.60	1.0	300	103.0	29.13	5	PGM	DGM

RATINGS AND CHARACTERISTIC CURV 3.0SMCJ5.0(C)A THRU 3.0SMCJ440(C)A

■ Electrical characteristics

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @ I_{PP}		Maximum Leakage Current	Marking Code	
	V_{RWM}	$V_{BR Min}$	$V_{BR Max}$	I_T	I_{FSM}	V_C	I_{PP}	$I_R @ V_{RWM}$		
	Volts	Volts	Volts	mA	A	Volts	A	uA	UNI	BI
3.0SMCJ70(C)A	70.0	77.80	86.00	1.0	300	113.0	26.55	5	PGP	DGP
3.0SMCJ75(C)A	75.0	83.30	92.10	1.0	300	121.0	24.79	5	PGR	DGR
3.0SMCJ78(C)A	78.0	86.70	95.80	1.0	300	126.0	23.81	5	PGT	DGT
3.0SMCJ80(C)A	80.0	88.80	97.60	1.0	300	129.6	23.15	5	PGB	DGB
3.0SMCJ85(C)A	85.0	94.40	104.00	1.0	300	137.0	21.90	5	PGV	DGV
3.0SMCJ90(C)A	90.0	100.00	111.00	1.0	300	146.0	20.55	5	PGX	DGX
3.0SMCJ100(C)A	100.0	111.00	123.00	1.0	300	162.0	18.52	5	PGZ	DGZ
3.0SMCJ110(C)A	110.0	122.00	135.00	1.0	300	177.0	16.95	5	PHE	DHE
3.0SMCJ120(C)A	120.0	133.00	147.00	1.0	300	193.0	15.54	5	PHG	DHG
3.0SMCJ130(C)A	130.0	144.00	159.00	1.0	300	209.0	14.35	5	PHK	DHK
3.0SMCJ140(C)A	140.0	155.00	171.00	1.0	300	226.8	13.23	5	PHM	DHM
3.0SMCJ150(C)A	150.0	167.00	185.00	1.0	300	243.0	12.35	5	PHM	DHM
3.0SMCJ160(C)A	160.0	178.00	197.00	1.0	300	259.0	11.58	5	PHP	DHP
3.0SMCJ170(C)A	170.0	189.00	209.00	1.0	300	275.0	10.91	5	PHR	DHR
3.0SMCJ180(C)A	180.0	200.00	220.00	1.0	300	291.6	10.29	5	PHT	DHT
3.0SMCJ190(C)A	190.0	211.00	232.00	1.0	300	307.8	9.75	5	PHV	DHV
3.0SMCJ200(C)A	200.0	224.00	247.00	1.0	300	324.0	9.26	5	PHW	DHW
3.0SMCJ220(C)A	220.0	246.00	272.00	1.0	300	356.0	8.43	5	PHX	DHX
3.0SMCJ250(C)A	250.0	279.00	309.00	1.0	300	405.0	7.41	5	PHZ	DHZ
3.0SMCJ300(C)A	300.0	335.00	371.00	1.0	300	486.0	6.17	5	PJE	DJE
3.0SMCJ350(C)A	350.0	391.00	432.00	1.0	300	567.0	5.29	5	PJG	DJG
3.0SMCJ400(C)A	400.0	447.00	494.00	1.0	300	648.0	4.63	5	PJK	DJK
3.0SMCJ440(C)A	440.0	492.00	543.00	1.0	300	713.0	4.21	5	PJM	DJM

Note 1. Suffix 'C' denotes bi-directional devices. Suffix 'A' denotes 5% tolerance devices, no suffix denotes 10% tolerance devices.
 2. For bi-directional types having V_{RWM} of 10 volts and less, the I_R limit is doubled.

■ Rating and characteristic curves

Fig.1 - Peak Pulse Power Rating Curve

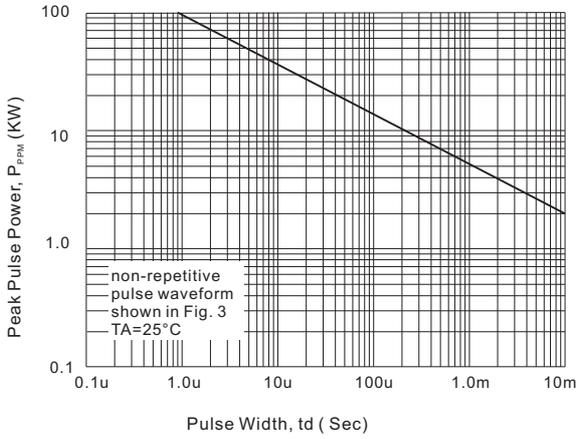


Fig.2 - Pulse Derating Curve

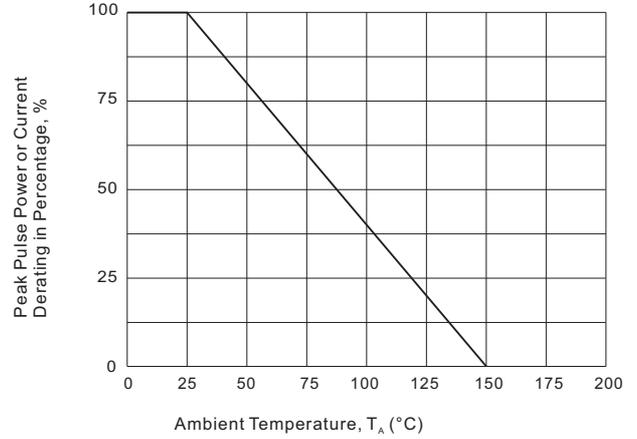


Fig.3 - Pulse Waveform

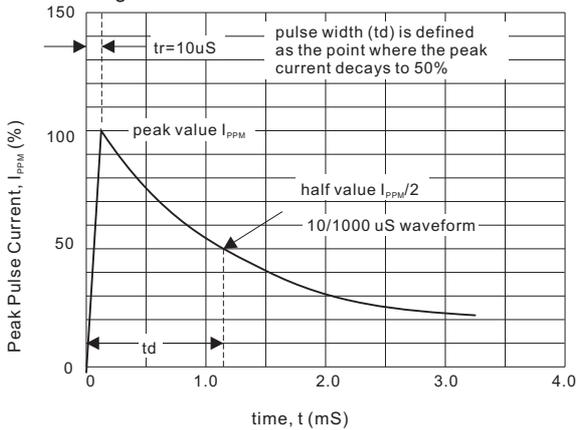


Fig.4 - Typical Junction Capacitance

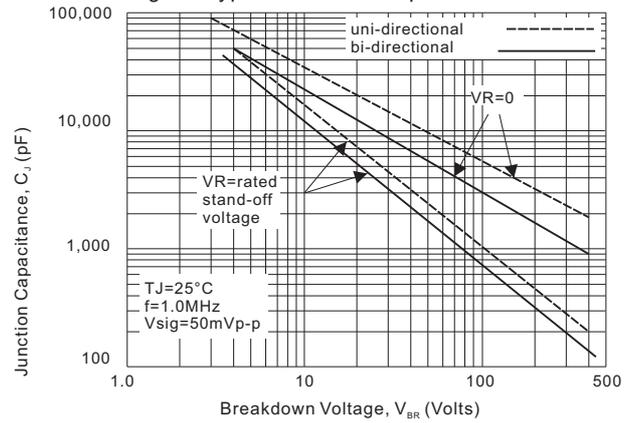


Fig.5 - Steady State Power Derating Curve

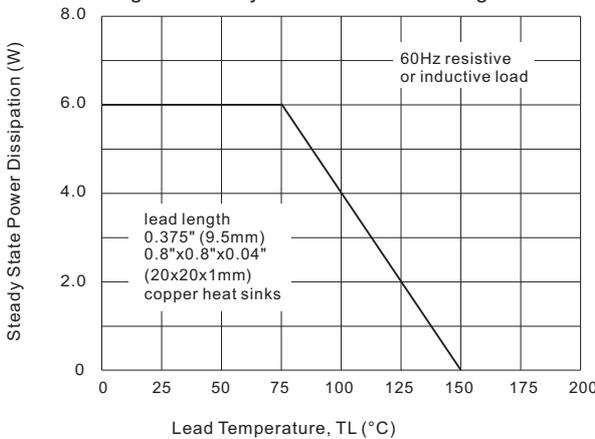


Fig.6 - Maximum Non-Repetitive Forward Surge Current

