



Data Sheet

Customer :

Product : Transient Voltage Suppressor

Part No.: 3.0SMCJ Series

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Edition : REV.A



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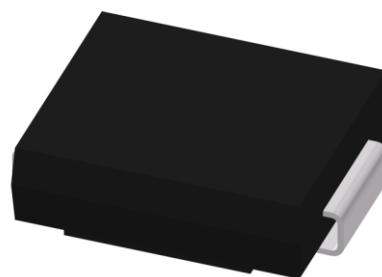
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Voltage 5.0 to 170volts 3000 watt Peak Power Pulse

■ Features

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition rate(duty cycle):0.5%
- Fast response time: typically less then 5.0ns from 0 volts to BV for bidirectional types
- Typical I_D less then 1uA above 10V
- High temperature soldering guaranteed: 250°C/10seconds at terminals
- Plastic package has Underwrites Laboratory Flammability Classification 94V-O



■ Mechanical Data

Case : JEDEC DO-214AB molded plastic over passivated junction

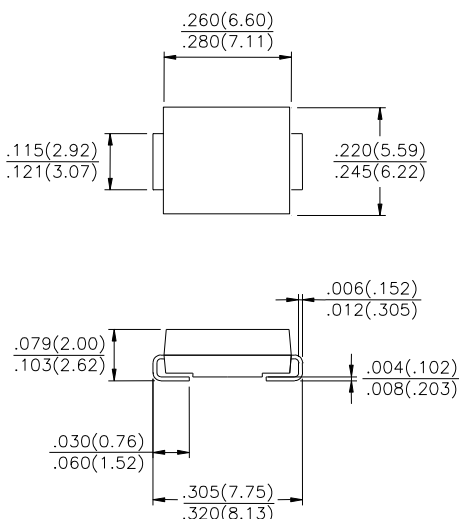
Terminals : Solder plated solderable per MIL-STD-750, Method 2026

Polarity : Color band denotes positive end (cathode) except bi-directional

Standard Packaging: 16mm tape (EIA STD EIA-481)

Weight : 0.007 ounce, 0.21 gram

■ Package Dimensions in inches(millimeters): SMC/DO-214AB



■ Maximum Ratings And Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 μ s (Note 1,2) Fig.1	P_{PPM}	Minimum 3000	W
Peak Forward Surge Current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) (Note 2, 3)	I_{FSM}	200	A
Peak Pulse on Current 10/1000 μ s waveform (Note 1) Fig.3	I_{ppm}	See Table 1	A
Operating Junction and Storage temperature Range	T_J, T_{STG}	-55 ~ +150	°C

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

2. Mounted on 8.0mm² copper pads to each terminal

3. Measured on 8.3mm single half sine-wave or equivalent square wave, duty cycle=4 pulses per minutes maximum



■ Electrical Characteristics

Part No. \ Item		Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage VBR(V) @IT		Test Current IT (mA)	Maximum Clamping Voltage @I _{PP} VC(V)	Peak Pulse Current I _{PP} (A)	Reveres Leakage @VRWM IR(uA)	
UNI-Directional	Bi-Directional	UNI	BI	VTWN(V)	Min	Max				UNI	BI
3.0SMCJ5.0	3.0SMCJ5.0C	HDD	IDD	5.0	6.40	7.55	10	9.6	312.5	1000	2000
3.0SMCJ5.0A	3.0SMCJ5.0CA	HDE	IDE	5.0	6.40	7.25	10	9.2	326.0	1000	2000
3.0SMCJ6.0	3.0SMCJ6.0C	HDF	IDF	6.0	6.67	8.45	10	11.4	263.2	1000	2000
3.0SMCJ6.0A	3.0SMCJ6.0CA	HDG	UDG	6.0	6.67	7.67	10	10.3	291.3	1000	2000
3.0SMCJ6.5	3.0SMCJ6.5C	HDH	IDH	6.5	7.22	9.14	10	12.3	243.9	500	1000
3.0SMCJ6.5A	3.0SMCJ6.5CA	HDK	IDK	6.5	7.22	8.30	10	11.2	267.9	500	1000
3.0SMCJ7.0	3.0SMCJ7.0C	HDL	IDL	7.0	7.78	9.86	10	13.3	225.6	200	400
3.0SMCJ7.0A	3.0SMCJ7.0CA	HDM	IDM	7.0	7.78	8.95	10	12.0	250.0	200	400
3.0SMCJ7.5	3.0SMCJ7.5C	HDN	IDN	7.5	8.33	10.67	1	14.3	209.8	100	200
3.0SMCJ7.5A	3.0SMCJ7.5CA	HDP	IDP	7.5	8.33	9.58	1	12.9	232.6	100	200
3.0SMCJ8.0	3.0SMCJ8.0C	HDQ	IDQ	8.0	8.89	11.30	1	15.0	200.0	50	100
3.0SMCJ8.0A	3.0SMCJ8.0CA	HDR	IDR	8.0	8.89	10.23	1	13.6	220.6	50	100
3.0SMCJ8.5	3.0SMCJ8.5C	HDS	IDS	8.5	9.44	11.92	1	15.9	188.8	25	50
3.0SMCJ8.5A	3.0SMCJ8.5CA	HDT	IDT	8.5	9.44	10.82	1	14.4	208.4	20	50
3.0SMCJ9.0	3.0SMCJ9.0C	HDU	IDU	9.0	10.0	12.60	1	16.9	177.4	10	20
3.0SMCJ9.0A	3.0SMCJ9.0CA	HDV	IDV	9.0	10.0	11.50	1	15.4	194.8	10	20
3.0SMCJ10	3.0SMCJ10C	HDW	IDW	10.0	11.1	14.10	1	18.8	159.6	5	
3.0SMCJ10A	3.0SMCJ10CA	HDX	IDX	10.0	11.1	12.80	1	17.0	176.4	5	
3.0SMCJ11	3.0SMCJ11C	HDY	IDY	11.0	12.2	15.40	1	20.1	149.2	5	
3.0SMCJ11A	3.0SMCJ11CA	HDZ	IDZ	11.0	12.2	14.00	1	18.2	184.8	5	
3.0SMCJ12	3.0SMCJ12C	HED	IED	12.0	13.3	16.90	1	22.0	136.4	5	
3.0SMCJ12A	3.0SMCJ12CA	HEE	IEE	12.0	13.3	15.30	1	19.9	150.6	5	
3.0SMCJ13	3.0SMCJ13C	HEF	IEF	13.0	14.4	18.20	1	23.8	126.0	5	
3.0SMCJ13A	3.0SMCJ13CA	HEG	IEG	13.0	14.4	16.50	1	21.5	139.4	5	
3.0SMCJ14	3.0SMCJ14C	HEH	IEH	14.0	15.6	19.80	1	25.8	116.2	5	
3.0SMCJ14A	3.0SMCJ14CA	HEK	IEK	14.0	15.6	17.90	1	23.2	129.4	5	
3.0SMCJ15	3.0SMCJ15C	HEL	IEL	15.0	16.7	21.10	1	26.9	111.6	5	
P5SMBJ15A	3.0SMCJ15CA	HEM	IEM	15.0	16.7	19.20	1	24.4	123.0	5	
P6SMB16	P6SMB16C	HEN	IEN	16.0	17.8	22.60	1	28.8	104.2	5	
3.0SMCJ16A	3.0SMCJ16CA	HEP	IEP	16.0	17.8	20.50	1	26.0	115.4	5	
3.0SMCJ17	3.0SMCJ17C	HEQ	IEQ	17.0	18.9	23.90	1	30.5	98.4	5	
3.0SMCJ17A	3.0SMCJ17CA	HER	IER	17.0	18.9	21.70	1	27.6	106.6	5	
3.0SMCJ18	3.0SMCJ18C	HES	IES	18.0	20.0	25.30	1	32.2	93.2	5	
3.0SMCJ18A	3.0SMCJ18CA	HET	IET	18.0	20.0	23.30	1	29.2	102.8	5	
3.0SMCJ20	3.0SMCJ20C	HEU	IEU	20.0	22.2	28.10	1	35.8	83.8	5	
3.0SMCJ20A	3.0SMCJ20CA	HEV	IEV	20.0	22.2	25.50	1	32.4	92.6	5	
3.0SMCJ22	3.0SMCJ22C	HEW	IEW	22.0	24.4	30.90	1	39.4	76.2	5	
3.0SMCJ22A	3.0SMCJ22CA	HEX	IEX	22.0	24.4	28.00	1	35.5	84.4	5	
3.0SMCJ24	3.0SMCJ24C	HEY	IEY	24.0	26.7	33.80	1	43.0	69.8	5	
3.0SMCJ24A	3.0SMCJ24CA	HEZ	IEZ	24.0	26.7	30.70	1	38.9	77.2	5	
3.0SMCJ26	3.0SMCJ26C	HFD	IFD	26.0	28.9	36.60	1	46.6	64.4	5	
3.0SMCJ26A	3.0SMCJ26CA	HFH	IFE	26.0	28.9	33.20	1	42.1	71.2	5	
3.0SMCJ28	3.0SMCJ28C	HFF	IFF	28.0	31.1	39.40	1	50.0	60.0	5	
3.0SMCJ28A	3.0SMCJ28CA	HFG	IFG	28.0	31.1	35.80	1	45.4	66.0	5	
3.0SMCJ30	3.0SMCJ30C	HFH	IFH	30.0	33.3	42.20	1	53.5	56.0	5	
3.0SMCJ30A	3.0SMCJ30CA	HFK	IFK	30.0	33.3	38.30	1	48.4	62.0	5	
3.0SMCJ33	3.0SMCJ33C	HFL	IFL	33.0	36.7	46.50	1	59.0	50.4	5	
3.0SMCJ33A	3.0SMCJ33CA	HFM	IFM	33.0	36.7	42.20	1	53.3	56.2	5	
3.0SMCJ36	3.0SMCJ36C	HFN	IFN	36.0	40.0	50.70	1	64.3	46.6	5	
3.0SMCJ36A	3.0SMCJ36CA	HFP	IFP	36.0	40.0	46.00	1	58.1	51.6	5	



■Electrical Characteristics

Item		Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage VBR(V) @IT		Test Current IT (mA)	Maximum Clamping Voltage @I _{PP} VC(V)	Peak Pulse Current I _{PP} (A)	Reveres Leakage @VRWM IR(μA)	
Part No.		UNI	BI	VTWN(V)	Min	Max				UNI	BI
3.0SMCJ40	3.0SMCJ40C	HFQ	IFQ	40.0	44.4	56.30	1	71.4	42.0	5	
3.0SMCJ40A	3.0SMCJ40CA	HFR	IFR	40.0	44.4	51.10	1	64.5	46.4	5	
3.0SMCJ43	3.0SMCJ43C	HFS	IFS	43.0	47.8	60.50	1	76.7	39.2	5	
3.0SMCJ43A	3.0SMCJ43CA	HFT	IFT	43.0	47.8	54.90	1	69.4	43.2	5	
3.0SMCJ45	3.0SMCJ45C	HFU	IFU	45.0	50.0	63.30	1	80.3	37.4	5	
3.0SMCJ45A	3.0SMCJ45CA	HFV	IFV	45.0	50.0	57.50	1	72.7	41.2	5	
3.0SMCJ48	3.0SMCJ48C	HFV	IFV	48.0	53.3	67.50	1	85.5	35.0	5	
3.0SMCJ48A	3.0SMCJ48CA	HFX	IFX	48.0	53.3	61.30	1	77.4	38.8	5	
3.0SMCJ51	3.0SMCJ51C	HFY	IFY	51.0	56.7	71.80	1	91.1	37.0	5	
3.0SMCJ51A	3.0SMCJ51CA	HFZ	IFZ	51.0	56.7	65.20	1	82.4	36.4	5	
3.0SMCJ54	3.0SMCJ54C	HGD	IGD	54.0	60.0	76.00	1	96.3	31.2	5	
3.0SMCJ54A	3.0SMCJ54CA	He	IGE	54.0	60.0	69.00	1	87.1	34.4	5	
3.0SMCJ58	3.0SMCJ58C	HGF	IGF	58.0	64.4	81.60	1	103.0	39.2	5	
3.0SMCJ58A	3.0SMCJ58CA	HGG	IGG	58.0	64.4	74.10	1	93.6	32.0	5	
3.0SMCJ60	3.0SMCJ60C	HGH	IGH	60.0	66.7	84.50	1	107.0	28.0	5	
3.0SMCJ60A	3.0SMCJ60CA	HGK	IGK	60.0	66.7	76.70	1	96.8	31.0	5	
3.0SMCJ64	3.0SMCJ64C	HGL	IGL	64.0	77.1	90.1	1	114.0	26.4	5	
3.0SMCJ64A	3.0SMCJ64CA	HGM	IGM	64.0	77.1	81.8	1	103.0	29.2	5	
3.0SMCJ70	3.0SMCJ70C	HGN	IGN	70.0	77.8	98.6	1	125.0	24.0	5	
3.0SMCJ70A	3.0SMCJ70CA	HGP	IGP	70.0	77.8	89.5	1	113.0	26.6	5	
3.0SMCJ75	3.0SMCJ75C	HGQ	IGQ	75.0	83.3	105.7	1	134.0	22.4	5	
3.0SMCJ75A	3.0SMCJ75CA	HGR	IGR	75.0	83.3	95.8	1	121.0	24.8	5	
3.0SMCJ78	3.0SMCJ78C	HGS	IGS	78.0	86.7	109.8	1	139.0	21.6	5	
3.0SMCJ78A	3.0SMCJ78CA	HGT	IGT	78.0	86.7	99.7	1	126.0	22.8	5	
3.0SMCJ85	3.0SMCJ85C	HGU	IGU	85.0	94.4	119.2	1	151.0	19.8	5	
3.0SMCJ85A	3.0SMCJ85CA	HGV	IGV	85.0	94.4	108.2	1	137.0	20.8	5	
3.0SMCJ90	3.0SMCJ90C	HGW	IGW	90.0	100.0	126.5	1	160.0	18.8	5	
3.0SMCJ90A	3.0SMCJ90CA	HGX	IGX	90.0	100.0	115.5	1	146.0	20.6	5	
3.0SMCJ100	3.0SMCJ100C	HGY	IGY	100.0	111.0	141.0	1	179.0	16.6	5	
3.0SMCJ100A	3.0SMCJ100CA	HGZ	IGZ	100.0	111.0	128.00	1	162.0	18.6	5	
3.0SMCJ110	3.0SMCJ110C	HHD	IHD	110.0	122.0	154.5	1	196.0	15.4	5	
3.0SMCJ110A	3.0SMCJ110CA	HHE	IHE	110.0	122.0	140.5	1	177.0	16.8	5	
3.0SMCJ120	3.0SMCJ120C	HHF	IHF	120.0	133.0	169.0	1	214.0	14.0	5	
3.0SMCJ120A	3.0SMCJ120CA	HHG	IHG	120.0	133.0	153.0	1	193.0	15.6	5	
3.0SMCJ130	3.0SMCJ130C	HHH	IHH	130.0	144.0	182.5	1	231.0	13.0	5	
3.0SMCJ130A	3.0SMCJ130CA	HHK	IHK	130.0	144.0	165.5	1	209.0	14.4	5	
3.0SMCJ150	3.0SMCJ150C	HHL	IHL	150.0	167.0	211.5	1	268.0	11.2	5	
3.0SMCJ15A	3.0SMCJ150CA	HHM	IHM	150.0	167.0	192.5	1	243.0	12.4	5	
3.0SMCJ160	3.0SMCJ160C	HHN	IHN	160.0	178.0	226.0	1	287.0	10.4	5	
3.0SMCJ160A	3.0SMCJ160CA	HHP	IHP	160.0	178.0	205.0	1	259.0	11.6	5	
3.0SMCJ170	3.0SMCJ170C	HHQ	IHQ	170.0	189.0	239.5	1	304.0	9.8	5	
3.0SMCJ170A	3.0SMCJ170CA	HHR	IHR	170.0	189.0	217.5	1	275.0	11.0	5	

Rating and Characteristic Curve

Fig. 1 - PEAK PULSE POWER VS PULSE TIME

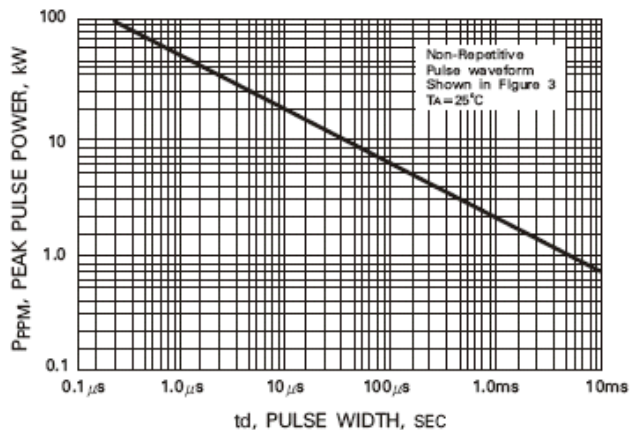


Fig. 2 - PULSE DERATING CURVE

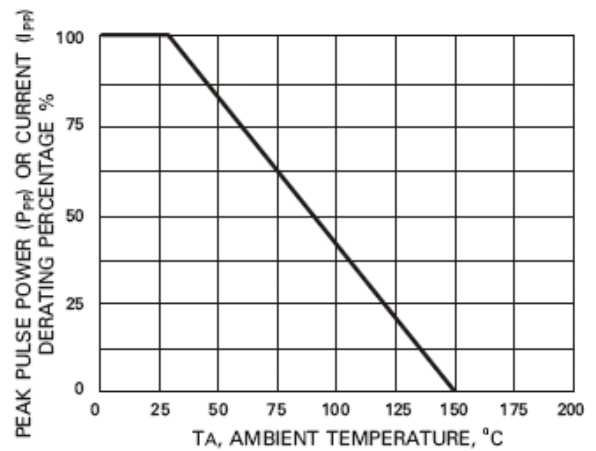


Fig. 3 - PULSE WAVEFORM

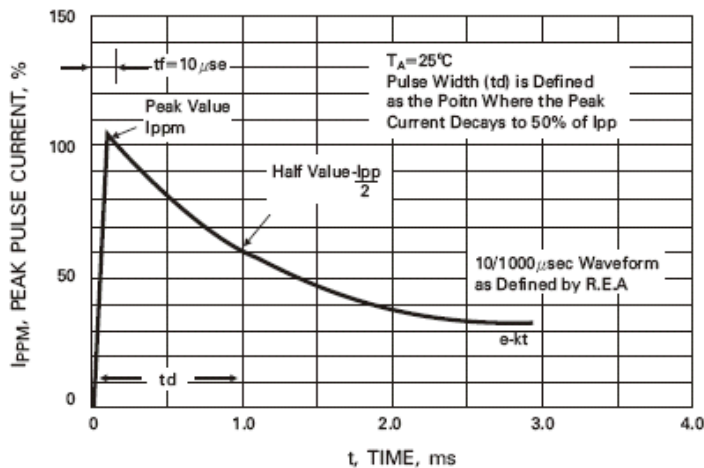


Fig. 4 - TYPICAL CAPACITANCE VS STAND-OFF VOLTAGE

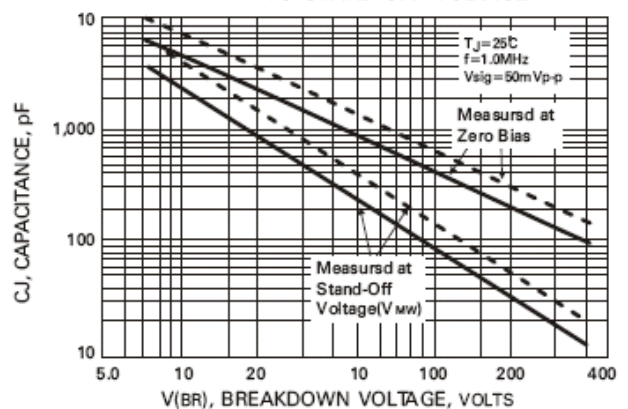


Fig. 5 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

