

**SURFACE MOUNT  
UNIDIRECTIONAL AND BIDIRECTIONAL  
TRANSIENT VOLTAGE SUPPRESSORS**

STAND-OFF VOLTAGE - **5.0** to **170** Volts  
POWER DISSIPATION - **3000** WATTS

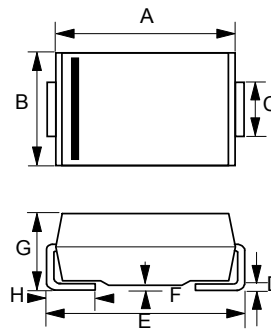
**FEATURES**

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ns for Uni-direction, less than 5.0ns for Bi-direction, from 0 Volts to BV min

**MECHANICAL DATA**

- Case : Molded plastic
- Polarity : by cathode band denotes uni-directional device  
none cathode band denotes bi-directional device
- Weight : 0.007 ounces, 0.21 gram

**SMC**



SMC		
DIM.	MIN.	MAX.
A	6.60	7.11
B	5.59	6.22
C	2.92	3.18
D	0.15	0.31
E	7.75	8.13
F	0.05	0.20
G	2.01	2.40
H	0.76	1.52
All Dimensions in millimeter		

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

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

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
PEAK POWER DISSIPATION AT $T_J = 25^\circ\text{C}$ , $T_P = 1\text{ms}$ (Note 1)	$P_{PK}$	3000	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave @ $T_J = 25^\circ\text{C}$ (Note 2)	$I_{FSM}$	300	AMPS.
Steady State Power Dissipation at $T_L = 120^\circ\text{C}$ lead lengths 0.375" (9.5mm) , see fig. 6	$P_{M(AV)}$	2.0	WATTS
Operating Temperature Range	$T_J$	-55 to +175	°C
Storage Temperature Range	$T_{STG}$	-55 to +175	°C

NOTES : 1. Non-repetitive current pulse, per Fig. 3 and derated above  $T_J = 25^\circ\text{C}$  per Fig.1.  
2. Only for unidirectional units.

REV. 10, Aug-2011, KSIC03

FIG.1 - PULSE DERATING CURVE

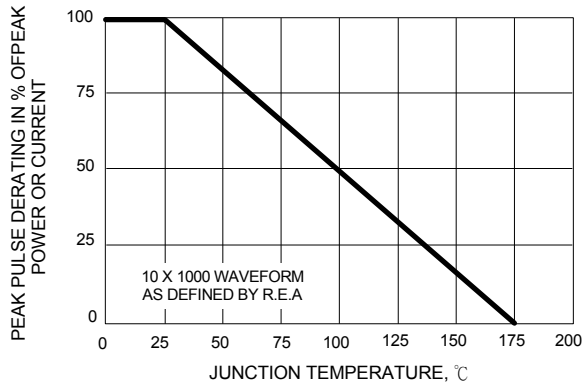


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

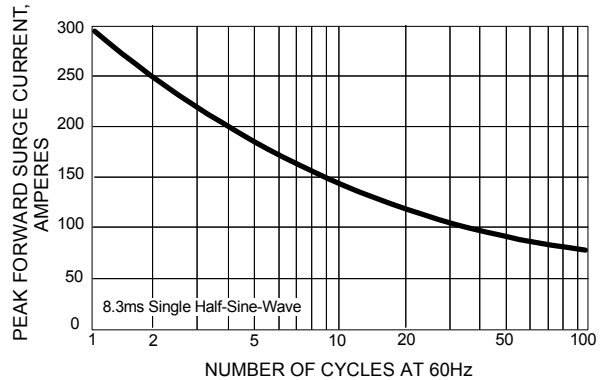


FIG.3 - PULSE WAVEFORM

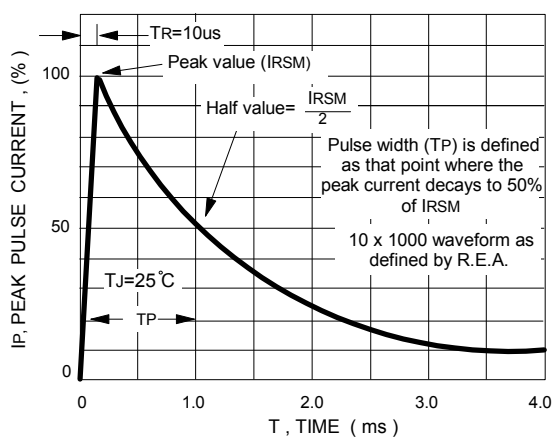


FIG.4 - TYPICAL JUNCTION CAPACITANCE

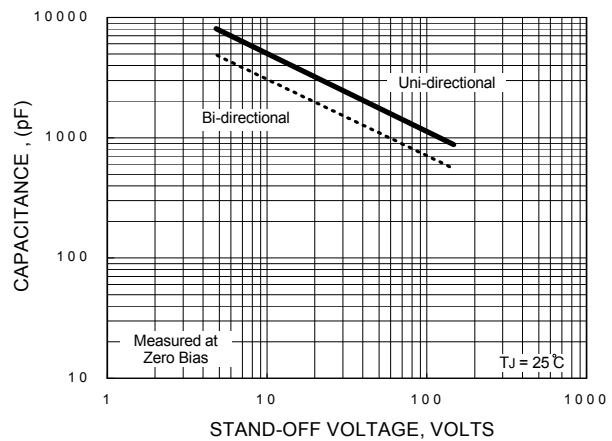


FIG.5 - PULSE RATING CURVE

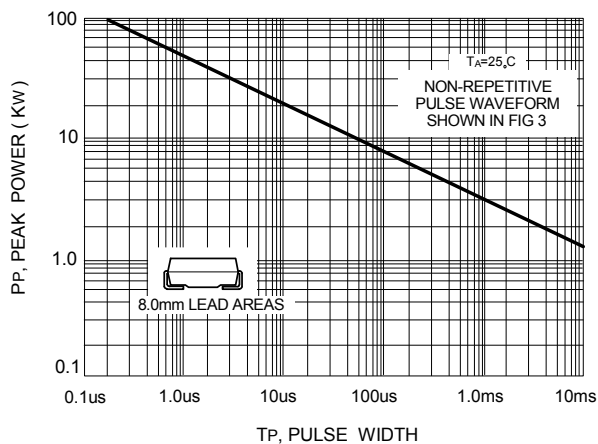
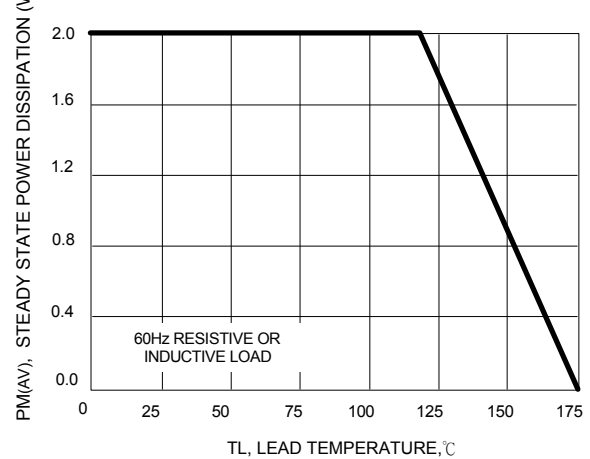


FIG.6 - STEADY STATE POWER DERATING CURVE



Type Number	Type Number	Device Marking code		Reverse Standoff Voltage	Breakdown Voltage BV Volts @It			Max. Reverse Leakage @VR	Max. Clamping Voltage @Ipp	Max. Peak Pulse Current
(UNI)	(BI)	(UNI)	(BI)	VR (V)	Min (V)	Max (V)	It (mA)	IR (uA)	Vc (V)	Ipp (A)
3.0SMCJ5.0	3.0SMCJ5.0C	HDD	IDD	5.0	6.40	7.82	10	1000.0	9.6	312.5
3.0SMCJ5.0A	3.0SMCJ5.0CA	HDE	IDE	5.0	6.40	7.07	10	1000.0	9.2	326.1
3.0SMCJ5.0A6*	N/A	HDE6		5.0	6.40	7.07	10	1000.0	9.2	326.1
3.0SMCJ6.0	3.0SMCJ6.0C	HDF	IDF	6.0	6.67	8.15	10	1000.0	11.4	263.2
3.0SMCJ6.0A	3.0SMCJ6.0CA	HDG	IDG	6.0	6.67	7.37	10	1000.0	10.3	291.3
3.0SMCJ6.5	3.0SMCJ6.5C	HDH	IDH	6.5	7.22	8.82	10	500.0	12.3	243.9
3.0SMCJ6.5A	3.0SMCJ6.5CA	HDK	IDK	6.5	7.22	7.98	10	500.0	11.2	267.9
3.0SMCJ7.0	3.0SMCJ7.0C	HDL	IDL	7.0	7.78	9.51	10	200.0	13.3	225.6
3.0SMCJ7.0A	3.0SMCJ7.0CA	HDM	IDM	7.0	7.78	8.60	10	200.0	12.0	250.0
3.0SMCJ7.5	3.0SMCJ7.5C	HDN	IDN	7.5	8.33	10.18	1	100.0	14.3	209.8
3.0SMCJ7.5A	3.0SMCJ7.5CA	HDP	IDP	7.5	8.33	9.21	1	100.0	12.9	232.6
3.0SMCJ8.0	3.0SMCJ8.0C	HDQ	IDQ	8.0	8.89	10.86	1	50.0	15.0	200.0
3.0SMCJ8.0A	3.0SMCJ8.0CA	HDR	IDR	8.0	8.89	9.83	1	50.0	13.6	220.6
3.0SMCJ8.5	3.0SMCJ8.5C	HDS	IDS	8.5	9.44	11.54	1	25.0	15.9	188.7
3.0SMCJ8.5A	3.0SMCJ8.5CA	HDT	IDT	8.5	9.44	10.43	1	25.0	14.4	208.3
3.0SMCJ9.0	3.0SMCJ9.0C	HDU	IDU	9.0	10.0	12.22	1	10.0	16.9	177.5
3.0SMCJ9.0A	3.0SMCJ9.0CA	HDV	IDV	9.0	10.0	11.05	1	10.0	15.4	194.8
3.0SMCJ10	3.0SMCJ10C	HDW	IDW	10.0	11.1	13.56	1	5.0	18.8	159.6
3.0SMCJ10A	3.0SMCJ10CA	HDX	IDX	10.0	11.1	12.27	1	5.0	17.0	176.5
3.0SMCJ11	3.0SMCJ11C	HDY	IDY	11.0	12.2	14.9	1	5.0	20.1	149.3
3.0SMCJ11A	3.0SMCJ11CA	HDZ	IDZ	11.0	12.2	13.5	1	5.0	18.2	164.8
3.0SMCJ12	3.0SMCJ12C	HED	IED	12.0	13.3	16.3	1	5.0	22.0	136.4
3.0SMCJ12A	3.0SMCJ12CA	HEE	IEE	12.0	13.3	14.7	1	5.0	19.9	150.8
3.0SMCJ13	3.0SMCJ13C	HEF	IEF	13.0	14.4	17.6	1	5.0	23.8	126.1
3.0SMCJ13A	3.0SMCJ13CA	HEG	IEG	13.0	14.4	15.9	1	5.0	21.5	139.5
3.0SMCJ14	3.0SMCJ14C	HEH	IEH	14.0	15.6	19.1	1	5.0	25.8	116.3
3.0SMCJ14A	3.0SMCJ14CA	HEK	IEK	14.0	15.6	17.2	1	5.0	23.2	129.3
3.0SMCJ15	3.0SMCJ15C	HEL	IEL	15.0	16.7	20.4	1	5.0	26.9	111.5
3.0SMCJ15A	3.0SMCJ15CA	HEM	IEM	15.0	16.7	18.5	1	5.0	24.2	124.0
3.0SMCJ16	3.0SMCJ16C	HEN	IEN	16.0	17.8	21.8	1	5.0	28.8	104.2
3.0SMCJ16A	3.0SMCJ16CA	HEP	IEP	16.0	17.8	19.7	1	5.0	26.0	115.4
3.0SMCJ17	3.0SMCJ17C	HEQ	IEQ	17.0	18.9	23.1	1	5.0	30.5	98.4
3.0SMCJ17A	3.0SMCJ17CA	HER	IER	17.0	18.9	20.9	1	5.0	27.6	108.7
3.0SMCJ18	3.0SMCJ18C	HES	IES	18.0	20.0	24.4	1	5.0	32.2	93.2
3.0SMCJ18A	3.0SMCJ18CA	HET	IET	18.0	20.0	22.1	1	5.0	29.2	102.7
3.0SMCJ20	3.0SMCJ20C	HEU	IEU	20.0	22.2	27.1	1	5.0	35.8	83.8
3.0SMCJ20A	3.0SMCJ20CA	HEV	IEV	20.0	22.2	24.5	1	5.0	32.4	92.6
3.0SMCJ20A6*	N/A	HEV6	---	20.0	22.2	24.5	1	5.0	32.4	92.6
3.0SMCJ22	3.0SMCJ22C	HEW	IEW	22.0	24.4	29.8	1	5.0	39.4	76.1
3.0SMCJ22A	3.0SMCJ22CA	HEX	IEX	22.0	24.4	27.0	1	5.0	35.5	84.5
3.0SMCJ24	3.0SMCJ24C	HEY	IEY	24.0	26.7	32.6	1	5.0	43.0	69.8
3.0SMCJ24A	3.0SMCJ24CA	HEZ	IEZ	24.0	26.7	29.5	1	5.0	38.9	77.1
3.0SMCJ24A6*	N/A	HEZ6	---	24.5	---	29.5	1	5.0	38.9	77.1
3.0SMCJ26	3.0SMCJ26C	HFD	IFD	26.0	28.9	35.3	1	5	46.6	64.4
3.0SMCJ26A	3.0SMCJ26CA	HFE	IFE	26.0	28.9	31.9	1	5	42.1	71.3

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(UNI)	(BI)	(UNI)	(BI)	VR (V)	Min (V)	Max (V)	It (mA)	IR (uA)	Vc (V)	Ipp (A)
3.0SMCJ28	3.0SMCJ28C	HFF	IFF	28.0	31.1	38.0	1	5	50.0	60.0
3.0SMCJ28A	3.0SMCJ28CA	HFG	IFG	28.0	31.1	34.4	1	5	45.4	66.1
3.0SMCJ28A6*	N/A	HFG6	---	28.0	31.1	34.4	1	5	45.4	66.1
3.0SMCJ30	3.0SMCJ30C	HFH	IFH	30.0	33.3	40.7	1	5	53.5	56.1
3.0SMCJ30A	3.0SMCJ30CA	HFK	IFK	30.0	33.3	36.8	1	5	48.4	62.0
3.0SMCJ33	3.0SMCJ33C	HFL	IFL	33.0	36.7	44.8	1	5	59.0	50.8
3.0SMCJ33A	3.0SMCJ33CA	HFM	IFM	33.0	36.7	40.6	1	5	53.3	56.3
3.0SMCJ36	3.0SMCJ36C	HFN	IFN	36.0	40.0	48.9	1	5	64.3	46.7
3.0SMCJ36A	3.0SMCJ36CA	HFP	IFP	36.0	40.0	44.2	1	5	58.1	51.6
3.0SMCJ40	3.0SMCJ40C	HFQ	IFQ	40.0	44.4	54.3	1	5	71.4	42.0
3.0SMCJ40A	3.0SMCJ40CA	HFR	IFR	40.0	44.4	49.1	1	5	64.5	46.5
3.0SMCJ43	3.0SMCJ43C	HFS	IFS	43.0	47.8	58.4	1	5	76.7	39.1
3.0SMCJ43A	3.0SMCJ43CA	HFT	IFT	43.0	47.8	52.8	1	5	69.4	43.2
3.0SMCJ45	3.0SMCJ45C	HFU	IFU	45.0	50.0	61.1	1	5	80.3	37.4
3.0SMCJ45A	3.0SMCJ45CA	HFV	IFV	45.0	50.0	55.3	1	5	72.7	41.3
3.0SMCJ48	3.0SMCJ48C	HFW	IFW	48.0	53.3	65.1	1	5	85.5	35.1
3.0SMCJ48A	3.0SMCJ48CA	HFX	IFX	48.0	53.3	58.9	1	5	77.4	38.8
3.0SMCJ51	3.0SMCJ51C	HFY	IFY	51.0	56.7	69.3	1	5	91.1	32.9
3.0SMCJ51A	3.0SMCJ51CA	HFZ	IFZ	51.0	56.7	62.7	1	5	82.4	36.4
3.0SMCJ54	3.0SMCJ54C	HGD	IGD	54.0	60.0	73.3	1	5	96.3	31.2
3.0SMCJ54A	3.0SMCJ54CA	HGE	IGE	54.0	60.0	66.3	1	5	87.1	34.4
3.0SMCJ58	N/A	HGF	---	58.0	64.4	78.7	1	5	103.0	29.1
3.0SMCJ58A	N/A	HGG	---	58.0	64.4	71.2	1	5	93.6	32.1
3.0SMCJ60	N/A	HGH	---	60.0	66.7	81.5	1	5	107.0	28.0
3.0SMCJ60A	N/A	HGK	---	60.0	66.7	73.7	1	5	96.8	31.0
3.0SMCJ64	N/A	HGL	---	64.0	71.1	86.9	1	5	114.0	26.3
3.0SMCJ64A	N/A	HGM	---	64.0	71.1	78.6	1	5	103.0	29.1
3.0SMCJ70	N/A	HGN	---	70.0	77.8	95.1	1	5	125.0	24.0
3.0SMCJ70A	N/A	HGP	---	70.0	77.8	86.0	1	5	113.0	26.5
3.0SMCJ75	N/A	HGQ	---	75.0	83.3	101.8	1	5	134.0	22.4
3.0SMCJ75A	N/A	HGR	---	75.0	83.3	92.1	1	5	121.0	24.8
3.0SMCJ78	N/A	HGS	---	78.0	86.7	105.9	1	5	139.0	21.6
3.0SMCJ78A	N/A	HGT	---	78.0	86.7	95.8	1	5	126.0	23.8
3.0SMCJ85	N/A	HGU	---	85.0	94.4	115.4	1	5	151.0	19.9
3.0SMCJ85A	N/A	HGV	---	85.0	94.4	104.3	1	5	137.0	21.9
3.0SMCJ90	N/A	HGW	---	90.0	100.0	122.2	1	5	160.0	18.8
3.0SMCJ90A	N/A	HGX	---	90.0	100.0	110.5	1	5	146.0	20.5
3.0SMCJ100	N/A	HGY	---	100.0	111.0	135.6	1	5	179.0	16.8
3.0SMCJ100A	N/A	HGZ	---	100.0	111.0	122.7	1	5	162.0	18.5
3.0SMCJ110	N/A	HHD	---	110.0	122.0	149.1	1	5	196.0	15.3
3.0SMCJ110A	N/A	HHE	---	110.0	122.0	134.8	1	5	177.0	16.9
3.0SMCJ120	N/A	HHF	---	120.0	133.0	162.5	1	5	214.0	14.0
3.0SMCJ120A	N/A	HHG	---	120.0	133.0	147.0	1	5	193.0	15.5

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(UNI)	(BI)	(UNI)	(BI)	VR (V)	Min (V)	Max (V)	It (mA)	IR (uA)	Vc (V)	Ipp (A)
3.0SMCJ130	N/A	HHH	---	130.0	144.0	176.0	1	5	231.0	13.0
3.0SMCJ130A	N/A	HHK	---	130.0	144.0	159.2	1	5	209.0	14.4
3.0SMCJ150	N/A	HHL	---	150.0	167.0	204.1	1	5	268.0	11.2
3.0SMCJ150A	N/A	HHM	---	150.0	167.0	184.6	1	5	243.0	12.3
3.0SMCJ160	N/A	HHN	---	160.0	178.0	217.5	1	5	287.0	10.5
3.0SMCJ160A	N/A	HHP	---	160.0	178.0	196.7	1	5	259.0	11.6
3.0SMCJ170	N/A	HHQ	---	170.0	189.0	231.0	1	5	304.0	9.9
3.0SMCJ170A	N/A	HHR	---	170.0	189.0	208.9	1	5	275.0	10.9

NOTES:

- 1) 'Suffix 'C' denotes bidirectional device. Suffix 'A' denotes 5% tolerance device, no suffix denotes 10% tolerance device .
- 2) For bidirectional devices having VR of 10 volts and under, the IR limit is doubled .
- 3) Mark "—" denote that comply IEC 61000-4-5 Severity levels, 6KV. For data lines requiring a 42Ω source impedance, the short-circuit current waveform is defined as 8/20us.

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