LITE-ON SEMICONDUCTOR

3.0SMCJ SERIES

SURFACE MOUNT
UNIDIRECTIONAL AND BIDIRECTIONAL
TRANSIENT VOLTAGE SUPPRESSORS

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

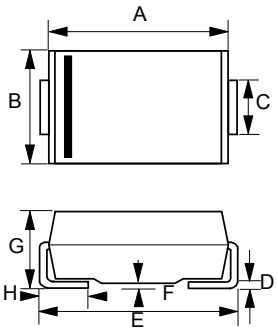
FEATURES

- 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,form 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℃ 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℃ , T_P = 1ms (Note 1)	P_{PK}	3000	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave @T_J=25 ℃ (Note 2)	I_{FSM}	300	AMPS.
Steady State Power Dissipation at TL =120℃ lead lenghts 0.375" (9.5mm) , see fig. 6	$P_{M(AV)}$	2.0	WATTS
Operating Temperature Range	T_J	-55 to +175	℃
Storage Temperature Range	T_{STG}	-55 to +175	℃

NOTES : 1. Non-repetitive current pulse, per Fig. 3 and derated above T_J= 25℃ per Fig.1.
2. Only for unidirectional units.

FIG.1 - PULSE DERATING CURVE

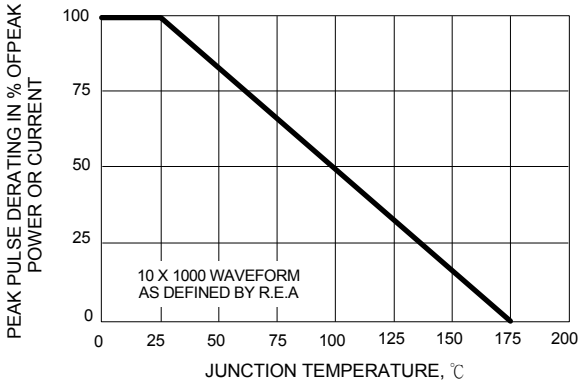


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

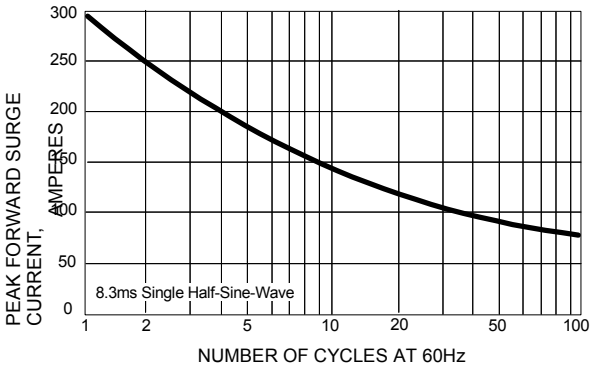


FIG.3 - PULSE WAVEFORM

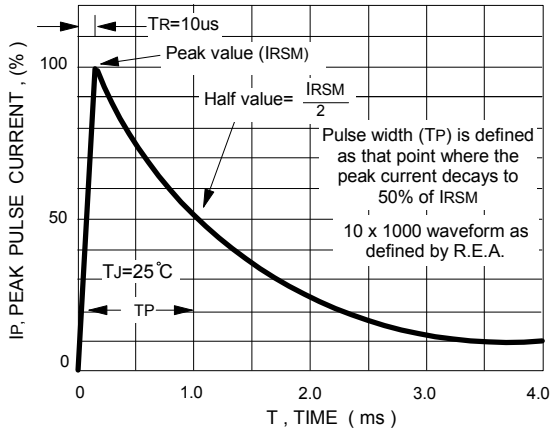


FIG.4 - TYPICAL JUNCTION CAPACITANCE

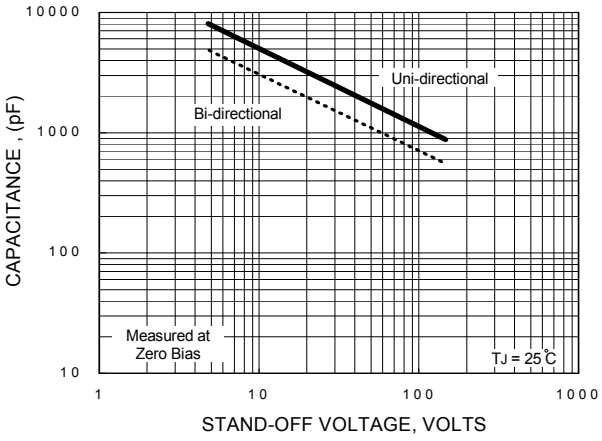


FIG.5 - PULSE RATING CURVE

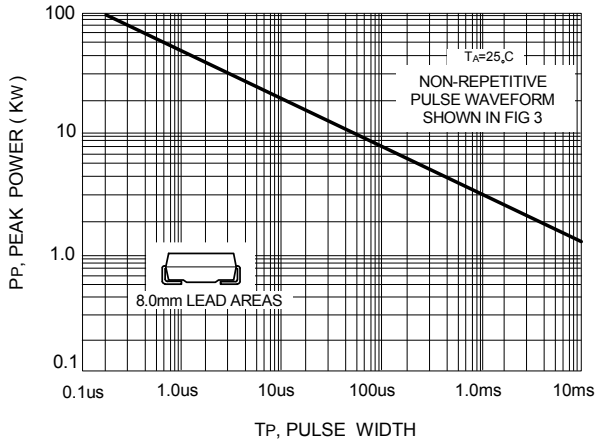
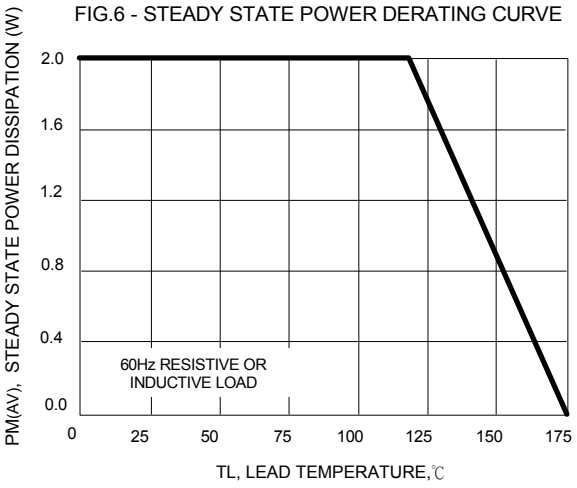


FIG.6 - STEADY STATE POWER DERATING CURVE



LITE-ON
SEMICONDUCTOR

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
3.0SMCJ6.0	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
3.0SMCJ22	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		HEZ6	---	24.5	---	29.5	1	5.0	50.0	110.0
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

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)
3.0SMCJ28	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
3.0SMCJ30	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	3.0SMCJ58C	HGF	IGF	58.0	64.4	78.7	1	5	103.0	29.1
3.0SMCJ58A	3.0SMCJ58CA	HGG	IGG	58.0	64.4	71.2	1	5	93.6	32.1
3.0SMCJ60	3.0SMCJ60C	HGH	IGH	60.0	66.7	81.5	1	5	107.0	28.0
3.0SMCJ60A	3.0SMCJ60CA	HGK	IGK	60.0	66.7	73.7	1	5	96.8	31.0
3.0SMCJ64	3.0SMCJ64C	HGL	IGL	64.0	71.1	86.9	1	5	114.0	26.3
3.0SMCJ64A	3.0SMCJ64CA	HGM	IGM	64.0	71.1	78.6	1	5	103.0	29.1
3.0SMCJ70	3.0SMCJ70C	HGN	IGN	70.0	77.8	95.1	1	5	125.0	24.0
3.0SMCJ70A	3.0SMCJ70CA	HGP	IGP	70.0	77.8	86.0	1	5	113.0	26.5
3.0SMCJ75	3.0SMCJ75C	HGQ	IGQ	75.0	83.3	101.8	1	5	134.0	22.4
3.0SMCJ75A	3.0SMCJ75CA	HGR	IGR	75.0	83.3	92.1	1	5	121.0	24.8
3.0SMCJ78	3.0SMCJ78C	HGS	IGS	78.0	86.7	105.9	1	5	139.0	21.6
3.0SMCJ78A	3.0SMCJ78CA	HGT	IGT	78.0	86.7	95.8	1	5	126.0	23.8
3.0SMCJ85	3.0SMCJ85C	HGU	IGU	85.0	94.4	115.4	1	5	151.0	19.9
3.0SMCJ85A	3.0SMCJ85CA	HGV	IGV	85.0	94.4	104.3	1	5	137.0	21.9
3.0SMCJ90	3.0SMCJ90C	HGW	IGW	90.0	100.0	122.2	1	5	160.0	18.8
3.0SMCJ90A	3.0SMCJ90CA	HGX	IGX	90.0	100.0	110.5	1	5	146.0	20.5
3.0SMCJ100	3.0SMCJ100C	HGY	IGY	100.0	111.0	135.6	1	5	179.0	16.8
3.0SMCJ100A	3.0SMCJ100CA	HGZ	IGZ	100.0	111.0	122.7	1	5	162.0	18.5
3.0SMCJ110	3.0SMCJ110C	HHD	IHD	110.0	122.0	149.1	1	5	196.0	15.3
3.0SMCJ110A	3.0SMCJ110CA	HHE	IHE	110.0	122.0	134.8	1	5	177.0	16.9
3.0SMCJ120	3.0SMCJ120C	HHF	IHF	120.0	133.0	162.5	1	5	214.0	14.0
3.0SMCJ120A	3.0SMCJ120CA	HHG	IHG	120.0	133.0	147.0	1	5	193.0	15.5
3.0SMCJ130	3.0SMCJ130C	HHH	IHH	130.0	144.0	176.0	1	5	231.0	13.0
3.0SMCJ130A	3.0SMCJ130CA	HHK	IHK	130.0	144.0	159.2	1	5	209.0	14.4

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(UNI)	(BI)	(UNI)	(BI)	VR (V)	Min (V)	Max (V)	It (mA)	IR (uA)	Vc (V)	Ipp (A)
3.0SMCJ150	3.0SMCJ150C	HHL	IHL	150.0	167.0	204.1	1	5	268.0	11.2
3.0SMCJ150A	3.0SMCJ150CA	HHM	IHM	150.0	167.0	184.6	1	5	243.0	12.3
3.0SMCJ160	3.0SMCJ160C	HHN	IHN	160.0	178.0	217.5	1	5	287.0	10.5
3.0SMCJ160A	3.0SMCJ160CA	HHP	IHP	160.0	178.0	196.7	1	5	259.0	11.6
3.0SMCJ170	3.0SMCJ170C	HHQ	IHQ	170.0	189.0	231.0	1	5	304.0	9.9
3.0SMCJ170A	3.0SMCJ170CA	HHR	IHR	170.0	189.0	208.9	1	5	275.0	10.9

NOTES:

Suffix 'C' denotes bidirectional device. Suffix 'A' denotes 5% tolerance device, no suffix denotes 10% tolerance device .

For bidirectional devices having VR of 10 volts and under, the IR limit is doubled .

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