LITE-ON SEMICONDUCTOR

SMCJ SERIES

SURFACE MOUNT
UNIDIRECTIONAL AND BIDIRECTIONAL
TRANSIENT VOLTAGE SUPPRESSORS

STAND-OFF VOLTAGE - **5.0** to **220** Volts
POWER DISSIPATION - **1500** WATTS

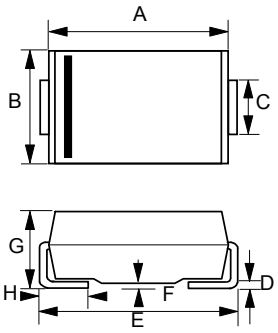
FEATURES

- 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		

Datasheet.Directory

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
PEAK POWER DISSIPATION AT T_A = 25°C, T_P = 1ms (Note 1,2)	P_{PK}	1500	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave @ T_J =25°C (Note 3)	I_{FSM}	200	AMPS.
Steady State Power Dissipation at T_L =120℃	$P_{M(AV)}$	2.0	WATTS
Maximum Instantaneous forward voltage at 100A for unidirectional devices only (Note 4)	V_F	SEE NOTE 4	Volts
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_A= 25℃ per fig.1.
2. Mounted on copper pad area of 8.0 x 8.0mm to each terminal.
3. 8.3ms single half-sine wave duty cycle= 4 pulses maximum per minute (unidirectional units only).
4. V_F= 3.5V on SMCJ5.0A thru SMCJ90A devices and V_F= 5.0V on SMCJ100A thru SMCJ220A devices.

REV. 14, May-2013, KSIC02

FIG.1 - PULSE DERATING CURVE

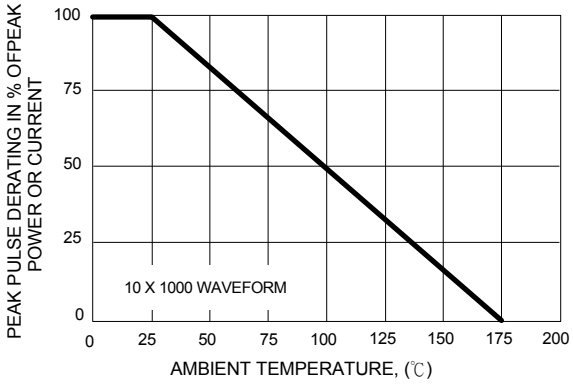


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

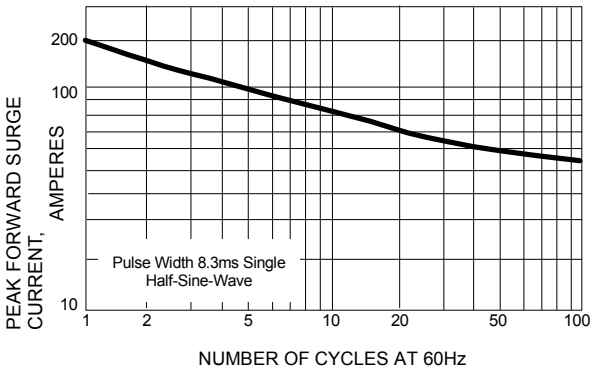


FIG.3 - PULSE WAVEFORM

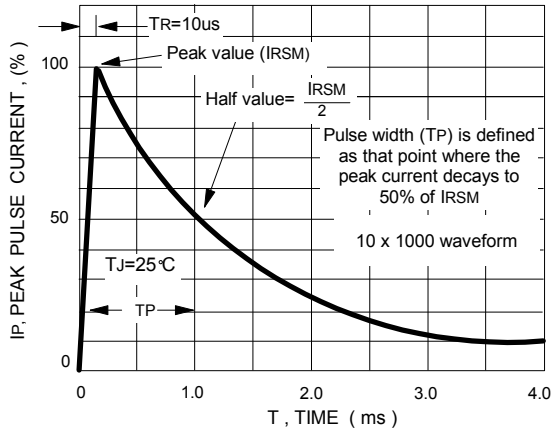


FIG.4 - TYPICAL JUNCTION CAPACITANCE

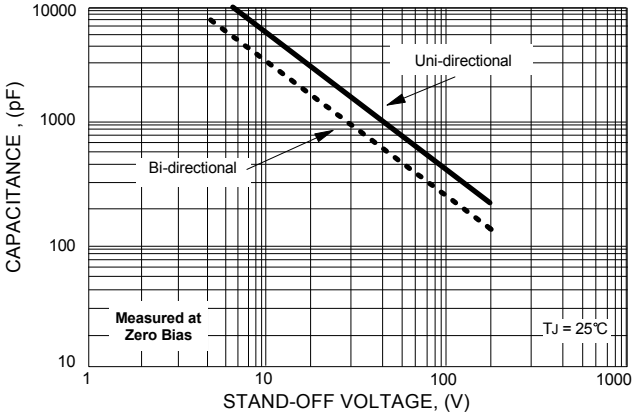


FIG.5 - PULSE RATING CURVE

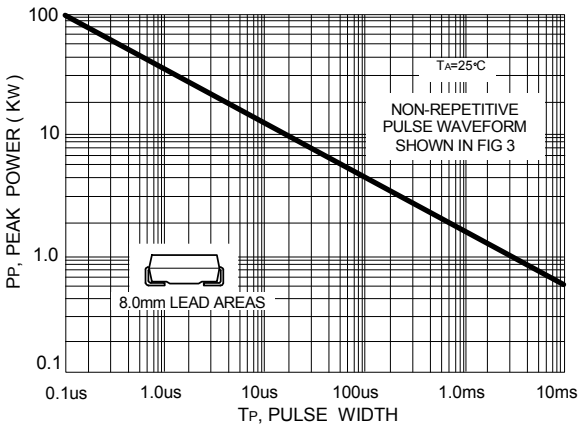
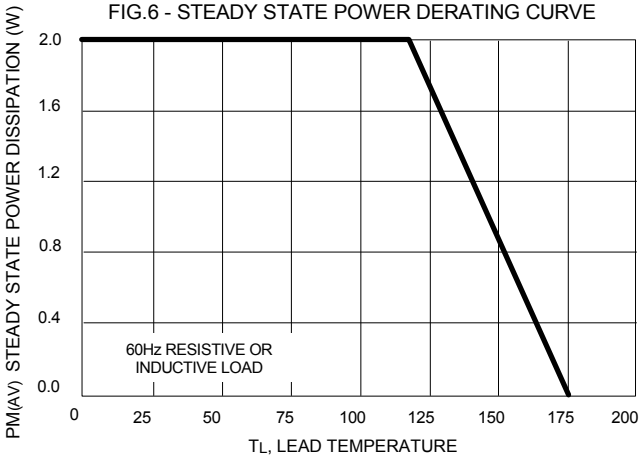


FIG.6 - STEADY STATE POWER DERATING CURVE



LITE-ON
SEMICONDUCTOR

Device Uni-directional	Device Bi-directional	Device Marking code		Working PeakReverse Voltage	Breakdown voltage VBR Volts			Maximum Reverse Voltage at I_{RSM} (Clamping Voltage)	Maximum Reverse Surge Current	Maximum Reverse Leakage at V_{RWM}
		(UNI)	(BI)	V_{RWM}(Volts)	Min.	Max.	@IT(mA)	V_{RSM}(Volts)	I_{RSM}(Amps)	IR (uA)
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	5.0	6.40	7.07	10	9.2	163.0	1000
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6.0	6.67	7.37	10	10.3	145.6	1000
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	7.98	10	11.2	133.9	500
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7.0	7.78	8.60	10	12.0	125.0	200
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.21	1.0	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.0	8.89	9.83	1.0	13.6	110.3	50.0
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.4	1.0	14.4	104.2	20.0
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9.0	10.0	11.1	1.0	15.4	97.4	10.0
SMCJ10A	SMCJ10CA	GDX	BDX	10	11.1	12.3	1.0	17.0	88.2	5.0
SMCJ11A	SMCJ11CA	GDZ	BDZ	11	12.2	13.5	1.0	18.2	82.4	5.0
SMCJ12A	SMCJ12CA	GEE	BEE	12	13.3	14.7	1.0	19.9	75.3	5.0
SMCJ13A	SMCJ13CA	GEG	BEG	13	14.4	15.9	1.0	21.5	69.7	5.0
SMCJ14A	SMCJ14CA	GEK	BEK	14	15.6	17.2	1.0	23.2	64.7	5.0
SMCJ15A	SMCJ15CA	GEM	BEM	15	16.7	18.5	1.0	24.4	61.5	5.0
SMCJ16A	SMCJ16CA	GEP	BEP	16	17.8	19.7	1.0	26.0	57.7	5.0
SMCJ17A	SMCJ17CA	GER	BER	17	18.9	20.9	1.0	27.6	53.3	5.0
SMCJ18A	SMCJ18CA	GET	BET	18	20.0	22.1	1.0	29.2	51.4	5.0
SMCJ20A	SMCJ20CA	GEV	BEV	20	22.2	24.5	1.0	32.4	46.3	5.0
SMCJ20A4		GEV4		20	22.2	24.5	1.0	32.4	63.0	5.0
SMCJ22A	SMCJ22CA	GEX	BEX	22	24.4	27.0	1.0	35.5	42.2	5.0
SMCJ24A	SMCJ24CA	GEZ	BEZ	24	26.7	29.5	1.0	38.9	38.6	5.0
SMCJ24A4		GEZ4		24	26.7	29.5	1.0	38.9	60.0	5.0
SMCJ26A	SMCJ26CA	GFE	BFE	26	28.9	31.9	1.0	42.1	35.6	5.0
SMCJ28A	SMCJ28CA	GFG	BFG	28	31.1	34.4	1.0	45.4	33.0	5.0
SMCJ28A4		GFG4		28	31.1	34.4	1.0	45.4	49.0	5.0
SMCJ30A	SMCJ30CA	GFK	BFK	30	33.3	36.8	1.0	48.4	31.0	5.0
SMCJ33A	SMCJ33CA	GFM	BFM	33	36.7	40.6	1.0	53.3	28.1	5.0
SMCJ36A	SMCJ36CA	GFP	BFP	36	40.0	44.2	1.0	58.1	25.8	5.0
SMCJ36A4		GFP4		36	40.0	44.2	1.0	58.1	28.0	5.0
SMCJ40A	SMCJ40CA	GFR	BFR	40	44.4	49.1	1.0	64.5	23.3	5.0
SMCJ43A	SMCJ43CA	GFT	BFT	43	47.8	52.8	1.0	69.4	21.6	5.0
SMCJ45A	SMCJ45CA	GFV	BFV	45	50.0	55.3	1.0	72.7	20.6	5.0
SMCJ48A	SMCJ48CA	GFX	BFX	48	53.3	58.9	1.0	77.4	19.4	5.0
SMCJ51A	SMCJ51CA	GFZ	BFZ	51	56.7	62.7	1.0	82.4	18.2	5.0
SMCJ54A	SMCJ54CA	GGE	BGE	54	60.0	66.3	1.0	87.1	17.2	5.0
SMCJ58A	SMCJ58CA	GGG	BGG	58	64.4	71.2	1.0	93.6	16.0	5.0
SMCJ60A	SMCJ60CA	GGK	BGK	60	66.7	73.7	1.0	96.8	15.5	5.0
SMCJ64A	SMCJ64CA	GGM	BGM	64	71.1	78.6	1.0	103	14.6	5.0
SMCJ70A	SMCJ70CA	GGP	BGP	70	77.8	86.0	1.0	113	13.3	5.0
SMCJ75A	SMCJ75CA	GGR	BGR	75	83.3	92.1	1.0	121	12.4	5.0
SMCJ78A	SMCJ78CA	GGT	BGT	78	86.7	95.8	1.0	126	11.4	5.0
SMCJ85A	SMCJ85CA	GGV	BGV	85	94.4	104	1.0	137	10.4	5.0
SMCJ90A	SMCJ90CA	GGX	BGX	90	100	111	1.0	146	10.3	5.0
SMCJ100A	SMCJ100CA	GGZ	BGZ	100	111	123	1.0	162	9.3	5.0
SMCJ110A	SMCJ110CA	GHE	BHE	110	122	135	1.0	177	8.4	5.0
SMCJ120A	SMCJ120CA	GHG	BHG	120	133	147	1.0	193	7.9	5.0
SMCJ130A	SMCJ130CA	GHK	BHK	130	144	159	1.0	209	7.2	5.0
SMCJ150A	SMCJ150CA	GHM	BHM	150	167	185	1.0	243	6.2	5.0
SMCJ160A	SMCJ160CA	GHP	BHP	160	178	197	1.0	259	5.8	5.0
SMCJ170A	SMCJ170CA	GHR	BHR	170	189	209	1.0	275	5.5	5.0
SMCJ188A	SMCJ188CA	GHT	BHT	188	209	222	1.0	292	5.1	5.0
SMCJ200A	SMCJ200CA	GHV	BHV	200	224	247	1.0	324	4.6	5.0
SMCJ220A	SMCJ220CA	GHX	BHX	220	246	272	1.0	356	4.2	5.0

NOTE :

1) Suffix 'A ' denotes 5% tolerance device

2) Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices.

3) For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .

4) For Uni-directional devices VF max=3.5v at IF=100 A 300us square wave pulse.

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