LITE-ON SEMICONDUCTOR

SMC SERIES

SURFACE MOUNT
UNIDIRECTIONAL AND BIDIRECTIONAL
TRANSIENT VOLTAGE SUPPRESSORS

STAND-OFF VOLTAGE - **6.8** to **200** Volts
POWER DISSIPATION - **1500** WATTS

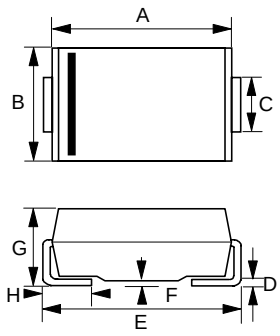
FEATURES

- Rating to 200V VBR
- 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 1.0ps 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	2.62
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_A = 25℃, T_P = 1ms (Note 1,2)	P_{PK}	Minimum 1500	WATTS
Peak Forward Surge Current 8.3ms single half sine-wave super imposed on rated load (Note 3) (JEDEC METHOD)	I_{FSM}	200	AMPS.
Steady State Power Dissipation at T_L =75℃	$P_{M(AV)}$	5.0	WATTS
Maximum Instantaneous forward voltage at 100A for unidirectional devices only (Note 3)	V_F	SEE NOTE 4	Volts
Operating Temperature Range	T_J	-55 to +150	℃
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. Thermal Resistance junction to Lead
3. 8.3ms single half-sine wave duty cycle= 4 pulses maximum per minute (unidirectional units only).
4. V_F= 3.5V on SMC6.8 thru SMC90A devices and V_F= 5.0V on SMC100 thru SMC200A devices.

REV. 2, 01-Dec-2000, KSIC01

FIG.1 - PULSE DERATING CURVE

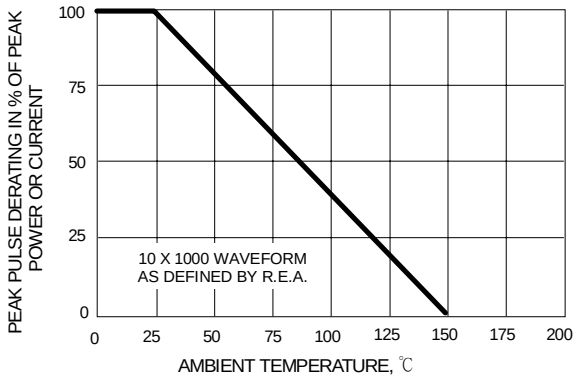


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

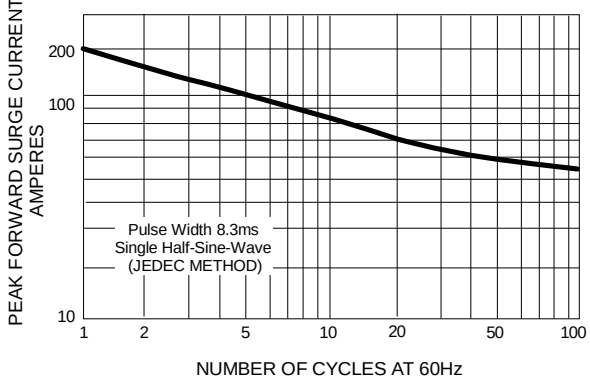


FIG.3 - PULSE WAVEFORM

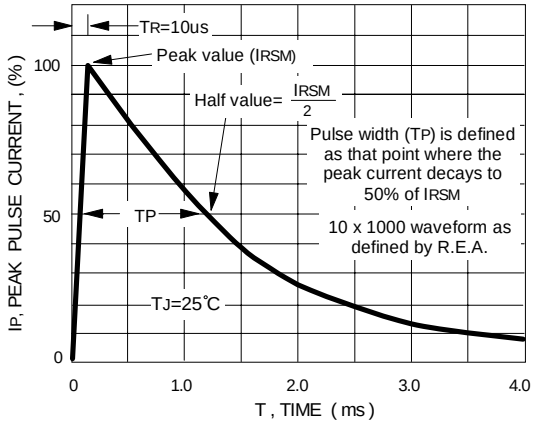


FIG.4 - TYPICAL JUNCTION CAPACITANCE

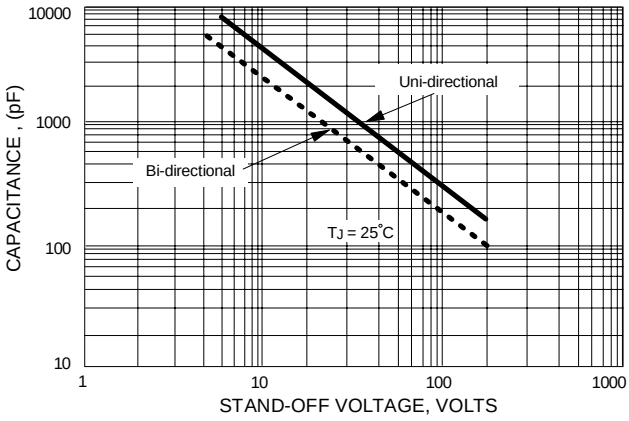


FIG.5 - PULSE RATING CURVE

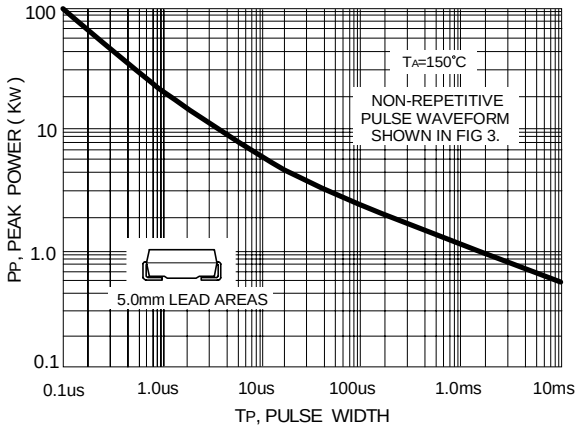
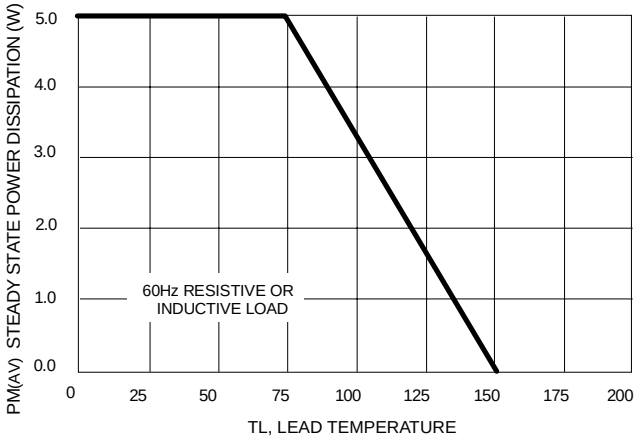


FIG.6 - STEADY STATE POWER DERATING CURVE



LITE-ON SEMICONDUCTOR

Device Uni-directional	Device Bi-directional	Device Marking code		Breakdowm voltage VBR Volts			Working PeakReverse Voltage	Maximum Reverse Leakage at V_{RWM}	Maximum Reverse Surge Current	Maximum Reverse Voltage at I_{RSM} (Clamping Voltage)
		(UNI)	(BI)	Min.	Max.	@IT(mA)	V_{RWM}(Volts)	IR (uA)	I_{RSM}(Amps)	V_{RSM}(Volts)
SMC6.8	SMC6.8C	DDK	DDM	6.12	7.48	10.0	5.50	1000	139	10.8
SMC6.8A	SMC6.8CA	DEK	DEM	6.45	7.14	10.0	5.80	1000	143	10.5
SMC7.5	SMC7.5C	DFK	DFM	6.75	8.25	10.0	6.05	500	128	11.7
SMC7.5A	SMC7.5CA	DGK	DGM	7.13	7.88	10.0	6.40	500	133	11.3
SMC8.2	SMC8.2C	DHK	DHM	7.38	9.02	10.0	6.63	200	120	12.5
SMC8.2A	SMC8.2CA	DKK	DKM	7.79	8.61	10.0	7.02	200	124	12.1
SMC9.1	SMC9.1C	DLK	DLM	8.19	10.0	10.0	7.37	50.0	109	13.8
SMC9.1A	SMC9.1CA	DMK	DMM	8.65	9.55	10.0	7.78	50.0	112	13.4
SMC10	SMC10C	DNK	DNM	9.00	11.0	1.0	8.10	20.0	100	15.0
SMC10A	SMC10CA	DPK	DPM	9.50	10.5	1.0	8.55	20.0	103	14.5
SMC11	SMC11C	DQK	DQM	9.90	12.1	1.0	8.92	5.0	93	16.2
SMC11A	SMC11CA	DRK	DRM	10.5	11.6	1.0	9.40	5.0	96	15.6
SMC12	SMC12C	DSK	DSM	10.8	13.2	1.0	9.72	5.0	87	17.3
SMC12A	SMC12CA	DTK	DTM	11.4	12.6	1.0	10.2	5.0	90	16.7
SMC13	SMC13C	DUK	DUM	11.7	14.3	1.0	10.5	5.0	79	19.0
SMC13A	SMC13CA	DVK	DVM	12.4	13.7	1.0	11.1	5.0	82	18.2
SMC15	SMC15C	DWK	DWM	13.5	16.3	1.0	12.1	5.0	68	22.0
SMC15A	SMC15CA	DXK	DXM	14.3	15.8	1.0	12.8	5.0	71	21.2
SMC16	SMC16C	DYK	DYM	14.4	17.6	1.0	12.9	5.0	64	23.5
SMC16A	SMC16CA	DZK	DZM	15.2	16.8	1.0	13.6	5.0	67	22.5
SMC18	SMC18C	EDK	EDM	16.2	19.8	1.0	14.5	5.0	56.5	26.5
SMC18A	SMC18CA	EEK	EEM	17.1	18.9	1.0	15.3	5.0	59.5	25.5
SMC20	SMC20C	EFK	EFM	18.0	22.0	1.0	16.2	5.0	51.5	29.1
SMC20A	SMC20CA	EGK	EGM	19.0	21.0	1.0	17.1	5.0	54	27.7
SMC22	SMC22C	EHK	EHM	19.8	24.2	1.0	17.8	5.0	47	31.9
SMC22A	SMC22CA	EKK	EKM	20.9	23.1	1.0	18.8	5.0	49	30.6
SMC24	SMC24C	ELK	ELM	21.6	26.4	1.0	19.4	5.0	43	34.7
SMC24A	SMC24CA	EMK	EMM	22.8	25.2	1.0	20.5	5.0	45	33.2
SMC27	SMC27C	ENK	ENM	24.3	29.7	1.0	21.8	5.0	38.5	39.1
SMC27A	SMC27CA	EPK	EPM	25.7	28.4	1.0	23.1	5.0	40	37.5
SMC30	SMC30C	EQK	EQM	27.0	33.0	1.0	24.3	5.0	34.5	43.5
SMC30A	SMC30CA	ERK	ERM	28.5	31.5	1.0	25.6	5.0	36	41.4
SMC33	SMC33C	ESK	ESM	29.7	36.3	1.0	26.8	5.0	31.5	47.7
SMC33A	SMC33CA	ETK	ETM	31.4	34.7	1.0	28.2	5.0	33	45.7
SMC36	SMC36C	EUK	EUM	32.4	39.6	1.0	29.1	5.0	29	52.0
SMC36A	SMC36CA	EVK	EVM	34.2	37.8	1.0	30.8	5.0	30	49.9
SMC39	SMC39C	EUK	EUM	35.1	42.9	1.0	31.6	5.0	26.5	56.4
SMC39A	SMC39CA	EXK	EXM	37.1	41.0	1.0	33.3	5.0	28	53.9
SMC43	SMC43C	EYK	EYM	38.7	47.3	1.0	34.8	5.0	24	61.9
SMC43A	SMC43CA	EZK	EZM	40.9	45.2	1.0	36.8	5.0	25.3	59.3

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		(UNI)	(BI)	Min.	Max.	@IT(mA)	V_{RWM}(Volts)	IR (uA)	I_{RSM}(Amps)	V_{RSM}(Volts)
SMC47	SMC47C	FDK	FDM	42.3	51.7	1.0	38.1	5.0	22.12	67.8
SMC47A	SMC47CA	FEK	FEM	44.7	49.4	1.0	40.2	5.0	23.15	64.8
SMC51	SMC45C	FFK	FFM	45.9	56.1	1.0	41.3	5.0	20.41	73.5
SMC51A	SMC45CA	FGK	FGM	48.5	53.6	1.0	43.6	5.0	21.40	70.1
SMC56	SMC56C	FHK	FHM	50.4	61.6	1.0	45.4	5.0	18.63	80.5
SMC56A	SMC56CA	FKK	FKM	53.2	58.8	1.0	47.8	5.0	19.48	77.0
SMC62	SMC62C	FLK	FLM	55.8	68.2	1.0	50.2	5.0	16.85	89.0
SMC62A	SMC62CA	FMK	FMM	58.9	65.1	1.0	53.0	5.0	17.65	85.0
SMC68	SMC68C	FNK	FNM	61.2	74.8	1.0	55.1	5.0	15.31	98.0
SMC68A	SMC68CA	FPK	FPM	64.6	71.4	1.0	58.1	5.0	16.30	92.0
SMC75	SMC75C	FQK	FQM	67.5	82.5	1.0	60.7	5.0	13.89	108
SMC75A	SMC75CA	FRK	FRM	71.3	78.8	1.0	64.1	5.0	14.56	103
SMC82	SMC82C	FSK	FSM	73.8	90.2	1.0	66.4	5.0	12.71	118
SMC82A	SMC82CA	FTK	FTM	77.8	86.0	1.0	70.1	5.0	13.27	113
SMC91	SMC91C	FUK	FUM	81.9	100	1.0	73.7	5.0	11.45	131
SMC91A	SMC91CA	FVK	FVM	86.5	95.5	1.0	77.8	5.0	12.00	125
SMC100	SMC100C	FWK	FWM	90.0	110	1.0	81.0	5.0	10.42	144
SMC100A	SMC100CA	FXK	FXM	95.0	105	1.0	85.5	5.0	10.95	137
SMC110	SMC110C	FYK	FYM	99.0	121	1.0	89.2	5.0	9.49	158
SMC110A	SMC110CA	FZK	FZM	105	116	1.0	94.0	5.0	9.87	152
SMC120	SMC120C	GDK	GDM	108	132	1.0	97.2	5.0	8.67	173
SMC120A	SMC120CA	GEK	GEM	114	126	1.0	102	5.0	9.09	165
SMC130	SMC130C	GFK	GFM	117	143	1.0	105	5.0	8.02	187
SMC130A	SMC130CA	GGK	GGM	124	137	1.0	111	5.0	8.38	179
SMC150	SMC150C	GHK	GHM	135	165	1.0	121	5.0	6.98	215
SMC150A	SMC150CA	GKK	GKM	143	158	1.0	128	5.0	7.25	207
SMC160	SMC160C	GLK	GLM	144	176	1.0	130	5.0	6.52	230
SMC160A	SMC160CA	GMK	GMM	152	168	1.0	136	5.0	6.85	219
SMC170	SMC170C	GNK	GNM	153	187	1.0	138	5.0	6.15	244
SMC170A	SMC170CA	GPK	GPM	162	179	1.0	145	5.0	6.41	234
SMC180	SMC180C	GQK	GQM	162	198	1.0	146	5.0	5.81	258
SMC180A	SMC180CA	GRK	GRM	171	189	1.0	154	5.0	6.10	246
SMC200	SMC200C	GSK	GSM	180	220	1.0	162	5.0	5.23	287
SMC200A	SMC200CA	GTK	GTM	190	210	1.0	171	5.0	5.47	274

NOTE :

1) Suffix 'A ' denotes 5% tolerance device,no suffix denotes 10 % 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=35 A ,0.5 sine wave of 8.3 msec .pulse width.