LITE-ON SEMICONDUCTOR

SMAJ SERIES

SURFACE MOUNT
UNIDIRECTIONAL AND BIDIRECTIONAL
TRANSIENT VOLTAGE SUPPRESSORS

STAND-OFF VOLTAGE - **4.0** to **200** Volts
POWER DISSIPATION - **400** WATTS

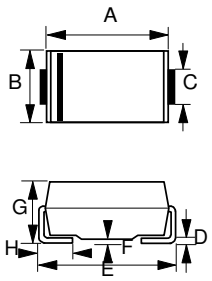
FEATURES

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- 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
- RoHS compliant
- Qualified to AEC-Q101 Rev_C
- IEC6100-4-2, >±30KV(air); >±30KV(Contact).(Note.4)

MECHANICAL DATA

- Case : Molded plastic
- Case Material: Molding compound, UL Flammability classification 94V-0, (No Br. Sb. Cl.) "Halogen-free".
- Polarity : by cathode band denotes uni-directional device, none cathode band denotes bi-directional device
- Weight : 0.002 ounces, 0.064 gram

SMA



SMA		
DIM.	MIN.	MAX.
A	4.06	4.57
B	2.29	2.92
C	1.27	1.63
D	0.15	0.31
E	4.83	5.59
F	0.05	0.20
G	1.96	2.40
H	0.76	1.52
All Dimensions in millimeter		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
Peak Power Dissipation at T_A = 25 ℃, T_P = 1ms (Note 1)	P_{PK}	400	W
Peak Forward Surge Current 8.3ms single half sine-wave @ TJ = 25 ℃ (Note 2)	I_{FSM}	40	A
Steady State Power Dissipation at T_L =120 ℃	$P_{M(AV)}$	1.0	W
Maximum Instantaneous forward voltage at 16A (Note 2, 3)	V_F	3.0	V
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_A= 25 ℃ per fig.1.
2. For unidirectional units only.
3. VF max=3V at IF=16 A 300us square wave pulse.
4. SMAJ4.0 thru SMAJ120 devices that comply IEC 61000-4-2 levels.

REV. 20, Nov-2017, KSIA02

FIG.1- PULSE DERATING CURVE

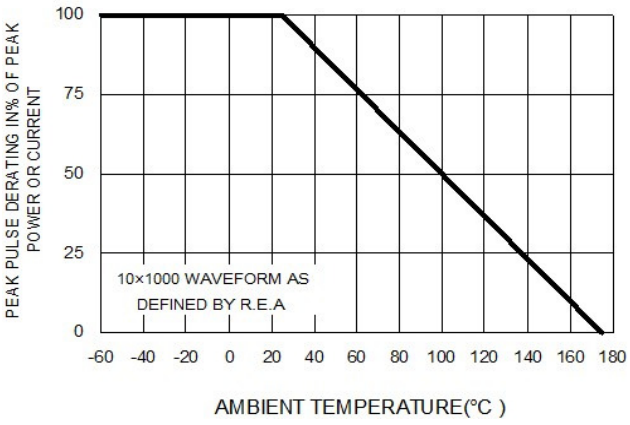


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

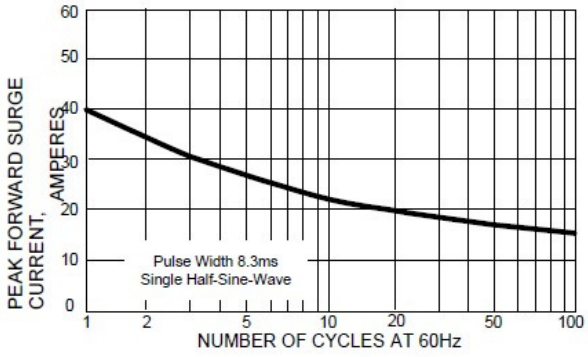


FIG.3 - PULSE WAVEFORM

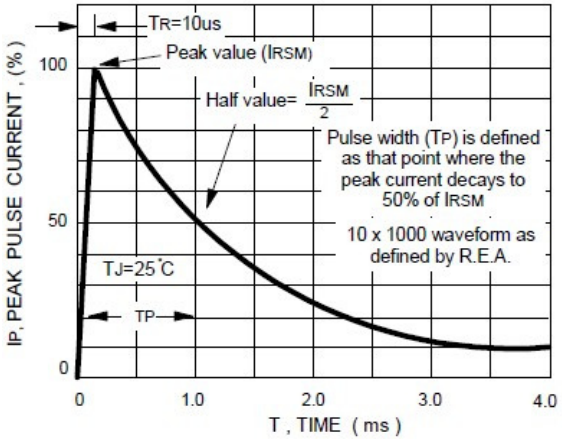


FIG.4 - TYPICAL JUNCTION CAPACITANCE

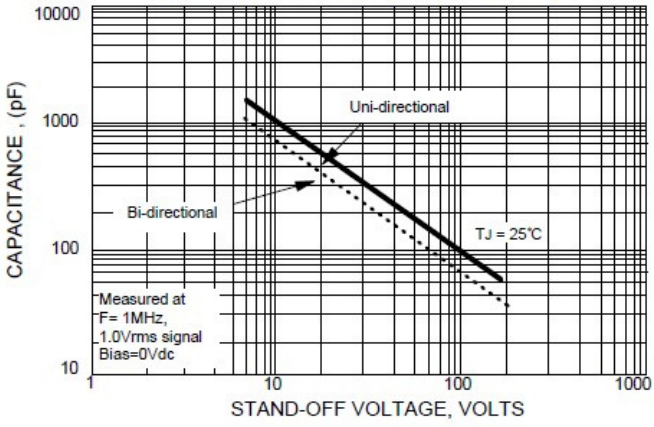


FIG.5 - PULSE RATING CURVE

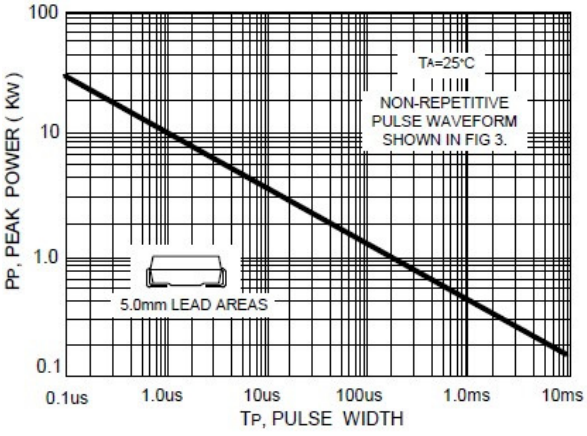
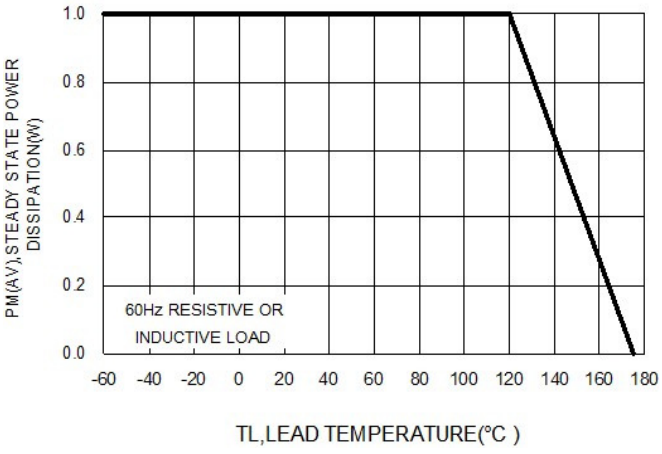


FIG.6- STEADY STATE POWER DERATING CURVE



LITE-ON SEMICONDUCTOR

Device Uni-directional	Device Bi-directional	Device Marking code		Working PeakReverse Voltage	Breakdowm 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}(V)	Min.	Max.	@IT(mA)	V_{RSM}(V)	I_{RSM}(A)	IR (uA)
SMAJ4.0		HB		4.0	5.40	6.50	10	8.6	46.5	1000
SMAJ5.0A	SMAJ5.0CA	HE	TE	5.0	6.40	7.07	10	9.2	43.5	800
SMAJ6.0A	SMAJ6.0CA	HG	TG	6.0	6.67	7.37	10	10.3	38.8	800
SMAJ6.5A	SMAJ6.5CA	HK	TK	6.5	7.22	7.98	10	11.2	35.7	500
	SMAJ6.5CL		TKL	6.5	7.22	7.98	10	11.2	35.7	150
SMAJ7.0A	SMAJ7.0CA	HM	TM	7.0	7.78	8.60	10	12.0	33.3	200
SMAJ7.5A	SMAJ7.5CA	HP	TP	7.5	8.33	9.21	1.0	12.9	31.0	100
SMAJ8.0A	SMAJ8.0CA	HR	TR	8.0	8.89	9.83	1.0	13.6	29.4	50.0
SMAJ8.5A	SMAJ8.5CA	HT	TT	8.5	9.44	10.4	1.0	14.4	27.7	10.0
SMAJ9.0A	SMAJ9.0CA	HV	TV	9.0	10.0	11.1	1.0	15.4	26.0	5.0
SMAJ10A	SMAJ10CA	HX	TX	10.0	11.1	12.3	1.0	17.0	23.5	5.0
SMAJ11A	SMAJ11CA	HZ	TZ	11.0	12.2	13.5	1.0	18.2	22.0	0.5
SMAJ12A	SMAJ12CA	IE	UE	12.0	13.3	14.7	1.0	19.9	20.1	0.5
SMAJ13A	SMAJ13CA	IG	UG	13.0	14.4	15.9	1.0	21.5	18.6	0.5
SMAJ14A	SMAJ14CA	IK	UK	14.0	15.6	17.2	1.0	23.2	17.2	0.5
SMAJ15A	SMAJ15CA	IM	UM	15.0	16.7	18.5	1.0	24.4	16.4	0.5
SMAJ16A	SMAJ16CA	IP	UP	16.0	17.8	19.7	1.0	26.0	15.3	0.5
SMAJ17A	SMAJ17CA	IR	UR	17.0	18.9	20.9	1.0	27.6	14.5	0.5
SMAJ18A	SMAJ18CA	IT	UT	18.0	20.0	22.1	1.0	29.2	13.7	0.5
SMAJ20A	SMAJ20CA	IV	UV	20.0	22.2	24.5	1.0	32.4	12.3	0.5
SMAJ22A	SMAJ22CA	IX	UX	22.0	24.4	27.0	1.0	35.5	11.2	0.5
SMAJ24A	SMAJ24CA	IZ	UZ	24.0	26.7	29.5	1.0	38.9	10.3	0.5
SMAJ26A	SMAJ26CA	JE	VE	26.0	28.9	31.9	1.0	42.1	9.5	0.5
SMAJ28A	SMAJ28CA	JG	VG	28.0	31.1	34.4	1.0	45.4	8.8	0.5
SMAJ30A	SMAJ30CA	JK	VK	30.0	33.3	36.8	1.0	48.4	8.3	0.5
SMAJ33A	SMAJ33CA	JM	VM	33.0	36.7	40.6	1.0	53.3	7.5	0.5
SMAJ36A	SMAJ36CA	JP	VP	36.0	40.0	44.2	1.0	58.1	6.9	0.5
SMAJ40A	SMAJ40CA	JR	VR	40.0	44.4	49.1	1.0	64.5	6.2	0.5
SMAJ43A	SMAJ43CA	JT	VT	43.0	47.8	52.8	1.0	69.4	5.7	0.5
SMAJ45A	SMAJ45CA	JV	VV	45.0	50.0	55.3	1.0	72.7	5.5	0.5
SMAJ48A	SMAJ48CA	JX	VX	48.0	53.3	58.9	1.0	77.4	5.2	0.5
SMAJ51A	SMAJ51CA	JZ	VZ	51.0	56.7	62.7	1.0	82.4	4.9	0.5
SMAJ54A	SMAJ54CA	RE	WE	54.0	60.0	66.3	1.0	87.1	4.6	0.5
SMAJ58A	SMAJ58CA	RG	WG	58.0	64.4	71.2	1.0	93.6	4.3	0.5
SMAJ60A	SMAJ60CA	RK	WK	60.0	66.7	73.7	1.0	96.8	4.1	0.5
SMAJ64A	SMAJ64CA	RM	WM	64.0	71.1	78.6	1.0	103	3.9	0.5
SMAJ70A	SMAJ70CA	RP	WP	70.0	77.8	86.0	1.0	113	3.5	0.5
SMAJ75A	SMAJ75CA	RR	WR	75.0	83.3	92.1	1.0	121	3.3	0.5
SMAJ78A	SMAJ78CA	RT	WT	78.0	86.7	95.8	1.0	126	3.2	0.5
SMAJ85A	SMAJ85CA	RV	WV	85.0	94.4	104	1.0	137	2.9	0.5
SMAJ90A	SMAJ90CA	RX	WX	90.0	100	111	1.0	146	2.7	0.5
SMAJ100A	SMAJ100CA	RZ	WZ	100.0	111	123	1.0	162	2.5	0.5

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		(UNI)	(BI)	V_{RWM}(V)	Min.	Max.	@IT(mA)	V_{RSM}(V)	I_{RSM}(A)	IR (uA)
SMAJ110A	SMAJ110CA	SE	XE	110.0	122	135	1.0	177	2.3	0.5
SMAJ120A	SMAJ120CA	SG	XG	120.0	133	147	1.0	193	2.0	0.5
SMAJ130A	SMAJ130CA	SK	XK	130.0	144	159	1.0	209	1.9	0.5
SMAJ150A	SMAJ150CA	SM	XM	150.0	167	185	1.0	243	1.6	0.5
SMAJ160A	SMAJ160CA	SP	XP	160.0	178	197	1.0	259	1.5	0.5
SMAJ170A	SMAJ170CA	SR	XR	170.0	189	209	1.0	275	1.4	0.5
SMAJ188A	SMAJ188CA	SS	VS	188.0	209	231	1.0	328	1.2	0.5
SMAJ200A	SMAJ200CA	ST	YT	200.0	224	248	1.0	324	1.2	0.5

NOTE :

Suffix 'A ' denotes 5% tolerance device.

1. Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices.
2. The IR limit is double for Bi-Directional devices.

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