LITE-ON SEMICONDUCTOR

A5.0SMCJ SERIES

SURFACE MOUNT
UNIDIRECTIONAL AND BIDIRECTIONAL
TRANSIENT VOLTAGE SUPPRESSORS

STAND-OFF VOLTAGE - **10** to **36** Volts
POWER DISSIPATION - **5000** WATTS

AUTOMOTIVE

FEATURES

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- 5000 W peak pulse power capability with a 10/1000 μs waveform
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0ns for Uni-direction, form 0 Volts to BV min
- RoHS compliant
- AEC-Q101 qualified
- PPAP capable
- Automotive grade

MECHANICAL DATA

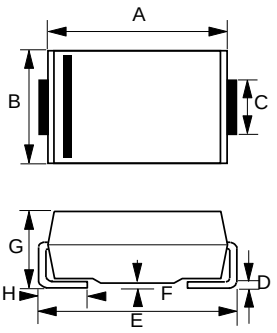
Case : Molded plastic

Case Material: Molding compound, UL Flammability classification 94V-0, (No Br. Sb. Cl.) "Halogen-free".

Polarity : by cathode band denotes uni-directional device

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.

CHARACTERISTICS	SYMBOLS	VALUE	UNIT
PEAK POWER DISSIPATION AT T_J = 25℃ , T_P = 1ms (Note 1)	P_{PK}	5000	W
Peak Forward Surge Current 8.3ms single half sine-wave @TJ=25 ℃ (Note 2)	I_{FSM}	300	A
Steady State Power Dissipation with PCB , see fig. 6	$P_{M(AV)}$	6.5	W
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℃ per Fig.1.
2. Only for unidirectional units.

REV.0, Aug-2017, KSIA05

FIG.1 - PULSE DERATING CURVE

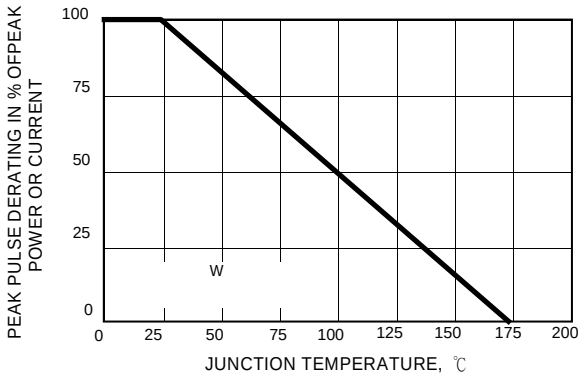


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

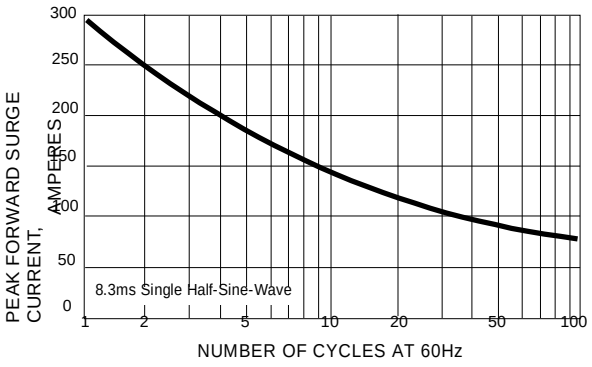


FIG.3 - PULSE WAVEFORM

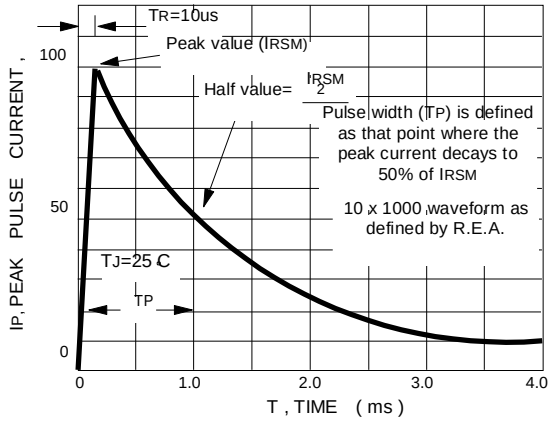


FIG.4 - TYPICAL JUNCTION CAPACITANCE

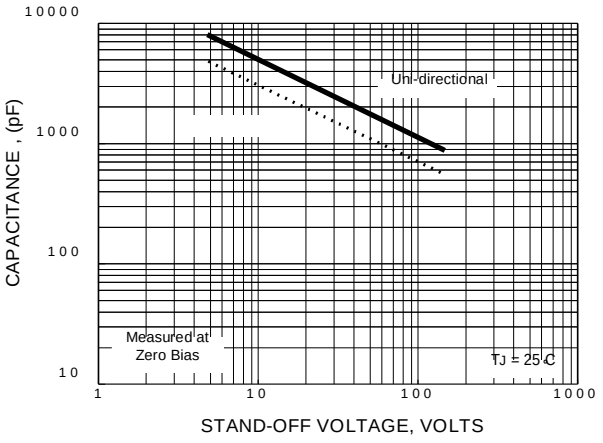


FIG.5 - PULSE RATING CURVE

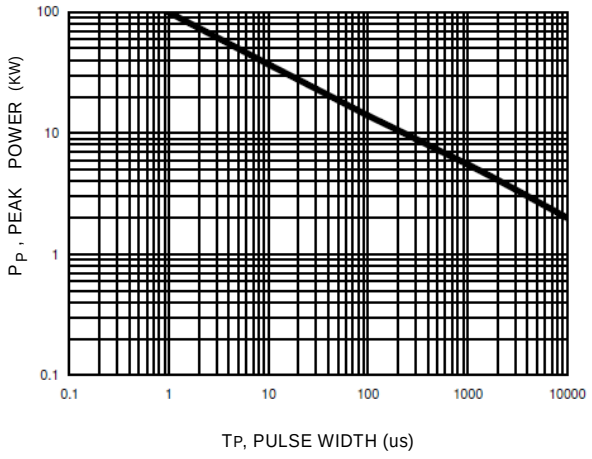
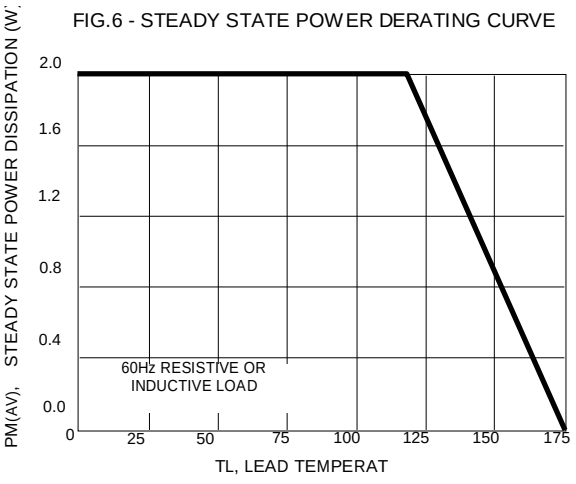


FIG.6 - STEADY STATE POWER DERATING CURVE



Type Number	Device Marking code	Reverse Standoff Voltage	Breakdown Voltage BV Volts @It			Max. Reverse Leakage @VR	Max. Clamping Voltage @Ipp	Max. Peak Pulse Current
(UNI)	(UNI)	VR (V)	Min (V)	Max (V)	It (mA)	IR (uA)	Vc (V)	Ipp (A)
A5.0SMCJ10A	AHDE	10	11.1	12.3	1	20	17	294.1
A5.0SMCJ12A	AHDF	12	13.3	14.7	1	10	19.9	251.3
A5.0SMCJ13A	AHDG	13	14.4	15.9	1	10.0	21.5	232.6
A5.0SMCJ16A	AHDK	16	17.8	19.7	1	2.0	26.0	192.3
A5.0SMCJ17A	AHDM	17	18.9	20.9	1	2.0	27.6	181.2
A5.0SMCJ18A	AHDP	18	20.0	22.1	1	2.0	29.2	171.2
A5.0SMCJ20A	AHDR	20	22.2	24.5	1	2.0	32.4	154.3
A5.0SMCJ22A	AHDT	22	24.4	26.9	1	2.0	35.5	140.8
A5.0SMCJ24A	AHDV	24	26.7	29.5	1	2.0	38.9	128.5
A5.0SMCJ26A	AHDX	26	28.9	31.9	1	2.0	42.1	118.8
A5.0SMCJ28A	AHDZ	28	32.1	34.4	1	2.0	45.4	110.1
A5.0SMCJ30A	AHEE	30	33.3	36.8	1	2.0	48.4	103.3
A5.0SMCJ33A	AHEG	33	36.7	40.6	1	2.0	53.3	93.8
A5.0SMCJ36A	AHEK	36	40.0	44.2	1	2.0	58.1	86.1

Notes

(1) Pulse test: $t_p \leqq$ 50 ms

(2) Surge current waveform per fig. 3 and derated per fig. 2

(3) All terms and symbols are consistent with ANSI/IEEE C62.35

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Typical thermal resistance, junction to ambient	R_{JA}	100	°C/W

Notes

(1) Mounted on minimum recommended pad layout

(2) Mounted on infinite heat sink

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