

Features

- ✧ For surface mounted application in order to optimize board space
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Excellent clamping capability
- ✧ Fast response time: Typically less than 1.0ps from 0 volt to BV min
- ✧ High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- ✧ Meet MSL level 1, per J-STD-020, LF maximum peak of 260°C
- ✧ Plastic material used carried Underwriters Laboratory Flammability Classification 94V-0
- ✧ 1000 watts peak pulse power capability with a 10 / 1000 us waveform
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminals: Pure tin plated, lead free
- ✧ Polarity: Indicated by cathode band
- ✧ Packaging: 12mm tape per EIA Std RS-481
- ✧ Weight: 0.093 gram

Ordering Information (example)

Part No.	Package	Packing	Packing code	Packing code (Green)
1KSMB39A	SMB	850 / 7" REEL	R5	R5G

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak Power Dissipation at T _A =25°C, T _p =1ms	P _{PK}	1000	Watts
Steady State Power Dissipation	P _D	5	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I _{FSM}	100	Amps
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only	V _F	3.5	Volts
Typical Thermal Resistance	R _{θJL} R _{θJA}	20 100	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-65 to +150	°C

Devices for Bipolar Applications

1. For Bidirectional Use CA Suffix

RATINGS AND CHARACTERISTIC CURVES (1KSMB SERIES)

FIG. 1 PEAK PULSE POWER RATING CURVE

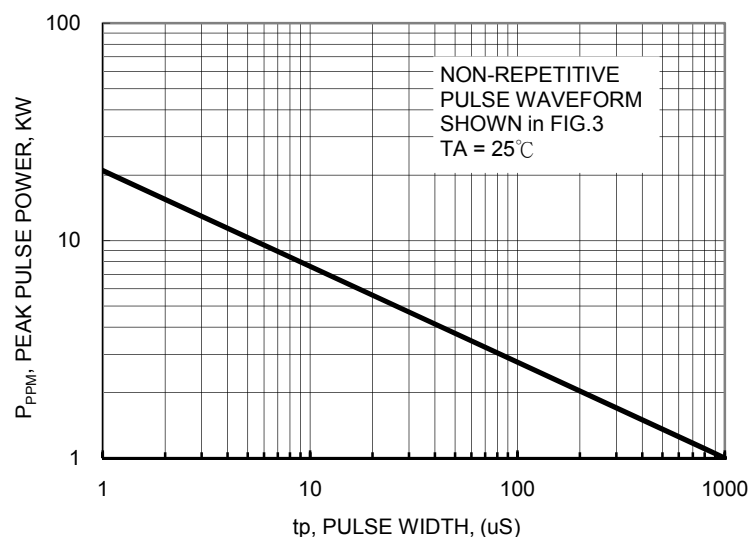


FIG.2 PULSE DERATING CURVE

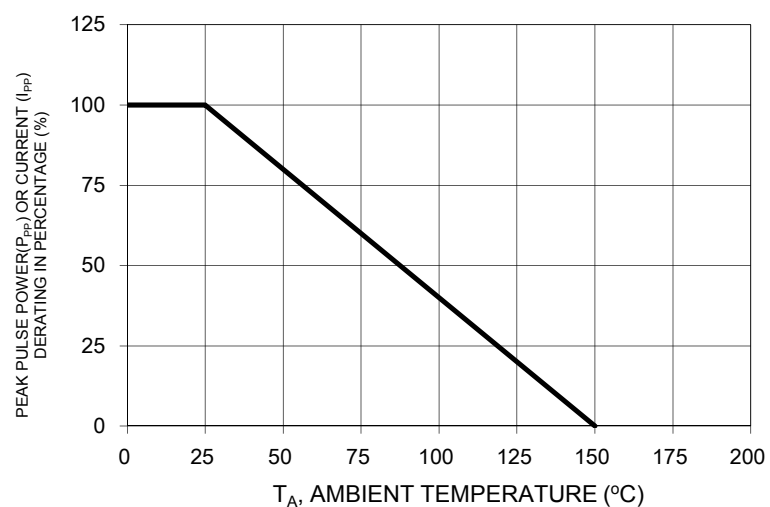


FIG. 3 CLAMPING POWER PULSE WAVEFORM

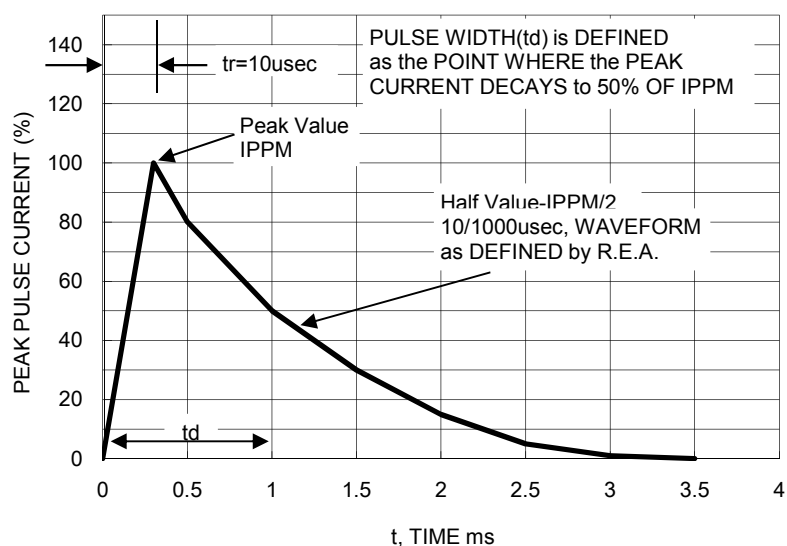


FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

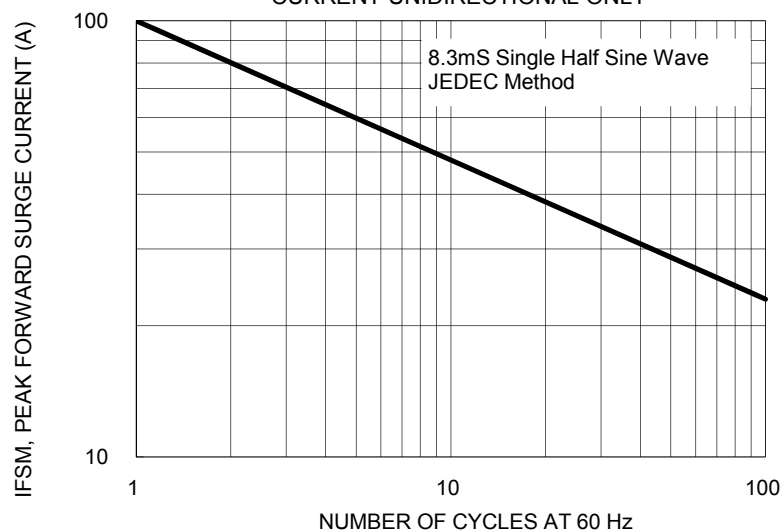
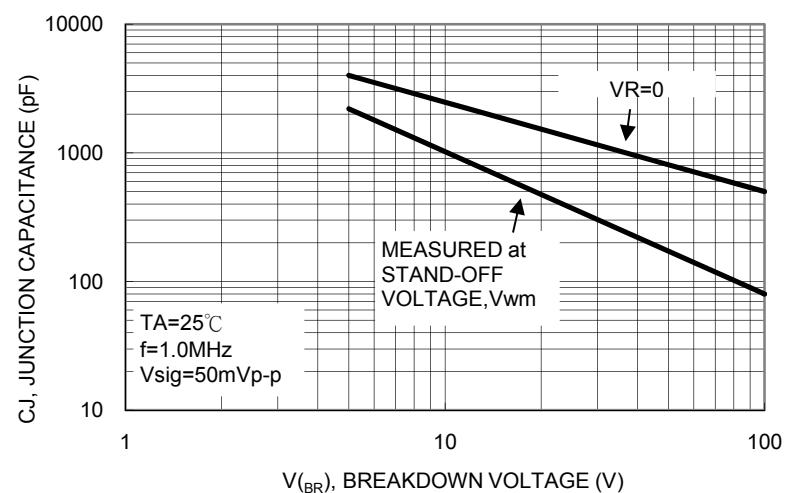


FIG. 5 TYPICAL JUNCTION CAPACITANCE



ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Device	Device Marking Code	Breakdown Voltage VBR (V) (Note 1)		Test Current IT (mA)	Stand-Off Voltage VWM (V)	Maximum Reverse Leakage @ VWM ID (uA)	Maximum Peak Pulse Current IRSM (A) (Note 2)	Maximum Clamping Voltage @ IPPM Vc(V)	Maximum Temperature Coefficient of VBR(%/°C)
		Min	Max						
1KSMB39A	N10S	37.1	41.0	1.0	33.3	1.0	18.6	53.9	0.100
1KSMB39CA	A10S								

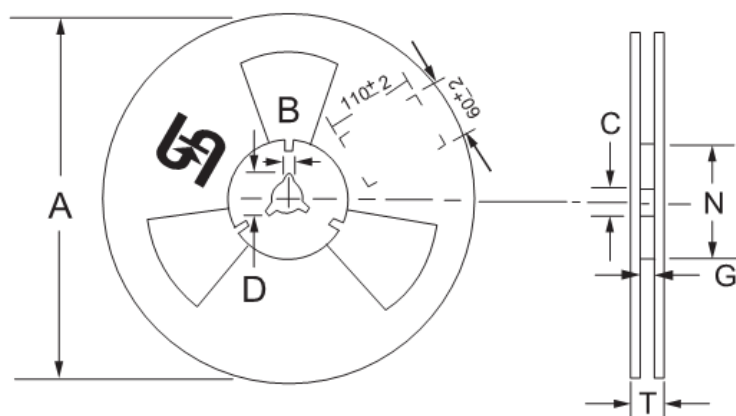
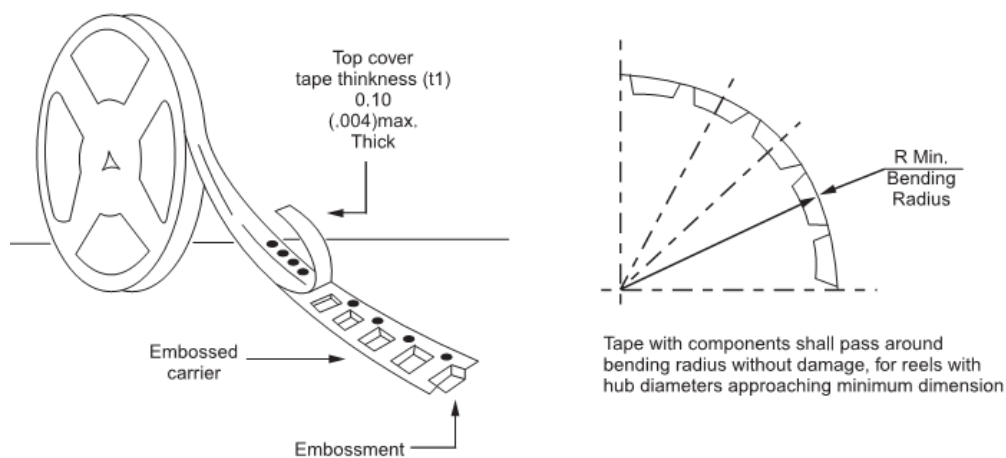
Notes:

1. V_{BR} measure after I_T applied for 300us, I_T =square wave pulse or equivalent.
2. All terms and symbols are consistent with ANSI/IEEE C62.35.

Ordering information

Part No.	Package	Packing	Packing code	Packing code (Green)
1KSMB39A	SMB	850 / 7" REEL	R5	R5G
	SMB	3K / 13" REEL	R4	R4G
	SMB	3K / 13" Plastic REEL	M4	M4G

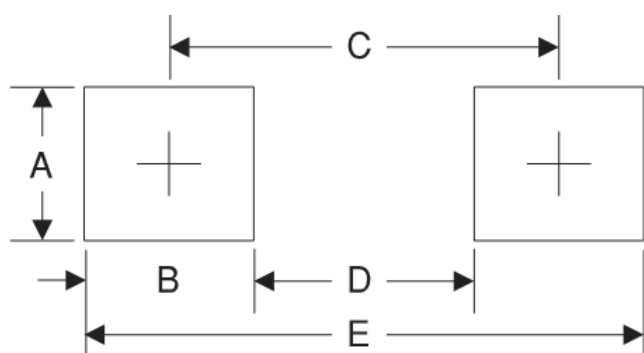
Tape & Reel specification



Unit (mm)

Reel Size	Tape Size	A	B	C	D	N	G	T
		±2.0	±0.4	+0.5;-0.2	min	±1.0	+0.8;-0	max
7"	12mm	178	1.9	13	21	62	12.2	14.6
Reel Size	Tape Size	A	B	C	D	N	G	T
		max	±0.5	±0.5	min	±0.5	+2.0;-0	max
13"	12mm	330	2	13	20.2	75	12.4	18.4

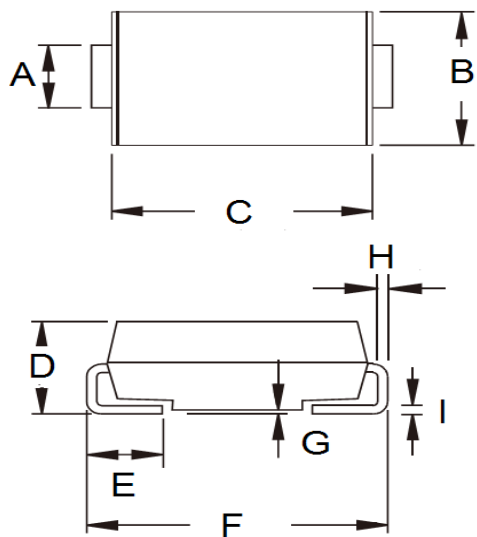
Suggested PAD Layout



Symbol	Unit(mm)
A	2.3
B	2.5
C	4.3
D	1.8
E	6.7

Version:B13

Dimensions



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.95	2.10	0.077	0.083
B	3.48	3.73	0.137	0.147
C	4.25	4.75	0.167	0.187
D	1.99	2.61	0.078	0.103
E	0.90	1.41	0.035	0.056
F	5.10	5.30	0.201	0.209
G	0.10	0.20	0.004	0.008
H	0.15	0.31	0.006	0.012
I	0.15	0.31	0.006	0.012

Marking Diagram



- P/N = Specific Device Code
- G = Green Compound
- YW = Date Code
- F = Factory Code