



1000W,10V-100V Surface Mount Transient Voltage Suppressor

1KSMB6.8A-1KSMB180A

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated junction
- Built-in strain relief
- Excellent clamping capability
- Fast response time: Typically less than 1.0ps from 0 volt to BV min
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition AEC-Q101 qualified

MECHANICAL DATA

Case: DO-214AA (SMB)

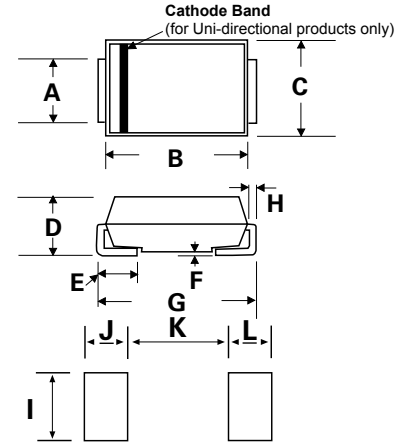
Molding compound, UL flammability classification rating 94V-0 Moisture sensitivity level: level 1, per J-STD-020 Packing code with suffix "G" means green compound (halogen-free)

Terminal: Matte tin plated leads, solderable per JESD22-B102 Meet JESD 201 class 2 whisker test

Polarity: Indicated by cathode band

Weight: 0.11 g (approximately)

DO-214AA (SMB J-Bend)



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.077	0.086	1.950	2.200
B	0.160	0.180	4.060	4.570
C	0.130	0.155	3.300	3.940
D	0.084	0.096	2.130	2.440
E	0.030	0.060	0.760	1.520
F	-	0.008	-	0.203
G	0.205	0.220	5.210	5.590
H	0.006	0.012	0.152	0.305
I	0.089	-	2.260	-
J	0.085	-	2.160	-
K	-	0.107	-	2.740
L	0.085	-	2.160	-

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Peak Pulse Power Dissipation at T _A =25°C by 10/1000μs Waveform (Fig.2)(Note 1), (Note 2)	P _{PPM}	1000	Watts
Power Dissipation on Infinite Heat Sink at T _L =50°C	P _D	5	Watts
Peak forward surge current, 8.3 ms single half sine-wave(note3)	I _{FSM}	120	A
Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only	V _F	3.5	Volts
Typical Thermal Resistance Junction to Lead Typical Thermal Resistance Junction to Ambient	R _{θJL} R _{θJA}	20 100	°C/W
Operating Temperature Range	T _J	- 65 to +150	°C
Storage Temperature Range	T _{STG}	- 65 to +175	°C

Note:

- 1.Non-repetitive current pulse , per Fig. 4 and derated above T_J (initial) =25°C per Fig. 3.
- 2.Mounted on copper pad area of 0.2x0.2" (5.0 x 5.0mm) to each terminal.
- 3.Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

Electrical Characteristics

Part Number (Uni) 型号 (单向)	Part Number (Bi) 型号 (双向)	Reverse Stand off Voltage V_R (Volts) 反向对峙电压	Breakdown Voltage V_{BR} (Volts) @ I_T 崩溃电压		Test Current I_T (mA) 测试电流	Maximum Clamping Voltage V_C @ $I_{PP}(V)$ 最大嵌位电压	Maximum Peak Pulse Current $I_{PP}(A)$ 最大峰值脉冲电流	Maximum Reverse Leakage I_R @ V_R (μA) 最大反向漏电
			MIN	MAX				
1KSMB6.8A	1KSMB6.8CA	5.80	6.45	7.14	10	10.5	95.2	900
1KSMB7.5A	1KSMB7.5CA	6.40	7.13	7.88	10	11.3	88.5	400
1KSMB8.2A	1KSMB8.2CA	7.02	7.79	8.61	10	12.1	82.6	180
1KSMB9.1A	1KSMB9.1CA	7.78	8.65	9.55	1	13.4	74.6	45
1KSMB10A	1KSMB10CA	8.55	9.50	10.50	1	14.5	69.0	8
1KSMB11A	1KSMB11CA	9.40	10.50	11.60	1	15.6	64.1	4
1KSMB12A	1KSMB12CA	10.20	11.40	12.60	1	16.7	59.9	1
1KSMB13A	1KSMB13CA	11.10	12.40	13.70	1	18.2	54.9	1
1KSMB15A	1KSMB15CA	12.80	14.30	15.80	1	21.2	47.2	1
1KSMB16A	1KSMB16CA	13.60	15.20	16.80	1	22.5	44.4	1
1KSMB18A	1KSMB18CA	15.30	17.10	18.90	1	25.5	39.2	1
1KSMB20A	1KSMB20CA	17.10	19.00	21.00	1	27.7	36.1	1
1KSMB22A	1KSMB22CA	18.80	20.90	23.10	1	30.6	32.7	1
1KSMB24A	1KSMB24CA	20.50	22.80	25.20	1	33.2	30.1	1
1KSMB27A	1KSMB27CA	23.10	25.70	28.40	1	37.5	26.7	1
1KSMB30A	1KSMB30CA	25.60	28.50	31.50	1	41.4	24.2	1
1KSMB33A	1KSMB33CA	28.20	31.40	34.70	1	45.7	21.9	1
1KSMB36A	1KSMB36CA	30.80	34.20	37.80	1	49.9	20.0	1
1KSMB39A	1KSMB39CA	33.30	37.10	41.00	1	53.9	18.6	1
1KSMB43A	1KSMB43CA	36.80	40.90	45.20	1	59.3	16.9	1
1KSMB47A	1KSMB47CA	40.20	44.70	49.40	1	64.8	15.4	1
1KSMB51A	1KSMB51CA	43.60	48.50	53.60	1	70.1	14.3	1
1KSMB56A	1KSMB56CA	47.80	53.20	58.80	1	77.0	13.0	1
1KSMB62A	1KSMB62CA	53.00	58.90	65.10	1	85.0	11.8	1
1KSMB68A	1KSMB68CA	58.10	64.60	71.40	1	92.0	10.9	1
1KSMB75A	1KSMB75CA	64.10	71.30	78.80	1	103.0	9.7	1
1KSMB82A	1KSMB82CA	70.10	77.90	86.10	1	113.0	8.8	1
1KSMB91A	1KSMB91CA	77.80	86.50	95.50	1	125.0	8.0	1
1KSMB100A	1KSMB100CA	85.50	95.00	105.00	1	137.0	7.3	1
1KSMB110A	1KSMB110CA	94.00	105.00	116.00	1	152.0	6.6	1
1KSMB120A	1KSMB120CA	102.00	114.00	126.00	1	165.0	6.1	1
1KSMB130A	1KSMB130CA	111.00	124.00	137.00	1	179.0	5.6	1
1KSMB150A	1KSMB150CA	128.00	143.00	158.00	1	207.0	4.8	1
1KSMB160A	1KSMB160CA	136.00	152.00	168.00	1	219.0	4.6	1
1KSMB170A	1KSMB170CA	144.50	162.00	179.00	1	234.0	4.3	1
1KSMB180A	1KSMB180CA	153.00	171.00	189.00	1	246.0	4.1	1

For bidirectional type having V_R of 10 volts and less, the I_R limit is double.

For parts without A V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts.

Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 1 - TVS Transients Clamping Waveform

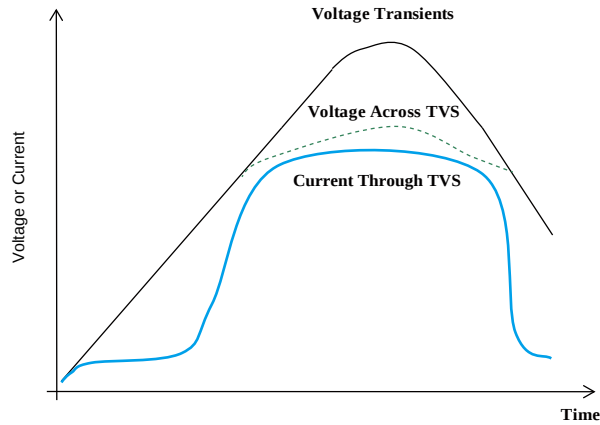


Figure 2 - Peak Pulse Power Rating Curve

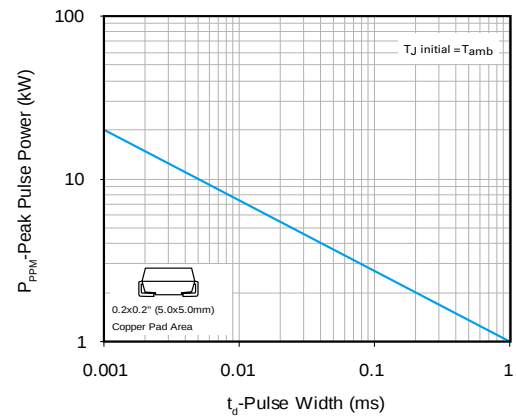


Figure 3 - Peak Pulse Power Derating Curve

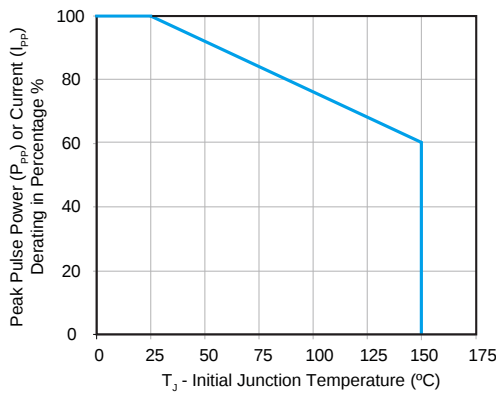


Figure 4 - Pulse Waveform

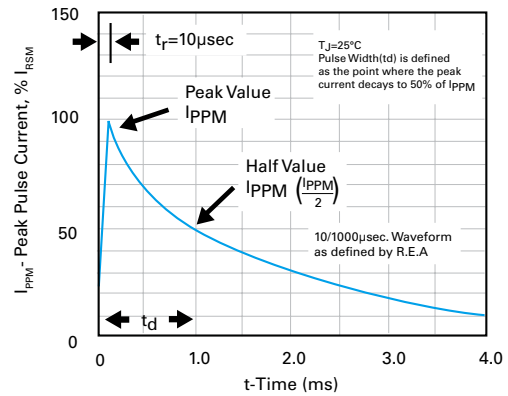


Figure 5 - Typical Junction Capacitance

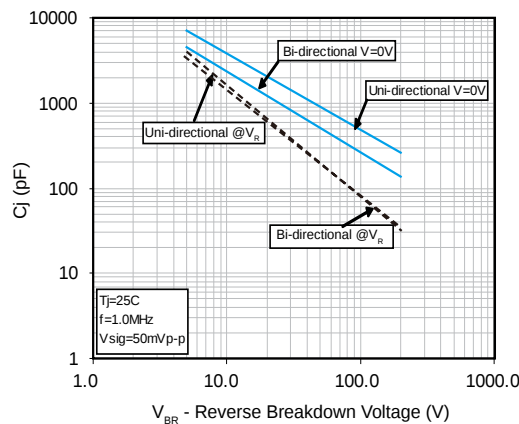


Figure 6 - Typical Transient Thermal Impedance

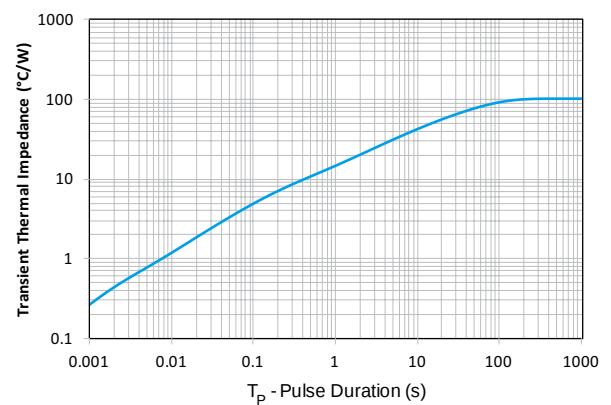


Figure 7 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

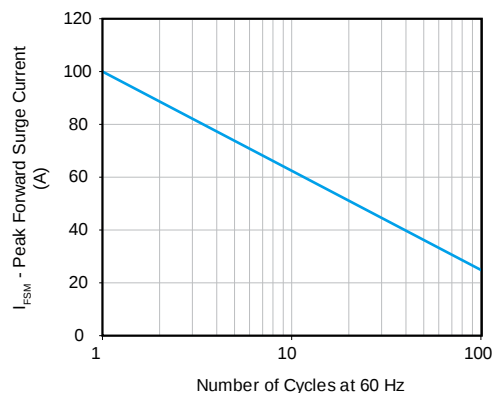


Figure 8 - Peak Forward Voltage Drop vs Peak Forward Current (Typical Values)

