



**THE DATASHEET OF  
SMB10J13A R5G**



## 1000W Surface Mount Transient Voltage Suppressor

### FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated junction
- Excellent clamping capability
- Fast response time: typically less than 1.0ps
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



**DO-214AA (SMB)**

### MECHANICAL DATA

**Case:** DO-214AA (SMB)

Molding compound: UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Part no. with suffix "H" means AEC-Q101 qualified

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

**Weight:** 0.11 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation at T <sub>A</sub> =25°C, tp=1ms (Note 1)	P <sub>PK</sub>	1000	W
Steady state power dissipation	P <sub>D</sub>	5	W
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	100	A
Maximum instantaneous forward voltage at 50 A for unidirectional only	V <sub>F</sub>	3.5	V
Typical thermal resistance	R <sub>θJL</sub> R <sub>θJA</sub>	20 100	°C/W
Operating junction temperature range	T <sub>J</sub>	- 55 to +175	°C
Storage temperature range	T <sub>STG</sub>	- 55 to +175	°C

Note 1: Non-repetitive current pulse per fig. 3 and derated above T<sub>A</sub>=25°C per fig. 2

Devices for bipolar applications

1. For bidirectional use CA suffix

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX (*)	PACKAGE	PACKING
SMB10J30A	H	R5	G	SMB	850 / 7" Plastic reel
		R4		SMB	3,000 / 13" Paper reel
		M4		SMB	3,000 / 13" Plastic reel

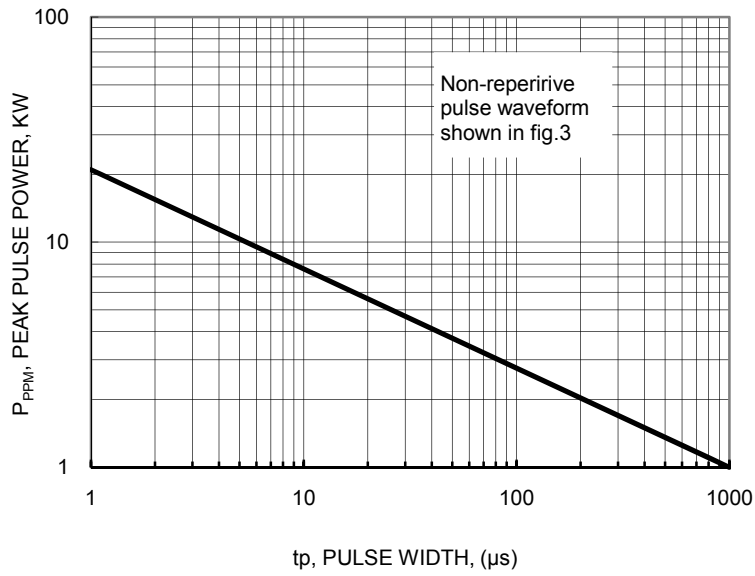
\*: Optional available

EXAMPLE					
EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SMB10J30AHR5G	SMB10J30A	H	R5	G	AEC-Q101 qualified Green compound

**RATINGS AND CHARACTERISTICS CURVES**

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

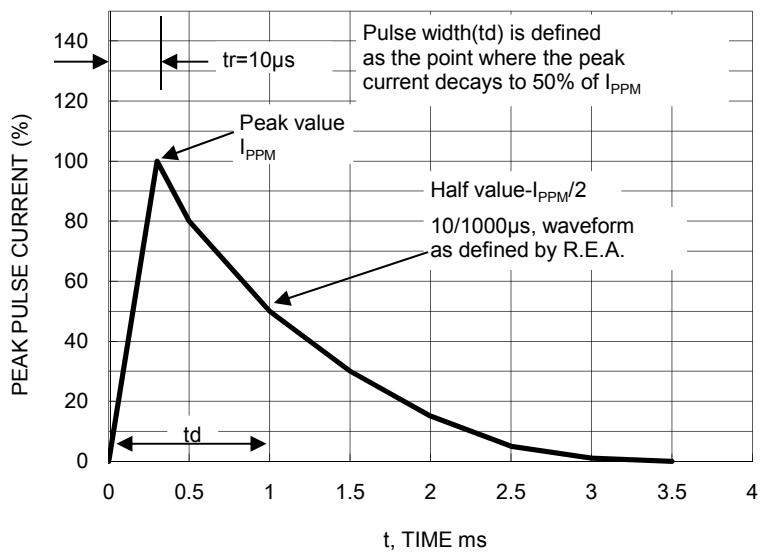
**FIG. 1 PEAK PULSE POWER RATING CURVE**



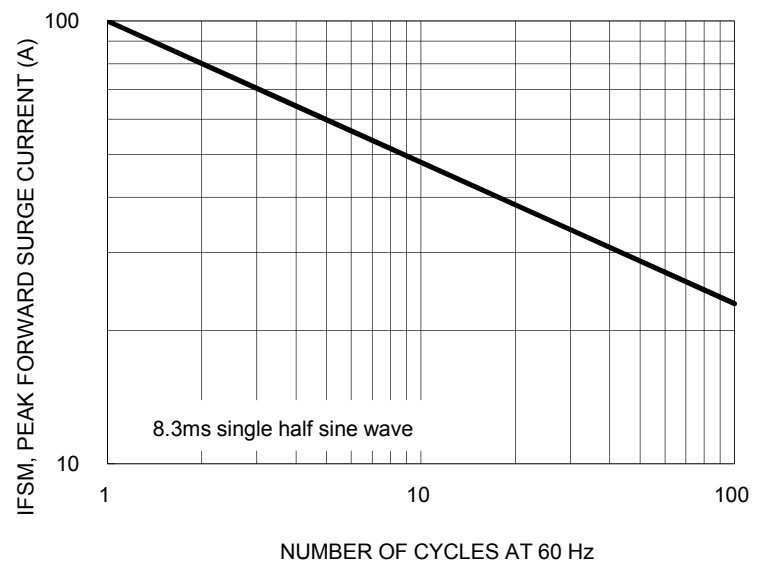
**FIG.2 PULSE DERATING CURVE**



**FIG. 3 CLAMPING POWER PULSE WAVEFORM**



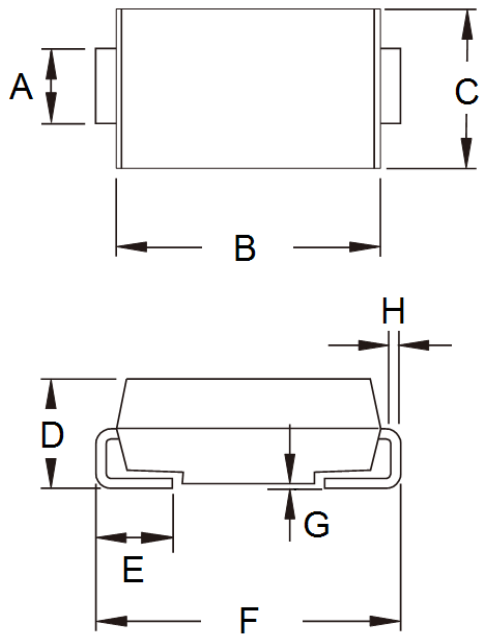
**FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY**



Device		Device Marking Code		Breakdown Voltage $V_{BR}$ (V)		Test Current $I_T$ (mA)	Stand-Off Voltage $V_{WM}$ (V)	Maximum Reverse Leakage @ $V_{WM}$ $I_R$ ( $\mu$ A)	Maximum Peak Pulse Current $I_{PPM}$ (A)	Maximum Clamping Voltage @ $I_{PPM}$ $V_C$ (V)
				Min	Max					
SMB10J9.0A	SMB10J9.0CA	1KV	KVC	10.0	11.1	1	9	10	64.9	15.4
SMB10J10A	SMB10J10CA	1KX	KXC	11.1	12.3	1	10	8	58.8	17.0
SMB10J11A	SMB10J11CA	1KZ	KZC	12.2	13.5	1	11	5	54.9	18.2
SMB10J12A	SMB10J12CA	1LE	LEC	13.3	14.7	1	12	5	50.3	19.9
SMB10J13A	SMB10J13CA	1LG	LGC	14.4	15.9	1	13	5	46.5	21.5
SMB10J14A	SMB10J14CA	1LK	LKC	15.6	17.2	1	14	5	43.1	23.2
SMB10J15A	SMB10J15CA	1LM	LMC	16.7	18.5	1	15	1	41.0	24.4
SMB10J16A	SMB10J16CA	1LP	LPC	17.8	19.7	1	16	1	38.5	26.0
SMB10J17A	SMB10J17CA	1LR	LRC	18.9	20.9	1	17	1	36.2	27.6
SMB10J18A	SMB10J18CA	1LT	LTC	20.0	22.1	1	18	1	34.2	29.2
SMB10J20A	SMB10J20CA	1LV	LVC	22.2	24.5	1	20	1	30.9	32.4
SMB10J22A	SMB10J22CA	1LX	LXC	24.4	26.9	1	22	1	28.2	35.5
SMB10J24A	SMB10J24CA	1LZ	LZC	26.7	29.5	1	24	1	25.7	38.9
SMB10J26A	SMB10J26CA	1ME	MEC	28.9	31.9	1	26	1	23.8	42.1
SMB10J28A	SMB10J28CA	1MG	MGC	31.1	34.4	1	28	1	22.0	45.4
SMB10J30A	SMB10J30CA	1MK	MKC	33.3	36.8	1	30	1	20.7	48.4
SMB10J33A	SMB10J33CA	1MM	MMC	36.7	40.6	1	33	1	18.8	53.3
SMB10J36A	SMB10J36CA	1MP	MPC	40.0	44.2	1	36	1	17.2	58.1
SMB10J40A	SMB10J40CA	1MR	MRC	44.4	49.1	1	40	1	15.5	64.5

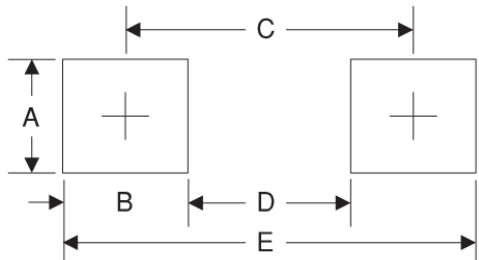
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.95	2.10	0.077	0.083
B	4.25	4.75	0.167	0.187
C	3.48	3.73	0.137	0.147
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

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.3	0.091
B	2.5	0.098
C	4.3	0.169
D	1.8	0.071
E	6.8	0.268

MARKING DIAGRAM



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

Note: Cathode band for uni-directional products only

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