

## 3000W, 10V - 100V Surface Mount Transient Voltage Suppressor

### FEATURES

- $T_J$  175°C, AECQ-101 qualified
- 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



**DO-214AB (SMC)**

### MECHANICAL DATA

**Case:** DO-214AB (SMC)

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:** 0.21 g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation at $T_A=25^\circ\text{C}$ , $T_p=1\text{ms}$ (Note 1)	$P_{PK}$	3000	Watts
Steady state power dissipation	$P_D$	6.5	Watts
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	300	A
Maximum instantaneous forward voltage at 100 A for Unidirectional only (Note 2)	$V_F$	3.5 / 5.0	Volts
Typical thermal resistance	$R_{\theta JL}$	15	$^\circ\text{C/W}$
	$R_{\theta JA}$	75	
Operating junction temperature range	$T_J$	- 55 to +175	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	- 55 to +175	$^\circ\text{C}$

Note 1: Non-repetitive Current Pulse Per Fig. 3 and Derated above  $T_A=25^\circ\text{C}$  Per Fig. 2

Note 2:  $V_F=3.5\text{V}$  on SMDJ10A - SMDJ90A Devices and  $V_F=5.0\text{V}$  on SMDJ100A

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX <sup>(*)</sup>	PACKAGE	PACKING
SMDJxxxx (Note 1)	H	R7	G	SMC	850 / 7" Plastic reel
		R6		SMC	3,000 / 13" Paper reel
		M6		SMC	3,000 / 13" Plastic reel

Note 1: "xxxx" defines voltage from 10V (SMDJ10A) to 100V (SMDJ100A)

\*: Optional available

EXAMPLE					
PREFERRED PART NO.	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SMDJ100AHR7G	SMDJ100A	H	R7	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

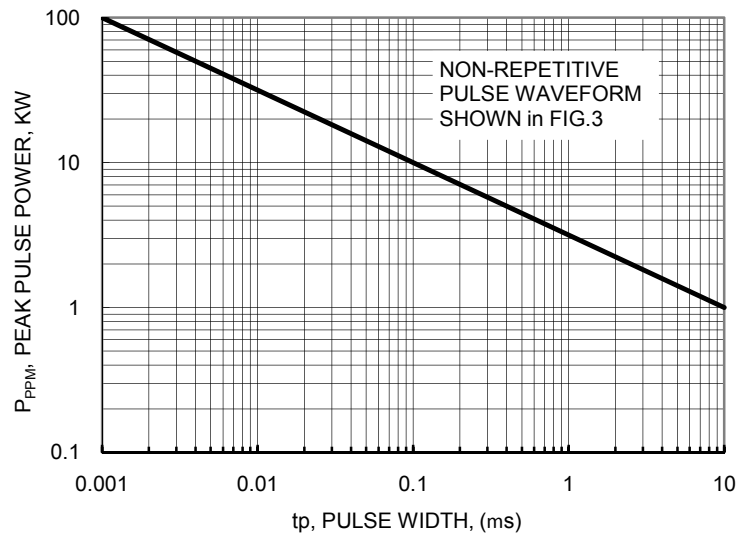


FIG.2 PULSE DERATING CURVE

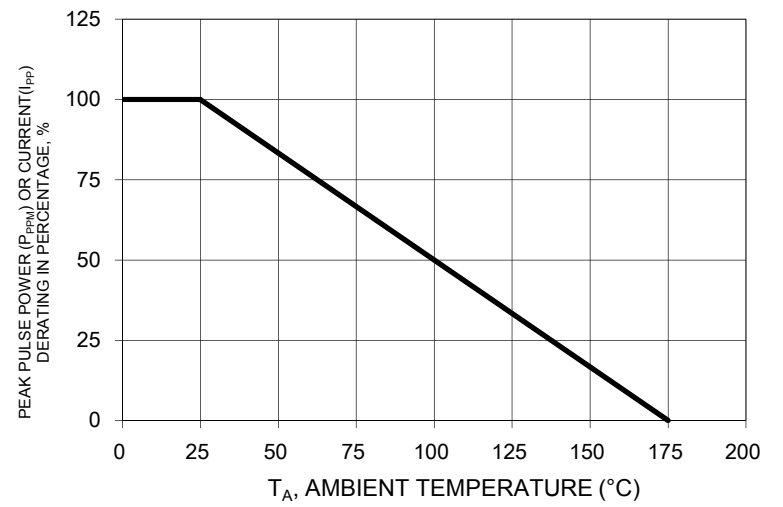


FIG. 3 CLAMPING POWER PULSE WAVEFORM

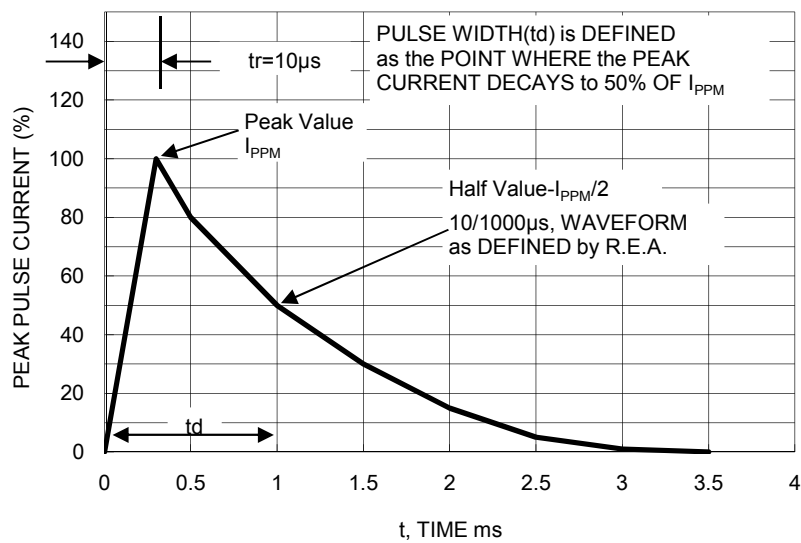


FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

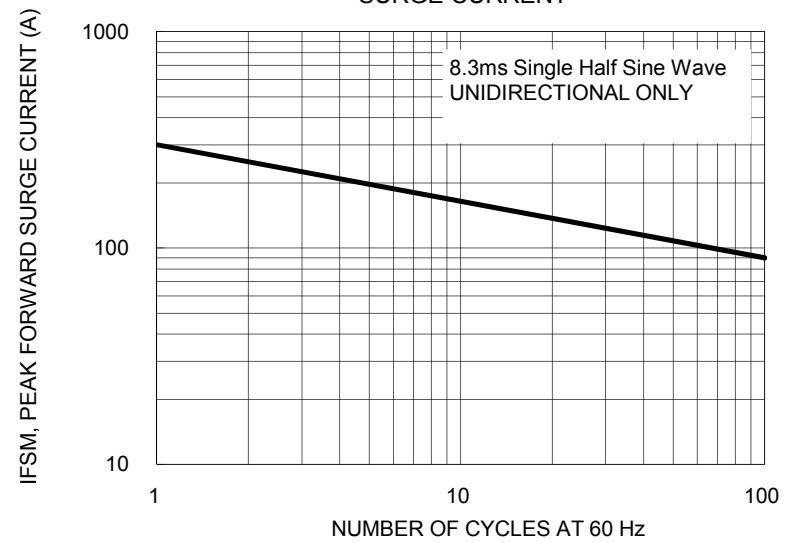
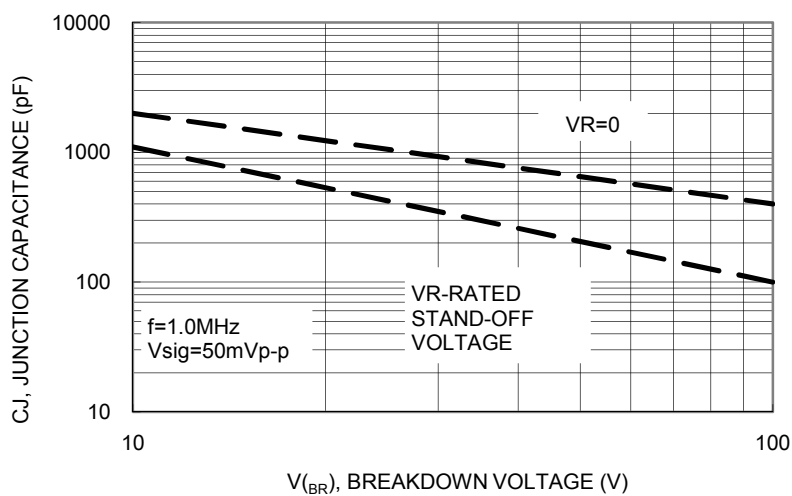


FIG. 5 TYPICAL JUNCTION CAPACITANCE

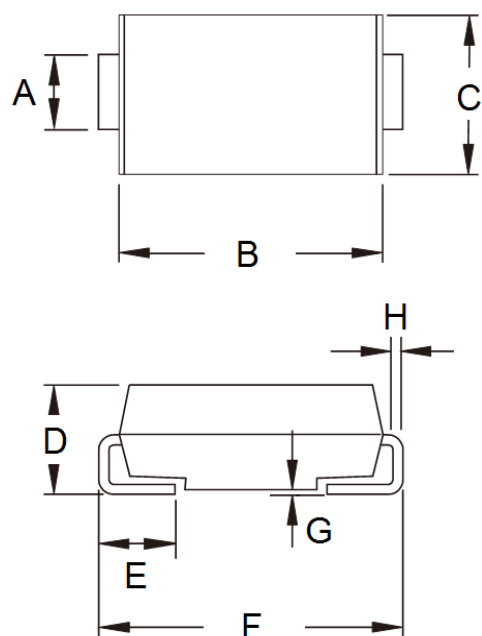


Device	Device Marking Code	Breakdown Voltage $V_{BR}$ (V) at $I_T$		Test Current $I_T$ (mA)	Stand-Off Voltage $V_{WM}$ (V)	Maximum Reverse Leakage @ $V_{WM}$ $I_D$ ( $\mu$ A)	Maximum Peak Surge Current $I_{PPM}$ (A)	Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (V)
		Min	Max					
UNI	UNI							
SMDJ10A	PDX	11.1	12.3	1	10	5	176.5	17.0
SMDJ11A	PDZ	12.2	13.5	1	11	1	164.8	18.2
SMDJ12A	PEE	13.3	14.7	1	12	1	150.8	19.9
SMDJ13A	PEG	14.4	15.9	1	13	1	139.5	21.5
SMDJ14A	PEK	15.6	17.2	1	14	1	129.3	23.2
SMDJ15A	PEM	16.7	18.5	1	15	1	123.0	24.4
SMDJ16A	PEP	17.8	19.7	1	16	1	115.4	26.0
SMDJ17A	PER	18.9	20.9	1	17	1	108.7	27.6
SMDJ18A	PET	20	22.1	1	18	1	102.7	29.2
SMDJ20A	PEV	22.2	24.5	1	20	1	92.6	32.4
SMDJ22A	PEX	24.4	26.9	1	22	1	84.5	35.5
SMDJ24A	PEZ	26.7	29.5	1	24	1	77.1	38.9
SMDJ26A	PFE	28.9	31.9	1	26	1	71.3	42.1
SMDJ28A	PFG	31.1	34.4	1	28	1	66.1	45.4
SMDJ30A	PFK	33.3	36.8	1	30	1	62.0	48.4
SMDJ33A	PFM	36.7	40.6	1	33	1	56.3	53.3
SMDJ36A	PFP	40	44.2	1	36	1	51.6	58.1
SMDJ40A	PFR	44.4	49.1	1	40	1	46.5	64.5
SMDJ43A	PFT	47.8	52.8	1	43	1	43.2	69.4
SMDJ45A	PFV	50.0	55.3	1	45	1	41.3	72.7
SMDJ48A	PFX	53.3	58.9	1	48	1	38.8	77.4
SMDJ51A	PFZ	56.7	62.7	1	51	1	36.4	82.4
SMDJ54A	PGE	60.0	66.3	1	54	1	34.4	87.1
SMDJ58A	PGG	64.4	71.2	1	58	1	32.1	93.6
SMDJ60A	PGK	66.7	73.7	1	60	1	31.0	96.8
SMDJ64A	PGM	71.1	78.6	1	64	1	29.1	103
SMDJ70A	PGP	77.8	86	1	70	1	26.5	113
SMDJ75A	PGR	83.3	92.1	1	75	1	24.8	121
SMDJ78A	PGT	86.7	95.8	1	78	1	23.8	126
SMDJ85A	PGV	94.4	104	1	85	1	21.9	137
SMDJ90A	PGX	100	111	1	90	1	20.5	146
SMDJ100A	PGZ	111	123	1	100	1	18.5	162

Notes:

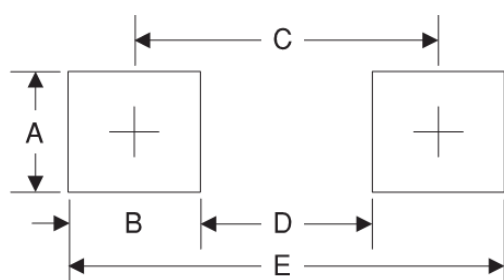
1.  $V_{BR}$  measure after  $I_T$  applied for 300 $\mu$ s,  $I_T$ =square wave pulse or equivalent.
2. Surge current waveform per Figure. 3 and derate per Figure. 2.
3. All terms and symbols are consistent with ANSI/IEEE C62.35.

PACKAGE OUTLINE DIMENSIONS  
**DO-214AB (SMC)**



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.90	3.20	0.114	0.126
B	6.60	7.11	0.260	0.280
C	5.59	6.22	0.220	0.245
D	2.00	2.62	0.079	0.103
E	1.00	1.60	0.039	0.063
F	7.75	8.13	0.305	0.320
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	3.3	0.130
B	2.5	0.098
C	6.8	0.268
D	4.4	0.173
E	9.4	0.370

MARKING DIAGRAM



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

Note: Cathode band for uni-directional products only

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