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 definition

DO-214AB (SMC)

Pb-Free

RoHS COMPLIANT

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°C unless otherwise noted)			
PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation at T_A=25°C, Tp=1ms (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	$R_{\theta JL}$ $R_{\theta JA}$	15 75	°C/W
Operating junction temperature range	T_J	- 55 to +175	°C
Storage temperature range	T_{STG}	- 55 to +175	°C

Note 1: Non-repetitive Current Pulse Per Fig. 3 and Derated above T_A=25°C Per Fig. 2

Note 2: VF=3.5V on SMDJ10A - SMDJ90A Devices and VF=5.0V on SMDJ100A

Devices for Bipolar Applications

1. For Bidirectional use CA suffix for types SMDJ10 - type SMDJ100
2. Electrical Characteristics Apply in Both Directions

ORDERING INFORMATION					
PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX(*)	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°C unless otherwise noted)

FIG. 1 PEAK PULSE POWER RATING CURVE

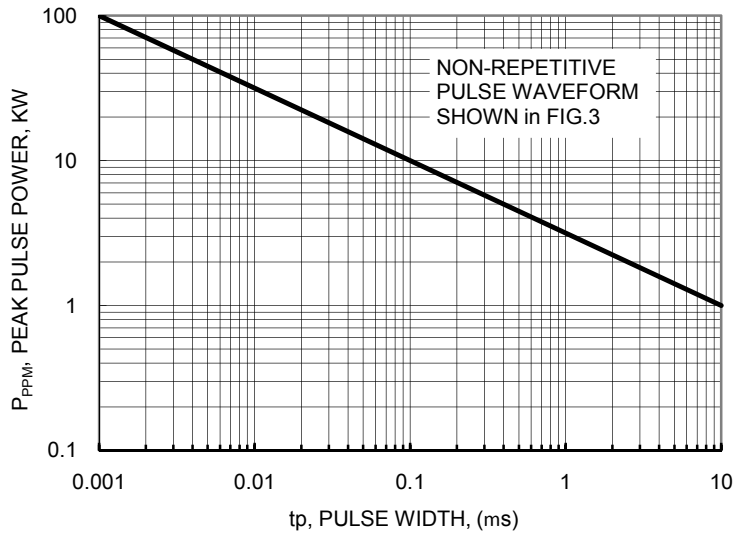


FIG.2 PULSE DERATING CURVE

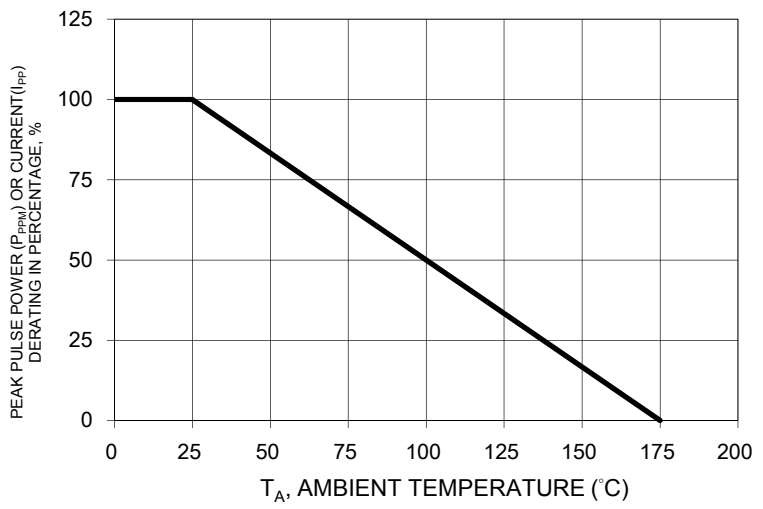


FIG. 3 CLAMPING POWER PULSE WAVEFORM

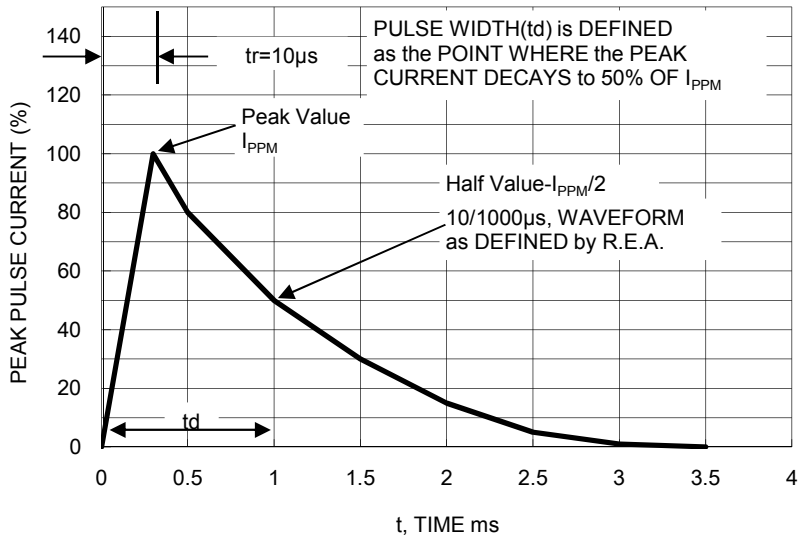


FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

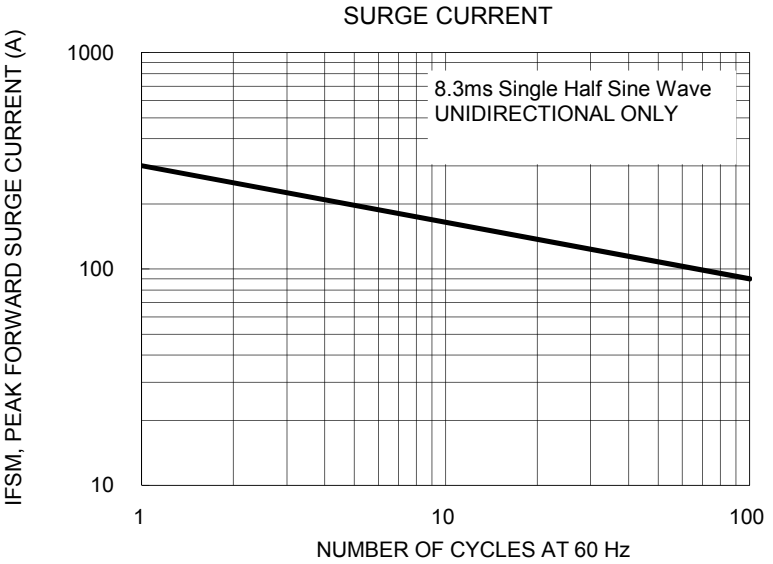
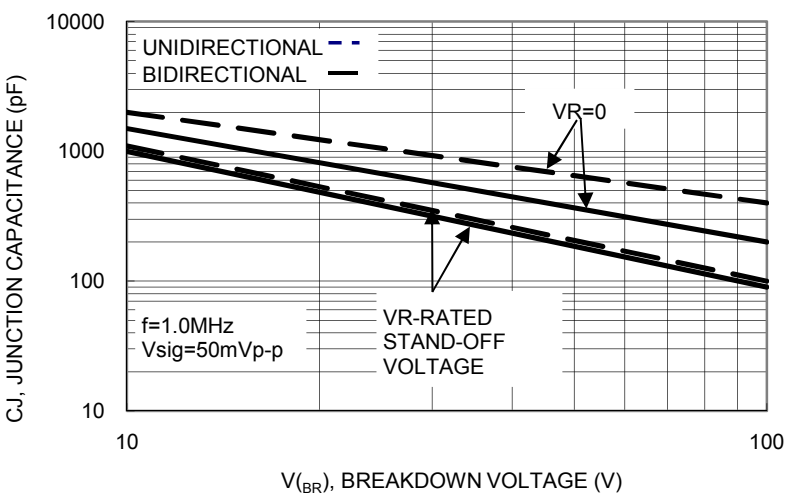


FIG. 5 TYPICAL JUNCTION CAPACITANCE



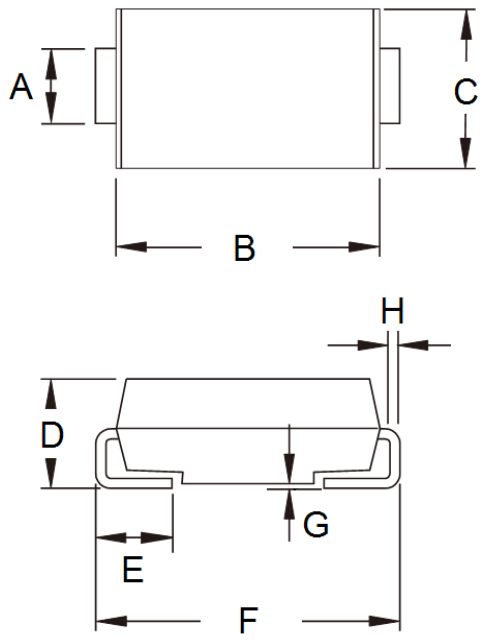
Device		Device Marking Code		Breakdown Voltage V_{BR} (V) at I_T		Test Current I_T (mA)	Stand-Off Voltage V_{WM} (V)	Maximum Reverse Leakage @ V_{WM} I_D (μA)	Maximum Peak Surge Current I_{PPM} (A)	Maximum Clamping Voltage at I_{PPM} Vc (V)
UNI	BI	UNI	BI	Min	Max					
SMDJ10A	SMDJ10CA	PDX	DDX	11.1	12.3	1	10	5	176.5	17.0
SMDJ11A	SMDJ11CA	PDZ	DDZ	12.2	13.5	1	11	1	164.8	18.2
SMDJ12A	SMDJ12CA	PEE	DEE	13.3	14.7	1	12	1	150.8	19.9
SMDJ13A	SMDJ13CA	PEG	DEG	14.4	15.9	1	13	1	139.5	21.5
SMDJ14A	SMDJ14CA	PEK	DEK	15.6	17.2	1	14	1	129.3	23.2
SMDJ15A	SMDJ15CA	PEM	DEM	16.7	18.5	1	15	1	123.0	24.4
SMDJ16A	SMDJ16CA	PEP	DEP	17.8	19.7	1	16	1	115.4	26.0
SMDJ17A	SMDJ17CA	PER	DER	18.9	20.9	1	17	1	108.7	27.6
SMDJ18A	SMDJ18CA	PET	DET	20	22.1	1	18	1	102.7	29.2
SMDJ20A	SMDJ20CA	PEV	DEV	22.2	24.5	1	20	1	92.6	32.4
SMDJ22A	SMDJ22CA	PEX	DEX	24.4	26.9	1	22	1	84.5	35.5
SMDJ24A	SMDJ24CA	PEZ	DEZ	26.7	29.5	1	24	1	77.1	38.9
SMDJ26A	SMDJ26CA	PFE	DFE	28.9	31.9	1	26	1	71.3	42.1
SMDJ28A	SMDJ28CA	PFG	DFG	31.1	34.4	1	28	1	66.1	45.4
SMDJ30A	SMDJ30CA	PFK	DFK	33.3	36.8	1	30	1	62.0	48.4
SMDJ33A	SMDJ33CA	PFM	DFM	36.7	40.6	1	33	1	56.3	53.3
SMDJ36A	SMDJ36CA	PFP	DFP	40	44.2	1	36	1	51.6	58.1
SMDJ40A	SMDJ40CA	PFR	DFR	44.4	49.1	1	40	1	46.5	64.5
SMDJ43A	SMDJ43CA	PFT	DFT	47.8	52.8	1	43	1	43.2	69.4
SMDJ45A	SMDJ45CA	PFV	DFV	50.0	55.3	1	45	1	41.3	72.7
SMDJ48A	SMDJ48CA	PFX	DFX	53.3	58.9	1	48	1	38.8	77.4
SMDJ51A	SMDJ51CA	PFZ	DFZ	56.7	62.7	1	51	1	36.4	82.4
SMDJ54A	SMDJ54CA	PGE	DGE	60.0	66.3	1	54	1	34.4	87.1
SMDJ58A	SMDJ58CA	PGG	DGG	64.4	71.2	1	58	1	32.1	93.6
SMDJ60A	SMDJ60CA	PGK	DGK	66.7	73.7	1	60	1	31.0	96.8
SMDJ64A	SMDJ64CA	PGM	DGM	71.1	78.6	1	64	1	29.1	103
SMDJ70A	SMDJ70CA	PGP	DGP	77.8	86	1	70	1	26.5	113
SMDJ75A	SMDJ75CA	PGR	DGR	83.3	92.1	1	75	1	24.8	121
SMDJ78A	SMDJ78CA	PGT	DGT	86.7	95.8	1	78	1	23.8	126
SMDJ85A	SMDJ85CA	PGV	DGV	94.4	104	1	85	1	21.9	137
SMDJ90A	SMDJ90CA	PGX	DGX	100	111	1	90	1	20.5	146
SMDJ100A	SMDJ100CA	PGZ	DGZ	111	123	1	100	1	18.5	162

Notes:

1. V_{BR} measure after I_T applied for 300μs, 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.

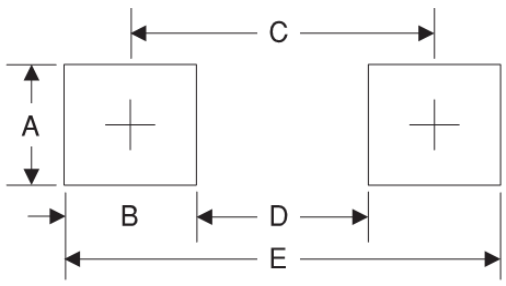
PACKAGE OUTLINE DIMENSIONS

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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