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600W, 10V - 30V 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
- 600 watts peak pulse power capability with a 10 / 1000 μ s waveform
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21


DO-214AC (SMA)


MECHANICAL DATA

Case: DO-214AC (SMA)

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

Polarity: Indicated by cathode band

Weight: 0.06 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}	600	W
Steady state power dissipation	P_D	4	W
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50	A
Typical thermal resistance	$R_{\theta JA}$	56	$^\circ\text{C/W}$
	$R_{\theta JL}$	20	
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

ORDERING INFORMATION

PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
SMA6JxxA (Note 1, 2)	H	R3	G	SMA	1,800 / 7" Plastic reel
		R2		SMA	7,500 / 13" Paper reel
		M2		SMA	7,500 / 13" Plastic reel

Note 1: "xx" defines voltage from 10V (SMA6J10A) to 30V (SMA6J30A)

Note 2: Whole series with green compound

EXAMPLE

EXAMPLE P/N	PART NO.	PART NO. SUFFIX	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SMA6J10AHR3G	SMAJ26A	H	R3	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

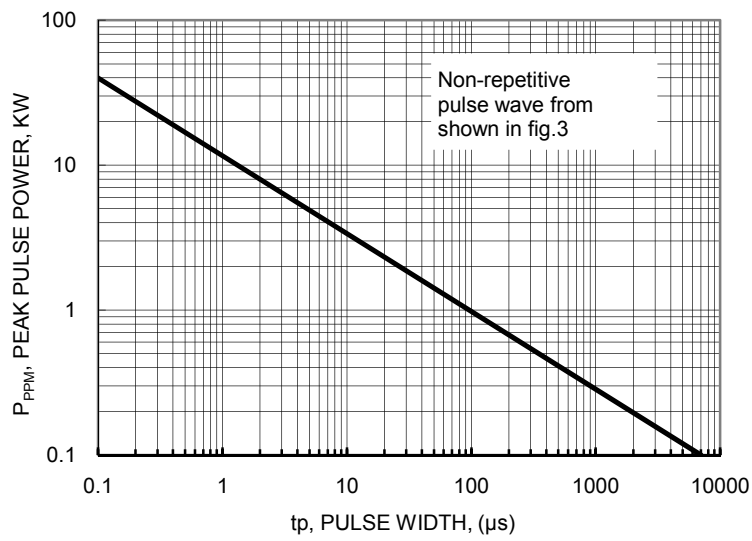


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

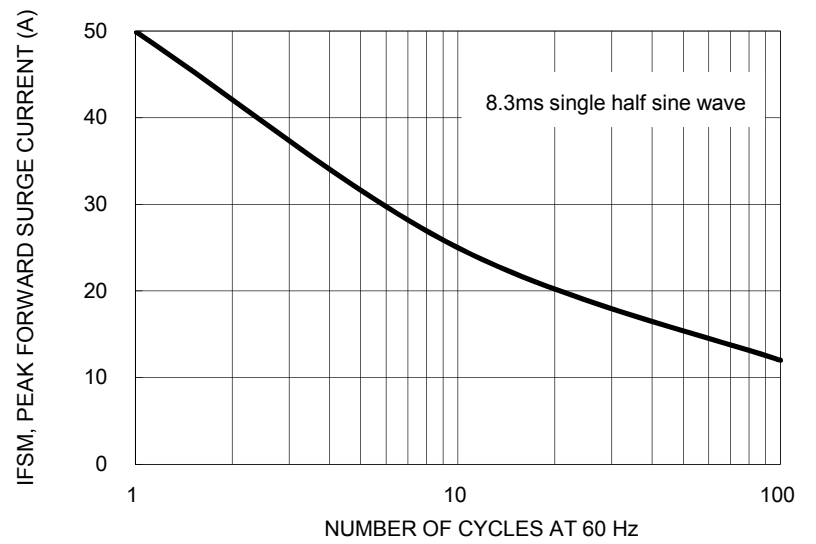


FIG. 3 CLAMPING POWER PULSE WAVEFORM

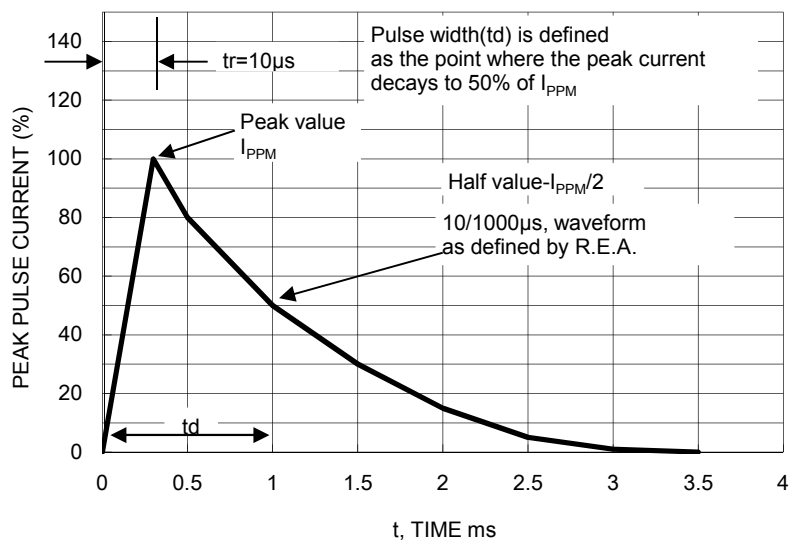
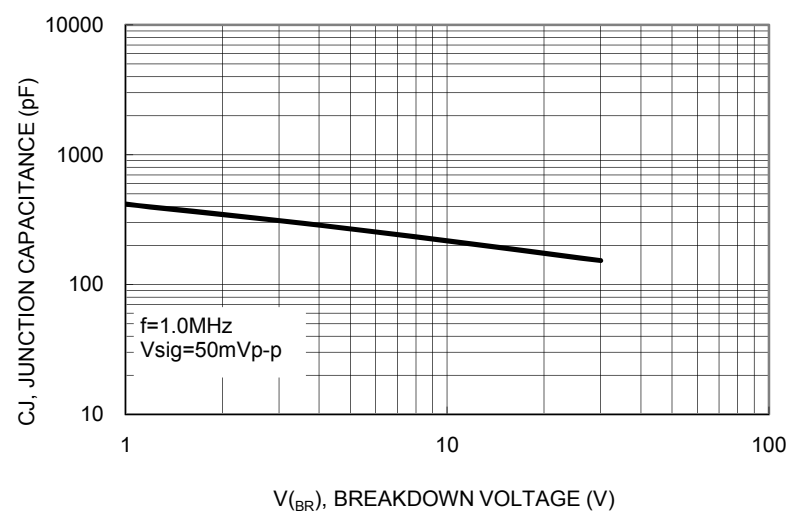
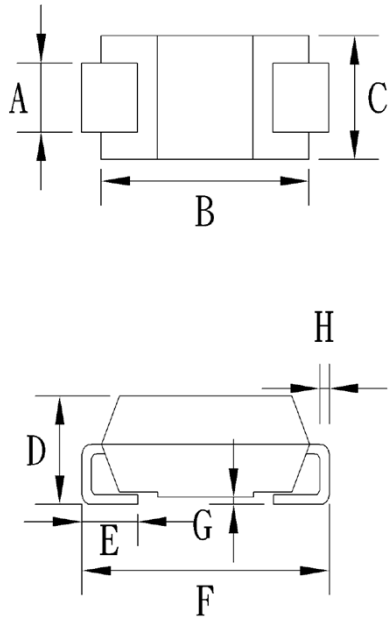


FIG. 4 TYPICAL JUNCTION CAPACITANCE



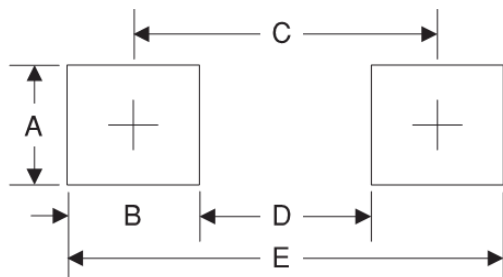
Device	Device Marking Code	Working Peak Reverse Voltage V_{WM} (V)	Breakdown Voltage V_{BR} (V) at I_T		Test Current I_T (mA)	Maximum Clamping Voltage at I_{PPM} V_c (V)	Maximum Peak Pulse Surge Current I_{PPM} (A)	Maximum Reverse Leakage @ V_{WM} I_D (μ A)
			Min	Max				
SMA6J10A	6AX	10	11.1	12.3	1	15.7	38.2	5.0
SMA6J11A	6AZ	11	12.2	13.5	1	17.2	34.8	5.0
SMA6J12A	6BE	12	13.3	14.7	1	18.8	31.9	1.0
SMA6J13A	6BG	13	14.4	15.9	1	20.4	29.4	1.0
SMA6J15A	6BM	15	16.7	18.5	1	23.6	25.4	1.0
SMA6J16A	6BP	16	17.8	19.7	1	25.2	23.8	1.0
SMA6J17A	6BR	17	18.9	20.9	1	26.7	22.5	1.0
SMA6J18A	6BT	18	20	22.1	1	28.3	21.2	1.0
SMA6J20A	6BV	20	22.2	24.5	1	31.4	19.1	1.0
SMA6J22A	6BX	22	24.4	26.9	1	34.5	17.4	1.0
SMA6J24A	6BZ	24	26.7	29.5	1	37.8	15.9	1.0
SMA6J26A	6CE	26	28.9	31.9	1	40.9	14.7	1.0
SMA6J28A	6CG	28	31.1	34.4	1	44.0	13.6	1.0
SMA6J30A	6CK	30	33.3	36.8	1	48.4	12.3	1.0

PACKAGE OUTLINE DIMENSIONS
DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.27	1.58	0.050	0.062
B	4.06	4.60	0.160	0.181
C	2.29	2.83	0.090	0.111
D	1.99	2.50	0.078	0.098
E	0.90	1.41	0.035	0.056
F	4.95	5.33	0.195	0.210
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	1.68	0.066
B	1.52	0.060
C	3.93	0.155
D	2.41	0.095
E	5.45	0.215

MARKING DIAGRAM



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

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