



### 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
- Typical IR less than 1µA above 10V
- 400 watts peak pulse power capability with a 10 / 1,000 µs waveform (300W above 78V)
- Moisture sensitivity level: level 1, per J-STD-020
- Halogen-free according to IEC 61249-2-21 definition

### Mechanical Data

Case : DO-214AC (SMA)  
 Molding compound  
 Base P/N with suffix "G" on packing code - Green compound (halogen-free)  
 Base P/N with prefix "H" on packing code - AEC-Q101 qualified  
 Terminals : Pure tin plated lead free  
 Polarity : Indicated by cathode band  
 Weight : 0.06 g (approximately)

### Max. Ratings and Electrical Characteristics

(T<sub>A</sub> = 25°C unless otherwise noted)

Type Number	Symbol	Value	Units
Peak Power Dissipation at T <sub>A</sub> = 25°C, T <sub>P</sub> = 1ms (Note 1)	P <sub>PK</sub>	400	Watts
Steady Power Dissipation	P <sub>D</sub>	1	
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	40	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only	V <sub>F</sub>	3.5	Volts
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**Notes :** 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 C or CA suffix for types SMAJ5.0 through types SMAJ188.
2. Electrical characteristics apply in both directions.

## Ordering Information:

Part No.	Aec-Q101 Qualified	Packing Code	Green Compound Code	Package	Packing
SMAJxxxx (Note 1)	Prefix "H"	R3	Suffix "G"	SMA	1,800 / 7" Plastic reel
		R2		SMA	7,500 / 13" Paper reel
		M2		SMA	7,500 / 13" Plastic reel
		F3		Folded SMA	1,800 / 7" Plastic reel
		F2		Folded SMA	7,500 / 13" Paper reel
		F4		Folded SMA	7,500 / 13" Plastic reel
	N/A	E3		Clip SMA	1,800 / 7" Plastic reel
		E2		Clip SMA	7,500 / 13" Plastic reel

Note 1: "xxxx" defines voltage from 5.0V (SMAJ5.0) to 188V (SMAJ188)

## Example:

Preferred P/N	Part No.	AEC-Q101 Qualified	Packing Code	Green Compound Code	Description
SMAJ26A R3	SMAJ26A		R3		
SMAJ26A R3G	SMAJ26A		R3	G	Green compound
SMAJ26AHR3	SMAJ26A	H	R3		AEC-Q101 qualified

## Ratings and Characteristics Curves (T<sub>A</sub> = 25 unless otherwise noted)

FIG. 1 PEAK PULSE POWER RATING CURVE

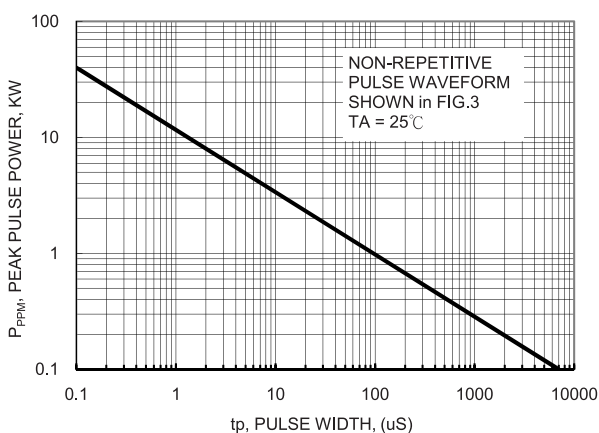


FIG.2 PULSE DERATING CURVE

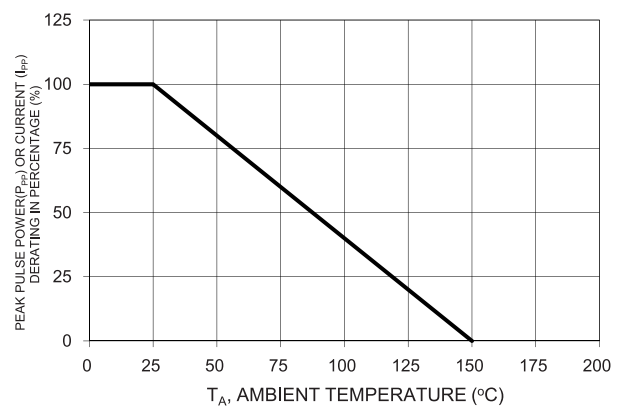


FIG. 3 CLAMPING POWER PULSE WAVEFORM

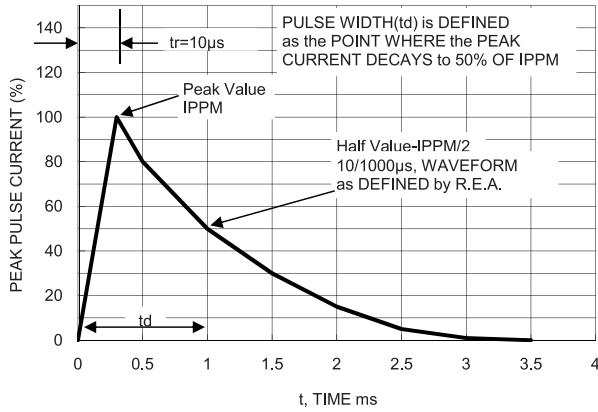


FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

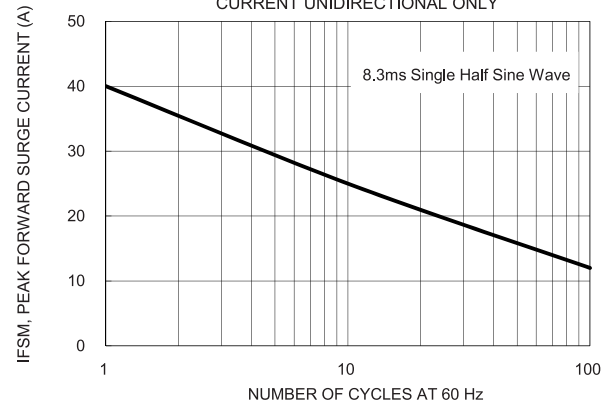
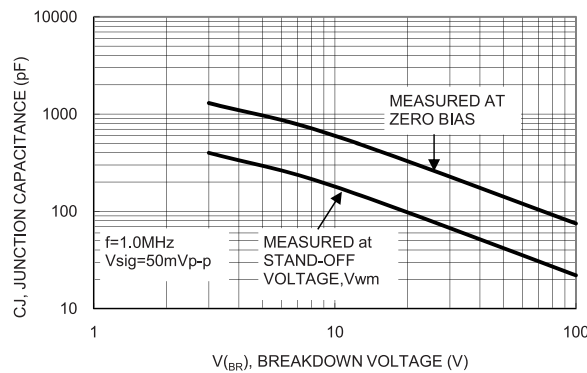


FIG. 5 TYPICAL JUNCTION CAPACITANCE



## Electrical Characteristics (TA = 25°C unless otherwise noted)

Device	Device Marking Code (Note 9)	Working Peak Reverse Voltage V <sub>WM</sub> (Volts)	Breakdown Voltage V <sub>(BR)</sub> (Volts) at I <sub>T</sub>		Test Current at I <sub>T</sub> (mA)	Maximum Clamping Voltage at I <sub>PPM</sub> V <sub>C</sub> (Volts) (Note 5)	Maximum Peak Pulse Surge Current I <sub>PPM</sub> (Note 5) (Amps)	Maximum Reverse Leakage at V <sub>WM</sub> I <sub>D</sub> (µA)
			Minimum	Maximum				
SMAJ5.0A	AE	5	6.4	7	10	9.2	43.5	800
SMAJ6.0A	AG	6	6.67	7.37	10	10.3	38.8	800
SMAJ6.5A	AK	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0A	AM	7	7.78	8.6	10	12.0	33.3	200
SMAJ7.5A	AP	7.5	8.33	9.21	1	12.9	31.0	100
SMAJ8.0A	AR	8	8.89	9.83	1	13.6	29.4	50
SMAJ8.5A	AT	8.5	9.44	10.4	1	14.4	27.8	10

# SMAJ Series



Device	Device Marking Code (Note 9)	Working Peak Reverse Voltage $V_{WM}$ (Volts)	Breakdown Voltage $V_{(BR)}$ (Volts) at $I_T$		Test Current at $I_T$ (mA)	Maximum Clamping Voltage at $I_{PPM} V_C$ (Volts) (Note 5)	Maximum Peak Pulse Surge Current $I_{PPM}$ (Note 5) (Amps)	Maximum Reverse Leakage at $V_{WM}$ ID ( $\mu A$ )
			Minimum	Maximum				
SMAJ9.0A	AV	9	10	11.1	1	15.4	26.0	5
SMAJ10A	AX	10	11.1	12.3	1	17.0	23.5	5
SMAJ11A	AZ	11	12.2	13.5	1	18.2	22.0	1
SMAJ12A	BE	12	13.3	14.7	1	19.9	20.1	1
SMAJ13A	BG	13	14.4	15.9	1	21.5	18.6	1
SMAJ14A	BK	14	15.6	17.2	1	23.2	17.2	1
SMAJ15A	BM	15	16.7	18.5	1	24.4	16.4	1
SMAJ16A	BP	16	17.8	19.7	1	26.0	15.4	1
SMAJ17A	BR	17	18.9	20.9	1	27.6	14.5	1
SMAJ18A	BT	18	20	22.1	1	29.2	13.7	1
SMAJ20A	BV	20	22.2	24.5	1	32.4	12.3	1
SMAJ22A	BX	22	24.4	26.9	1	35.5	11.3	1
SMAJ24A	BZ	24	26.7	29.5	1	38.9	10.3	1
SMAJ26A	CE	26	28.9	31.9	1	42.1	9.5	1
SMAJ28A	CG	28	31.1	34.4	1	45.4	8.8	1
SMAJ30A	CK	30	33.3	36.8	1	48.4	8.3	1
SMAJ33A	CM	33	36.7	40.6	1	53.3	7.5	1
SMAJ36A	CP	36	40	44.2	1	58.1	6.9	1
SMAJ40A	CR	40	44.4	49.1	1	64.5	6.2	1
SMAJ43A	CT	43	47.8	52.8	1	69.4	5.8	1
SMAJ45A	CV	45	50	55.3	1	72.7	5.5	1
SMAJ48A	CX	48	53.3	58.9	1	77.4	5.2	1
SMAJ51A	CZ	51	56.7	62.7	1	82.4	4.9	1
SMAJ54A	RE	54	60	66.3	1	87.1	4.6	1
SMAJ58A	RG	58	64.4	71.2	1	93.6	4.3	1
SMAJ60A	RK	60	66.7	73.7	1	96.8	4.1	1
SMAJ64A	RM	64	71.1	78.6	1	103	3.9	1
SMAJ70A	RP	70	77.8	86	1	113	3.5	1
SMAJ75A	RR	75	83.3	92.1	1	121	3.3	1
SMAJ78A	RT	78	86.7	95.8	1	126	3.2	1
SMAJ85A	RV	85	94.4	104	1	137	2.2	1
SMAJ90A	RX	90	100	111	1	146	2.1	1
SMAJ100A	RZ	100	111	123	1	162	1.9	1



# SMAJ Series



Device	Device Marking Code (Note 9)	Working Peak Reverse Voltage $V_{WM}$ (Volts)	Breakdown Voltage $V_{(BR)}$ (Volts) at $I_T$		Test Current at $I_T$ (mA)	Maximum Clamping Voltage at $I_{PPM} V_C$ (Volts) (Note 5)	Maximum Peak Pulse Surge Current $I_{PPM}$ (Note 5) (Amps)	Maximum Reverse Leakage at $V_{WM}$ ID ( $\mu A$ )
			Minimum	Maximum				
SMAJ110A	SE	110	122	135	1	177	1.7	1
SMAJ120A	SG	120	133	147	1	193	1.6	1
SMAJ130A	SK	130	144	159	1	209	1.5	1
SMAJ150A	SM	150	167	185	1	243	1.3	1
SMAJ160A	SP	160	178	197	1	259	1.2	1
SMAJ170A	SR	170	189	209	1	275	1.1	1
SMAJ188A	SS	188	209	231	1	328	0.91	1
SMAJ5.0CA	AE	5	6.4	7	10	9.2	43.5	800
SMAJ6.0CA	AG	6	6.67	7.37	10	10.3	38.8	800
SMAJ6.5CA	AK	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0CA	AM	7	7.78	8.6	10	12.0	33.3	200
SMAJ7.5CA	AP	7.5	8.33	9.21	1	12.9	31.0	100
SMAJ8.0CA	AR	8	8.89	9.83	1	13.6	29.4	50
SMAJ8.5CA	AT	8.5	9.44	10.4	1	14.4	27.8	10
SMAJ9.0CA	AV	9	10	11.1	1	15.4	26.0	5
SMAJ10CA	AX	10	11.1	12.3	1	17.0	23.5	5
SMAJ11CA	AZ	11	12.2	13.5	1	18.2	22.0	1
SMAJ12CA	BE	12	13.3	14.7	1	19.9	20.1	1
SMAJ13CA	BG	13	14.4	15.9	1	21.5	18.6	1
SMAJ14CA	BK	14	15.6	17.2	1	23.2	17.2	1
SMAJ15CA	BM	15	16.7	18.5	1	24.4	16.4	1
SMAJ16CA	BP	16	17.8	19.7	1	26.0	15.4	1
SMAJ17CA	BR	17	18.9	20.9	1	27.6	14.5	1
SMAJ18CA	BT	18	20	22.1	1	29.2	13.7	1
SMAJ20CA	BV	20	22.2	24.5	1	32.4	12.3	1
SMAJ22CA	BX	22	24.4	26.9	1	35.5	11.3	1
SMAJ24CA	BZ	24	26.7	29.5	1	38.9	10.3	1
SMAJ26CA	CE	26	28.9	31.9	1	42.1	9.5	1
SMAJ28CA	CG	28	31.1	34.4	1	45.4	8.8	1
SMAJ30CA	CK	30	33.3	36.8	1	48.4	8.3	1
SMAJ33CA	CM	33	36.7	40.6	1	53.3	7.5	1
SMAJ36CA	CP	36	40	44.2	1	58.1	6.9	1
SMAJ40CA	CR	40	44.4	49.1	1	64.5	6.2	1



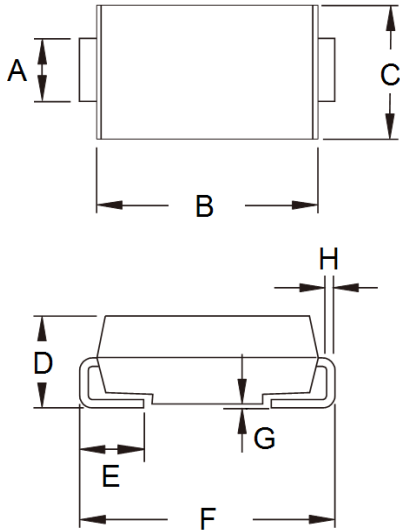
Device	Device Marking Code (Note 9)	Working Peak Reverse Voltage $V_{WM}$ (Volts)	Breakdown Voltage $V_{(BR)}$ (Volts) at $I_T$		Test Current at $I_T$ (mA)	Maximum Clamping Voltage at $I_{PPM} V_C$ (Volts) (Note 5)	Maximum Peak Pulse Surge Current $I_{PPM}$ (Note 5) (Amps)	Maximum Reverse Leakage at $V_{WM}$ ID ( $\mu A$ )
			Minimum	Maximum				
SMAJ43CA	CT	43	47.8	52.8	1	69.4	5.8	1
SMAJ45CA	CV	45	50	55.3	1	72.7	5.5	1
SMAJ48CA	CX	48	53.3	58.9	1	77.4	5.2	1
SMAJ51CA	CZ	51	56.7	62.7	1	82.4	4.9	1
SMAJ54CA	RE	54	60	66.3	1	87.1	4.6	1
SMAJ58CA	RG	58	64.4	71.2	1	93.6	4.3	1
SMAJ60CA	RK	60	66.7	73.7	1	96.8	4.1	1
SMAJ64CA	RM	64	71.1	78.6	1	103	3.9	1
SMAJ70CA	RP	70	77.8	86	1	113	3.5	1
SMAJ75CA	RR	75	83.3	92.1	1	121	3.3	1
SMAJ78CA	RT	78	86.7	95.8	1	126	3.2	1
SMAJ85CA	RV	85	94.4	104	1	137	2.2	1
SMAJ90CA	RX	90	100	111	1	146	2.1	1
SMAJ100CA	RZ	100	111	123	1	162	1.9	1
SMAJ110CA	SE	110	122	135	1	177	1.7	1
SMAJ120CA	SG	120	133	147	1	193	1.6	1
SMAJ130CA	SK	130	144	159	1	209	1.5	1
SMAJ150CA	SM	150	167	185	1	243	1.3	1
SMAJ160CA	SP	160	178	197	1	259	1.2	1
SMAJ170CA	SR	170	189	209	1	275	1.1	1
SMAJ188CA	SS	188	209	231	1	328	0.91	1

**Notes:**

1. Suffix A = Unidirectional
2. Suffix CA = Bidirectional
3. Non-repetitive current pulse and derated above  $T_A = 25^\circ C$ .
4. Mounted on 5mm<sup>2</sup> copper pads to each terminal.
5. Lead temperature at  $T_L = 75^\circ C$ .
6. Measured on 8.3ms single half sine-wave duty cycle = 4 pulses per minutes max.
7. Peak pulse power waveform is 10/1000 us.
8. For bi-directional devices having  $V_R$  of 10 volts and under, the IR limit is double.
9. Cathode band marking on device for Uni-Directional parts , blank for Bi-Directional

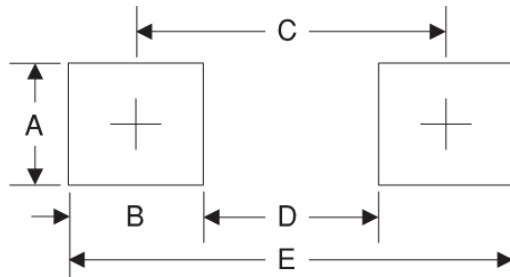
## Dimensions

DO-214AC (SMA)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.27	1.58	0.05	0.062
B	4.06	4.6	0.16	0.181
C	2.29	2.83	0.09	0.111
D	1.99	2.5	0.078	0.098
E	0.9	1.41	0.035	0.056
F	4.95	5.33	0.195	0.21
G	0.1	0.2	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	0.06
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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