



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 1 μ A above 10V
- 400 watts peak pulse power capability with a 10 / 1,000 μ s 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_A = 25°C unless otherwise noted)

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

Notes : Note 1: Non-repetitive Current Pulse Per Fig. 3 and Derated above T_A = 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_A = 25 unless otherwise noted)

FIG. 1 PEAK PULSE POWER RATING CURVE

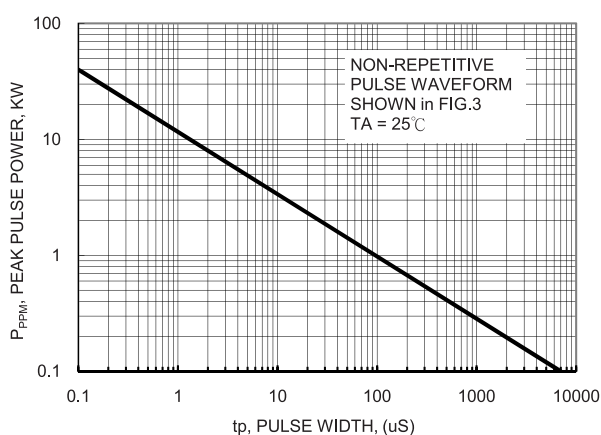


FIG.2 PULSE DERATING CURVE

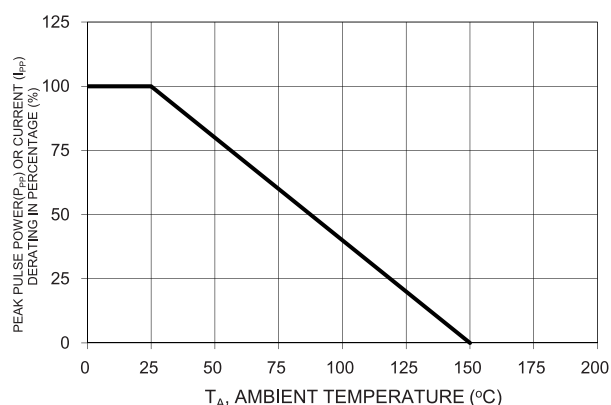


FIG. 3 CLAMPING POWER PULSE WAVEFORM

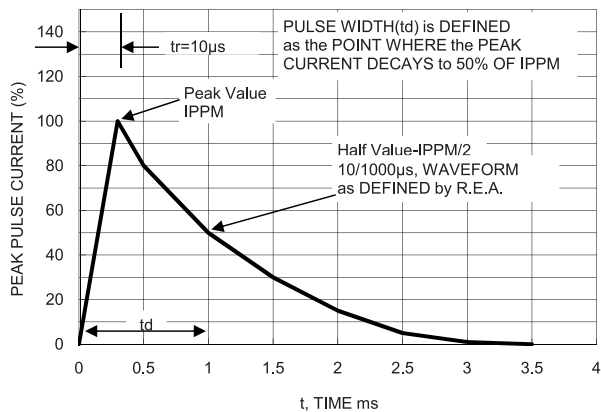


FIG. 4 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

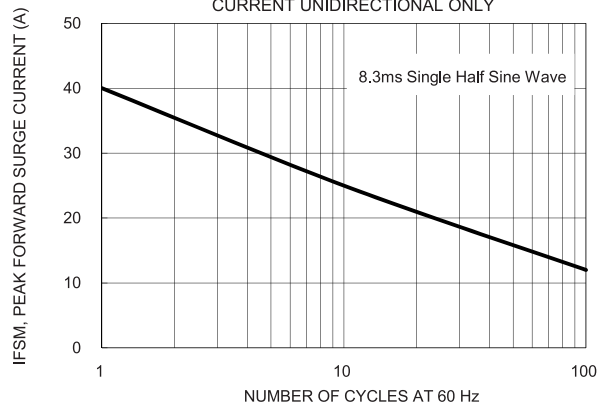
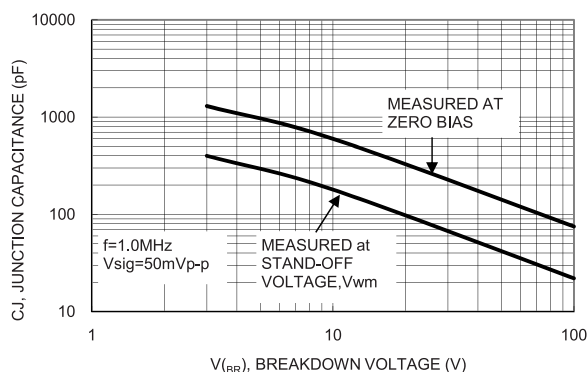


FIG. 5 TYPICAL JUNCTION CAPACITANCE



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

Device	Device Marking Code (Note 9)	Working Peak Reverse Voltage VWM (Volts)	Breakdown Voltage V(BR) (Volts) at IT		Test Current at IT (mA)	Maximum Clamping Voltage at IPPM VC (Volts) (Note 5)	Maximum Peak Pulse Surge Current IPPM (Note 5) (Amps)	Maximum Reverse Leakage at VWM ID (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 (μA)
			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 (μA)
			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

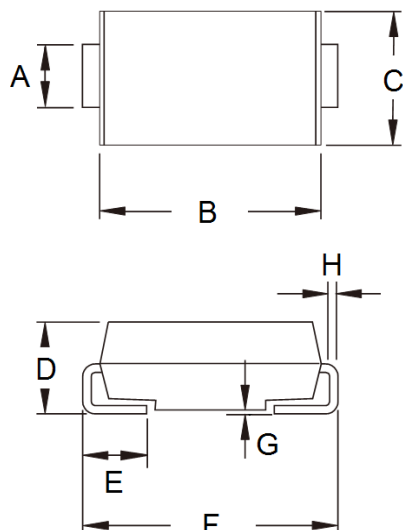
Device	Device Marking Code (Note 9)	Working Peak Reverse Voltage V_{WM} (Volts)	Breakdown Voltage $V_{(BR)}$ (Volts) at I_T		Test Current at I_T (mA)	Maximum Clamping Voltage at $I_{PPM} V_C$ (Volts) (Note 5)	Maximum Peak Pulse Surge Current I_{PPM} (Note 5) (Amps)	Maximum Reverse Leakage at V_{WM} ID (μA)
			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 5mm² 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 I_R limit is double.
9. Cathode band marking on device for Uni-Directional parts , blank for Bi-Directional

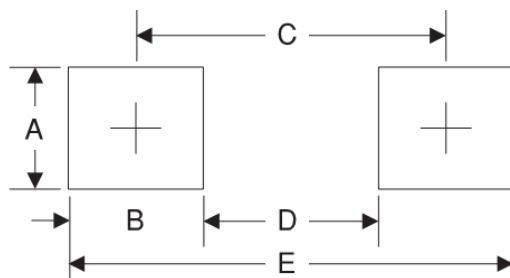
Dimensions

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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