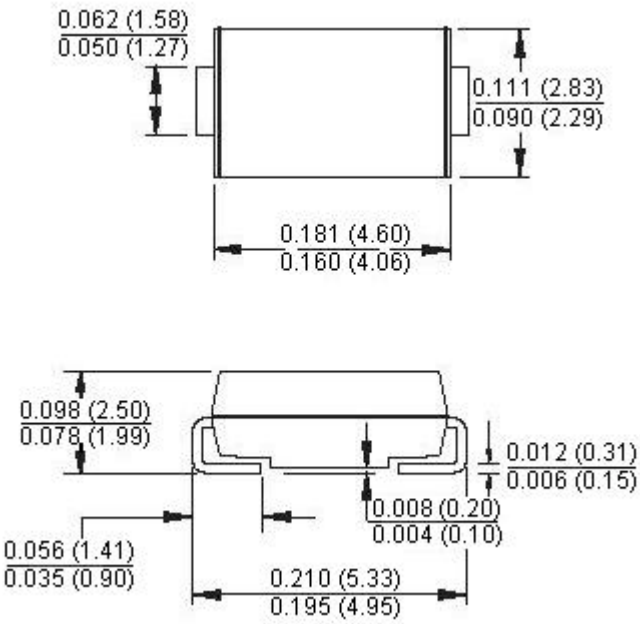
SMAJ Series

Features:

- For surface mounted application.
- Low profile package.
- Built-in strain relief.
- Glass passivated junction.
- Excellent clamping capability.
- Fast response time: typically less than 1.0ps from 0 volt to BV minimum.
- Typical I_R less than 1µA above 10V.
- High temperature soldering guaranteed: 260°C/10 seconds at terminals.
- Plastic material.
- 400 watts peak pulse power capability with a 10 x 1000µs waveform by 0.01% duty cycle (300W above 78V).

SMA/DO-214AC



Dimensions : Inches (Millimetres)

Mechanical Data

Case	: Molded plastic.
Terminals	: Pure tin plated lead free.
Polarity	: Indicated by cathode band.
Standard packaging	: 12mm tape (EIA STD RS-481).
Weight	: 0.064 gram.

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

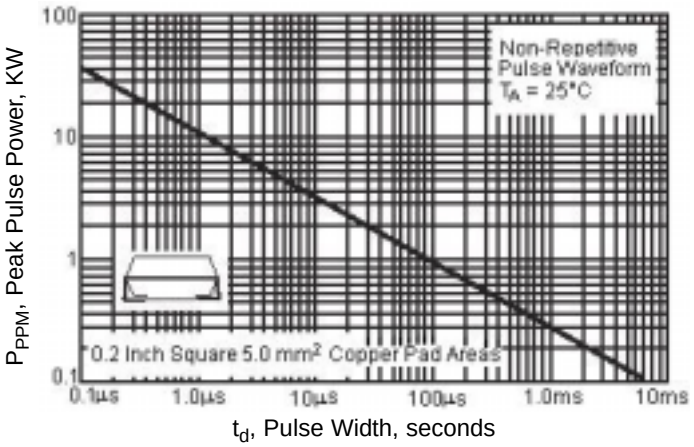
Type Number	Symbol	Value	Units
Peak Power Dissipation at T_A = 25°C, T_p = 1ms (Note 1)	P_{PK}	Minimum 400	Watts
Steady State Power Dissipation	P_d	1	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3)	I_{FSM}	40.0	Amps
Maximum Instantaneous Forward Voltage at 25.0A for Unidirectional Only	V_F	3.5	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C

Notes: 1. Non-repetitive current pulse and derated above T_A = 25°C.
2. Mounted on 5.0mm² (0.013mm thick) copper pads to each terminal.
3. 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum.

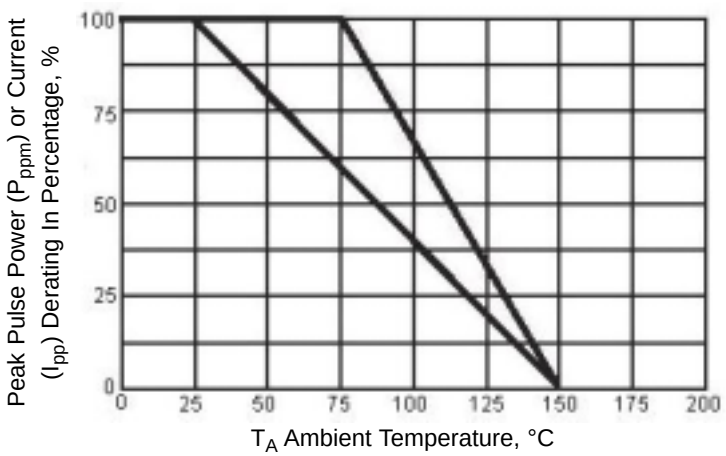
Devices for bipolar applications
1. For bidirectional use C or CA suffix for types SMAJ5.0 through types SMAJ188.
2. Electrical characteristics apply in both directions.

Ratings and Characteristic Curves

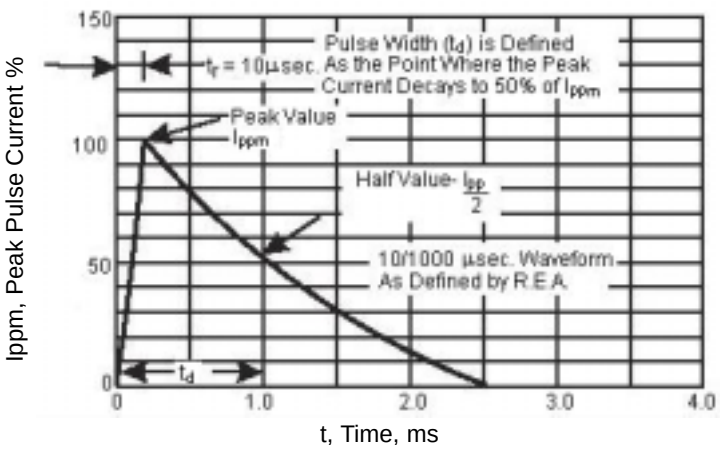
Peak Pulse Power Rating Curve



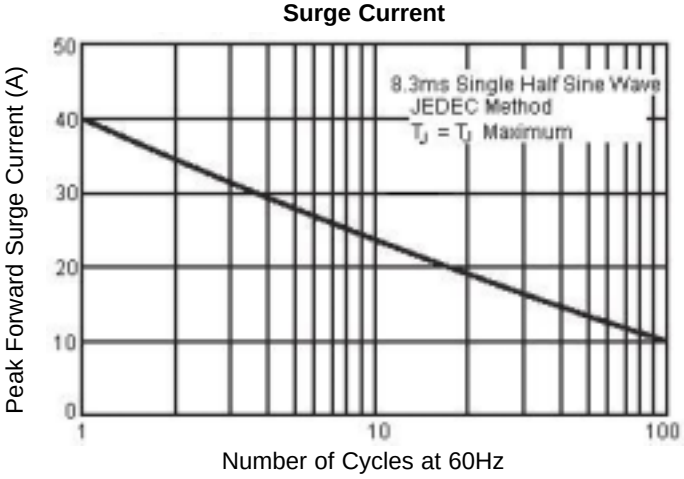
Pulse Derating Curve



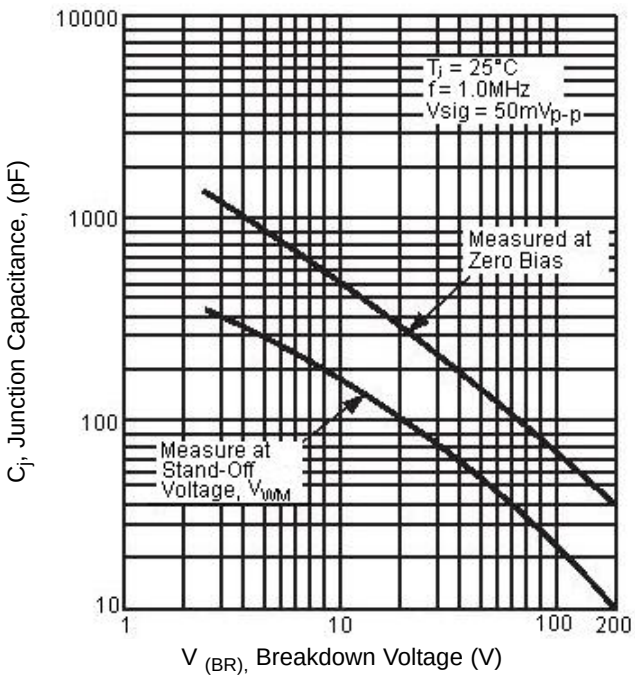
Clamping Power Pulse Waveform



Maximum Non-Repetitive Peak Forward Surge Current



Typical Junction Capacitance



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

Device		Device Marking Code	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} I_D (µA)
Unidirectional	Bidirectional			Minimum	Maximum				
SMAJ100A	SMAJ100CA	RZ	100.0	111.0	123.0	1.0	162.0	1.9	5.0
SMAJ10A	SMAJ10CA	AX	10.0	11.1	12.3		17.0	23.5	
SMAJ110A	SMAJ110CA	SE	110.0	122.0	135.0		177.0	1.7	
SMAJ11A	SMAJ11CA	AZ	11.0	12.2	13.5		18.2	22.0	
SMAJ120A	SMAJ120CA	SG	120.0	133.0	147.0		193.0	1.6	
SMAJ12A	SMAJ12CA	BE	12.0	13.3	14.7		19.9	20.1	
SMAJ130A	SMAJ130CA	SK	130.0	144.0	159.0		209.0	1.5	
SMAJ13A	SMAJ13CA	BG	13.0	14.4	15.9		21.5	18.6	
SMAJ150A	SMAJ150CA	SM	150.0	167.0	185.0		243.0	1.3	
SMAJ15A	SMAJ15CA	BM	15.0	16.7	18.5		24.4	16.4	
SMAJ160A	SMAJ160CA	SP	160.0	178.0	197.0		259.0	1.2	
SMAJ16A	SMAJ16CA	BP	16.0	17.8	19.7		26.0	15.4	
SMAJ170A	SMAJ170CA	SR	170.0	189.0	209.0		275.0	1.1	
SMAJ18A	SMAJ18CA	BT	18.0	20.0	22.1		29.2	13.7	
SMAJ20A	SMAJ20CA	BV	20.0	22.2	24.5		32.4	12.3	

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

Device		Device Marking Code	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} I_D (µA)
Unidirectional	Bidirectional			Minimum	Maximum				
SMAJ22A	SMAJ22CA	BX	22.0	24.4	26.9	1.0	35.5	11.3	5.0
SMAJ24A	SMAJ24CA	BZ	24.0	26.7	29.5		38.9	10.3	
SMAJ26A	SMAJ26CA	CE	26.0	28.9	31.9		42.1	9.5	
SMAJ28A	SMAJ28CA	CG	28.0	31.1	34.4		45.4	8.8	
SMAJ30A	SMAJ30CA	CK	30.0	33.3	36.8		48.4	8.3	
SMAJ33A	SMAJ33CA	CM	33.0	36.7	40.6		53.3	7.5	
SMAJ36A	SMAJ36CA	CP	36.0	40.0	44.2		58.1	6.9	
SMAJ40A	SMAJ40CA	CR	40.0	44.4	49.1		64.5	6.2	
SMAJ43A	SMAJ43CA	CT	43.0	47.8	52.8		69.4	5.8	
SMAJ45A	SMAJ45CA	CV	45.0	50.0	55.3		72.7	5.5	
SMAJ48A	SMAJ48CA	CX	48.0	53.3	58.9		77.4	5.2	
SMAJ5.0A	SMAJ5.0CA	AE	5.0	6.40	7.00	10.0	9.2	43.5	800.0
SMAJ51A	SMAJ51CA	CZ	51.0	56.7	62.7	1.0	82.4	4.9	5.0
SMAJ54A	SMAJ54CA	RE	54.0	60.0	66.3		87.1	4.6	
SMAJ58A	SMAJ58CA	RG	58.0	64.4	71.2		93.6	4.3	
SMAJ6.0A	SMAJ6.0CA	AG	6.0	6.67	7.37	10.0	10.3	38.8	800.0
SMAJ6.5A	SMAJ6.5CA	AK	6.5	7.22	7.98	10.0	11.2	35.7	500.0
SMAJ60A	SMAJ60CA	RK	60.0	66.7	73.7	1.0	96.8	4.1	5.0
SMAJ64A	SMAJ64CA	RM	64.0	71.1	78.6		103.0	3.9	
SMAJ7.0A	SMAJ7.0CA	AM	7.0	7.78	8.60	10.0	12.0	33.3	200.0
SMAJ7.5A	SMAJ7.5CA	AP	7.5	8.33	9.21	1.0	12.9	31.0	100.0
SMAJ75A	SMAJ75CA	RR	75.0	83.3	92.1		121.0	3.3	5.0
SMAJ78A	SMAJ78CA	RT	78.0	86.7	95.8		126.0	3.2	
SMAJ8.5A	SMAJ8.5CA	AT	8.5	9.44	10.4		14.4	27.8	10.0
SMAJ85A	SMAJ85CA	RV	85.0	94.4	104		137.0	2.2	5.0
SMAJ9.0A	SMAJ9.0CA	AV	9.0	10.0	11.1		15.4	26.0	

Notes:

1. Non-repetitive current pulse and derated above T_A = 25°C.
2. Mounted on 5.0mm^2 copper pads to each terminal.
3. Lead temperature at T_L = 75°C.
4. Measured on 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.
5. Peak pulse power waveform is 10/1000 us.
6. For bi-directional devices having V_R of 10 volts and under, the I_R limit is double.

Notes:

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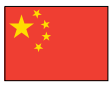

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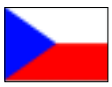

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