



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 1 μ A above 10V
- High temperature soldering guaranteed : 260°C/10 seconds at terminals.
- Plastic material
- 400 watts peak pulse power capability with a 10 × 1000 μ s waveform by 0.01% duty cycle (300W above 78V)

Mechanical Data

Case	: Moulded plastic
Terminals	: Pure tin plated lead free
Polarity	: Cathode band marking on device for Uni-Directional parts ('A'), blank for Bi-Directional ('CA')
Standard Packaging	: 12mm tape (EIA STD RS-481)
Weight	: 0.064 gram

Max. Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at $T_A = 25^\circ\text{C}$, $T_P = 1\text{ms}$ (Note 1)	P_{PK}	400 (Min.)	Watts
Steady 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	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 : 1. Non-repetitive current pulse and derated above $T_A = 25^\circ\text{C}$.
2. Mounted on 5mm² (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 Characteristics Curves ($T_A = 25$ unless otherwise noted)

Fig. 1 - Peak Pulse Power Rating

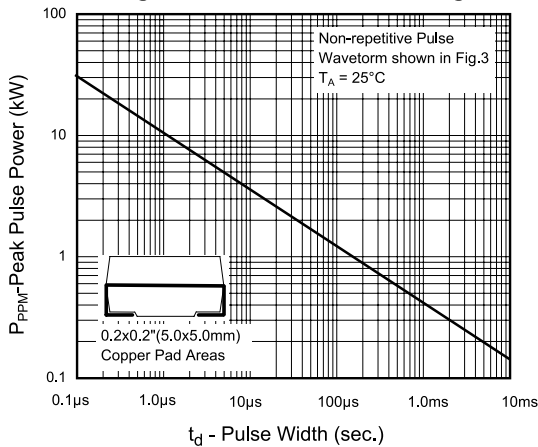


Fig.2 - Pulse Derating Curve

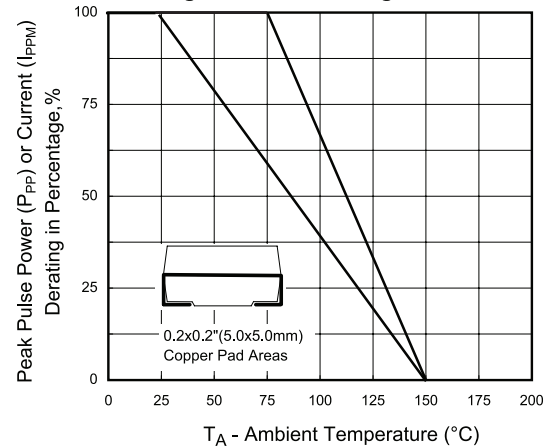


Fig.3 - Pulse Waveform

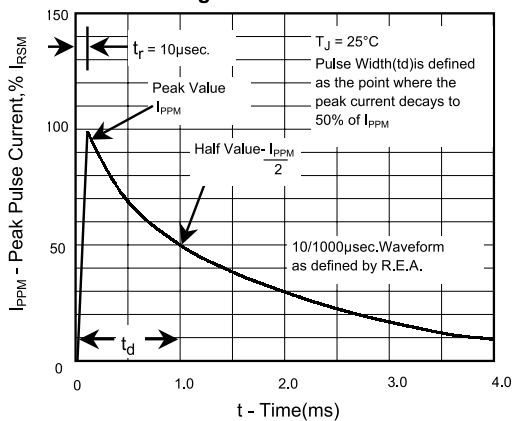


FIG. 4 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL

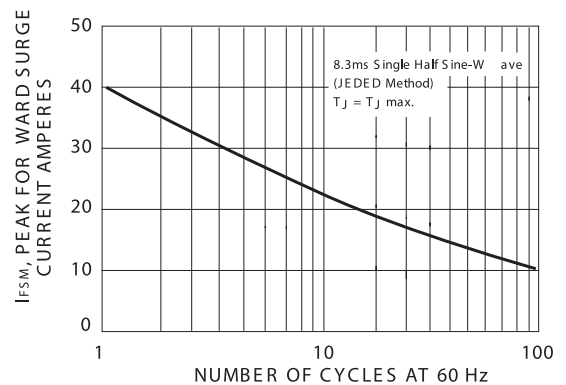
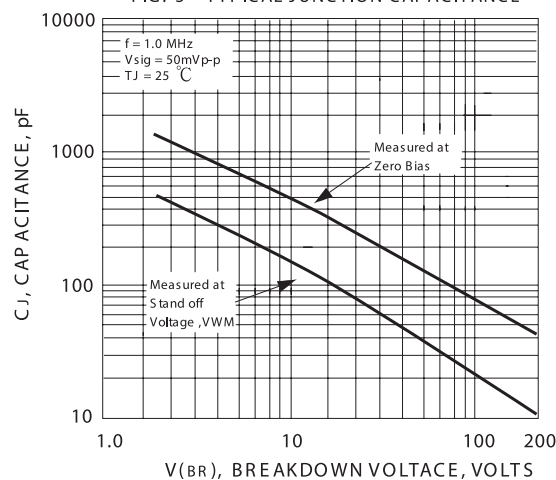
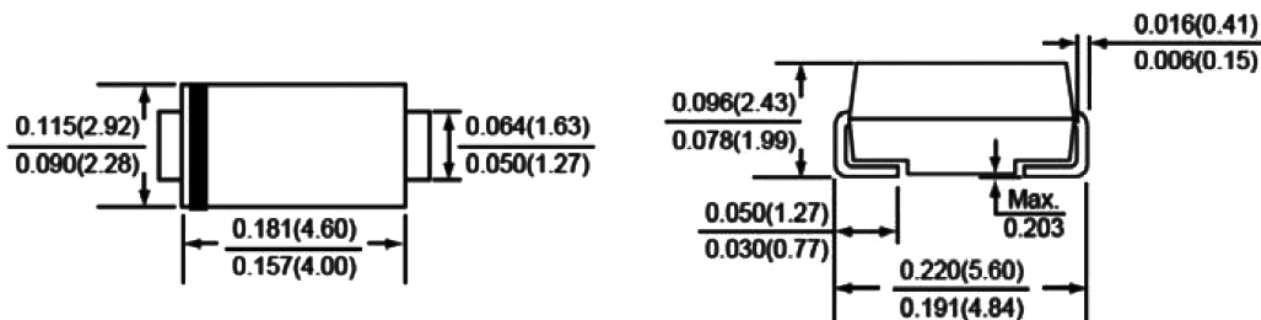


FIG. 5 - TYPICAL JUNCTION CAPACITANCE



Dimensions

SMA/DO-214AC



Dimensions : Inches (Millimetres)

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

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} I _D (µA)
			Minimum	Maximum				
SMAJ22A	BW	22	24.4	29.8	1	39.4	10.2	5
SMAJ24A	BY	24	26.7	32.6		43	9.3	
SMAJ26A	CD	26	28.9	35.3		46.6	8.6	
SMAJ28A	CF	28	31.1	38		50	8	
SMAJ30A	CH	30	33.3	40.7		53.5	7.5	
SMAJ33A	CL	33	36.7	44.9		59	6.8	
SMAJ36A	CN	36	40	48.9		64.3	6.2	
SMAJ40A	CQ	40	44.4	54.3		71.4	5.6	
SMAJ43A	CS	43	47.8	58.4		76.7	5.2	
SMAJ45A	CU	45	50	61.1		80.3	5	
SMAJ48A	CW	48	53.3	65.1	10	85.5	4.7	800
SMAJ5.0A	AD	5	6.4	7.3		9.6	41.7	
SMAJ51A	CY	51	56.7	69.3	1	91.1	4.4	5
SMAJ54A	RD	54	60	73.3		96.3	4.2	
SMAJ58A	RF	58	64.4	78.7		103	3.9	
SMAJ6.0A	AF	6	6.67	8.15	10	11.4	35.1	800
SMAJ6.5A	AH	6.5	7.22	8.82		12.3	32.5	500

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				
SMAJ60A	RH	60	66.7	81.5	1	107	3.7	5
SMAJ64A	RL	64	71.1	86.9		114	3.5	
SMAJ7.0A	AL	7	7.78	9.51	10	13.3	30.1	200
SMAJ7.5A	AN	7.5	8.33	10.3	1	14.3	28	100
SMAJ75A	RQ	75	83.3	102		134	3	5
SMAJ78A	RS	78	86.7	106		139	2.9	
SMAJ8.5A	AS	8.5	9.44	11.5		15.9	25.2	10
SMAJ85A	RU	85	94.4	115		151	2	5
SMAJ9.0A	AU	9	10	12.2		16.9	23.7	
SMAJ100A	RY	100	111	136		179	1.7	
SMAJ10A	AW	10	11.1	13.6		18.8	21.3	
SMAJ110A	SD	110	122	149		196	1.6	
SMAJ11A	AY	11	12.2	14.9		20.1	19.9	
SMAJ120A	SF	120	133	163		214	1.4	
SMAJ12A	BD	12	13.3	16.3		22	18.2	
SMAJ130A	SH	130	144	176		231	1.3	
SMAJ13A	BF	13	14.4	17.6		23.8	16.8	
SMAJ150A	SL	150	167	204		266	1.1	
SMAJ15A	BL	15	16.7	20.4		26.9	14.9	
SMAJ160A	SN	160	178	218		287	1	
SMAJ16A	BN	16	17.8	21.8		28.8	13.9	
SMAJ170A	SQ	170	189	231		304	1	
SMAJ18A	BS	18	20	24.4		32.2	12.4	
SMAJ20A	BU	20	22.2	27.1		35.8	11.2	
SMAJ22CA	BX	22	24.4	26.9		35.5	11.3	
SMAJ24CA	BZ	24	26.7	29.5		38.9	10.3	
SMAJ26CA	CE	26	28.9	31.9		42.1	9.5	
SMAJ28CA	CG	28	31.1	34.4		45.4	8.8	
SMAJ30CA	CK	30	33.3	36.8		48.4	8.3	
SMAJ33CA	CM	33	36.7	40.6		53.3	7.5	
SMAJ36CA	CP	36	40	44.2		58.1	6.9	

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				
SMAJ40CA	CR	40	44.4	49.1	1	64.5	6.2	5
SMAJ43CA	CT	43	47.8	52.8		69.4	5.8	
SMAJ45CA	CV	45	50	55.3		72.7	5.5	
SMAJ48CA	CX	48	53.3	58.9		77.4	5.2	
SMAJ5.0CA	AE	5	6.4	7	10	9.2	43.5	800
SMAJ51CA	CZ	51	56.7	62.7	1	82.4	4.9	5
SMAJ54CA	RE	54	60	66.3		87.1	4.6	
SMAJ58CA	RG	58	64.4	71.2		93.6	4.3	
SMAJ6.0CA	AG	6	6.67	7.37	10	10.3	38.8	800
SMAJ6.5CA	AK	6.5	7.22	7.98		11.2	35.7	500
SMAJ60CA	RK	60	66.7	73.7	1	96.8	4.1	5
SMAJ64CA	RM	64	71.1	78.6		103	3.9	
SMAJ7.0CA	AM	7	7.78	8.6	10	12	33.3	200
SMAJ7.5CA	AP	7.5	8.33	9.21	1	12.9	31	100
SMAJ75CA	RR	75	83.3	92.1		121	3.3	5
SMAJ78CA	RT	78	86.7	95.8		126	3.2	
SMAJ8.5CA	AT	8.5	9.44	10.4		14.4	27.8	10
SMAJ85CA	RV	85	94.4	104		137	2.2	5
SMAJ9.0CA	AV	9	10	11.1		15.4	26	
SMAJ100CA	RZ	100	111	123		162	1.9	
SMAJ10CA	AX	10	11.1	12.3		17	23.5	
SMAJ110CA	SE	110	122	135		177	1.7	
SMAJ11CA	AZ	11	12.2	13.5		18.2	22	
SMAJ120CA	SG	120	133	147		193	1.6	
SMAJ12CA	BE	12	13.3	14.7		19.9	20.1	
SMAJ130CA	SK	130	144	159		209	1.5	
SMAJ13CA	BG	13	14.4	15.9		21.5	18.6	
SMAJ150CA	SM	150	167	185		243	1.3	
SMAJ15CA	BM	15	16.7	18.5		24.4	16.4	
SMAJ160CA	SP	160	178	197		259	1.2	

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} I_D (μA)
			Minimum	Maximum				
SMAJ16CA	BP	16	17.8	19.7	1	26	15.4	5
SMAJ170CA	SR	170	189	209		275	1.1	
SMAJ18CA	BT	18	20	22.1		29.2	13.7	
SMAJ20CA	BV	20	22.2	24.5		32.4	12.3	

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 IR limit is double.
9. Cathode band marking on device for Uni-Directional parts , blank for Bi-Directional

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