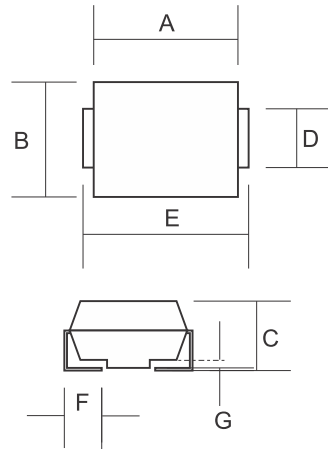


■ **DIAGRAM** DO-214



■ **FEATURES**

- Glass Passivated Chip Junction
- Excellent clamping capability
- Low zener impedance
- Fast response time, typically less than 1ps from 0 volts to BV min
- Typical IR less than 1 uA above 10V

■ **MECHANICAL DATA**

- Molded Plastic Case (UL 94V-0 Rated)
- Polarity: Color Band Denotes Cathode for Unidirectional

■ **DIMENSIONS**

Series		A		B		C		D		F		G	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
SMAJ	in	1.670	1.870	0.094	0.111	0.075	0.094	0.049	0.062	0.030	0.056	0.003	0.008
	mm	4.250	4.750	2.240	2.830	1.900	2.300	1.250	1.580	0.780	1.410	0.008	0.200
SMBJ	in	1.670	1.870	0.130	0.155	0.078	0.103	0.073	0.085	0.035	0.056	0.004	0.008
	mm	4.250	4.750	3.300	3.994	1.990	2.610	1.850	2.215	0.090	1.410	0.100	0.200
SMCJ	in	0.260	0.280	0.220	0.245	0.078	0.103	0.112	0.129	0.030	0.060	0.004	0.008
	mm	6.600	7.110	5.590	6.220	1.990	2.610	2.850	3.270	0.760	1.520	0.200	0.200

■ **MAXIMUM RATINGS** (T_a=25°C Unless otherwise specified)

Item	Symbol	SMAJ	SMBJ	SMCJ	Units
Peak Power Dissipation (10/1000 ΩS with a 10/1000 ΩS waveform)	P _{PPM}	400	600	1500	Watts
Power Dissipation (T _A = 50 on infinite heat sink)	P _D	3.3	5	6.5	Watts
Peak Forward Surge Current (8.3ms single half sine-wave unidirectional only)	I _{FSM}	40	100	200	Amps
Operating & Storage Temperature Range	T _J T _{STG}	-55 ~ + 150			°C
Max Instantaneous Forward Voltage (Unidirectional)	V _F	3.5 @25A	3.5 @50A	3.5 @100A	Volts
Thermal Resistance					
Junction - Ambient	R _{OJA}	120	100	75	°C / w
Junction - Lead	R _{OJL}	30	20	15	

Note: 1. Non-repetitive current pulse per fig. 3 and derated above T_A = 25°C
2. Mounted on 8.0 x 8.0mm copper pads for each terminal

■ **ELECTRICAL CHARACTERISTICS** (T_a=25°C Unless otherwise specified)

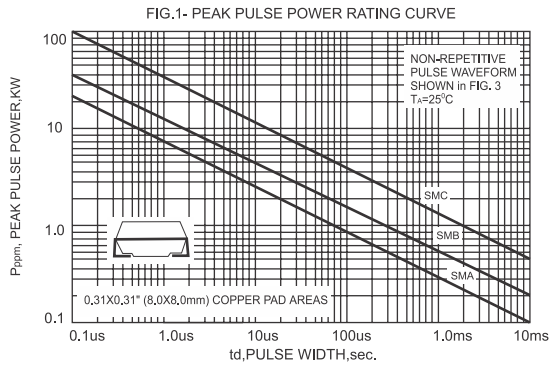
Part Number (Unidirectional)	Part Number (Bidirectional)	Working Peak Reverse Voltage V _{RWM} (V)	Break Down Voltage			Maximum Clamping Voltage V _{RSM} (V)	Maximum Reverse Current & Leakage					
			V _{BR} (V)		@ IT (mA)		* A Size		* B Size		* C Size	
			Min	Max			Current IPPM (A)	Leakage at V _{NWM} IR (μA)	Current IPPM (A)	Leakage at V _{NWM} IR (μA)	Current IPPM (A)	Leakage at V _{NWM} IR (μA)
SM*J5.0	SM*J5.0C	5	6.4	7.3	10	9.6	41.7	800	62.5	800	156	1000
SM*J5.0A	SM*J5.0CA	5	6.4	7	10	9.2	43.5	800	65.2	800	163	1000
SM*J6.0	SM*J6.0C	6	6.7	8.2	10	11.4	35.1	800	52.6	800	131.6	1000
SM*J6.0A	SM*J6.0CA	6	6.7	7.4	10	10.3	38.8	800	58.3	800	145	1000
SM*J6.5	SM*J6.5C	6.5	7.2	8.8	10	12.3	32.5	500	48.8	500	122	500
SM*J6.5A	SM*J6.5CA	6.5	7.2	8	10	11.2	35.7	500	53.6	500	133.9	500
SM*J7.0	SM*J7.0C	7	7.8	9.5	10	13.3	30.1	200	45.1	200	112.8	200
SM*J7.0A	SM*J7.0CA	7	7.8	8.6	10	12	33.3	200	50	200	125	200
SM*J7.5	SM*J7.5C	7.5	8.3	10	1	14.3	28	100	42	100	104.9	100
SM*J7.5A	SM*J7.5CA	7.5	8.3	9.2	1	12.9	31	100	46.5	100	116.3	100
SM*J8.0	SM*J8.0C	8	8.9	11	1	15	20.7	50	40	50	100	50
SM*J8.0A	SM*J8.0CA	8	8.9	9.8	1	13.6	29.4	50	44.1	50	110.3	50
SM*J8.5	SM*J8.5C	8.5	9.4	12	1	15.9	25.2	10	37.7	10	94.3	20
SM*J8.5A	SM*J8.5CA	8.5	9.4	10	1	14.4	27.8	10	41.7	10	104.2	20
SM*J9.0	SM*J9.0C	9	10	12	1	16.9	23.7	5.0	35.5	5.0	88.8	10
SM*J9.0A	SM*J9.0CA	9	10	11	1	15.4	26	5.0	39	5.0	97.4	10
SM*J10	SM*J10C	10	11	14	1	18.8	21.3	1.0	31.9	1.0	79.8	5.0
SM*J10A	SM*J10CA	10	11	12	1	17	23.5	1.0	35.3	1.0	88.2	5.0
SM*J11	SM*J11C	11	12	15	1	20.1	19.9	1.0	29.9	1.0	74.6	5.0
SM*J11A	SM*J11CA	11	12	14	1	18.2	22	1.0	33	1.0	82.4	5.0
SM*J12	SM*J12C	12	13	16	1	22	18.2	1.0	27.3	1.0	68.2	5.0
SM*J12A	SM*J12CA	12	13	15	1	19.9	20.1	1.0	30.2	1.0	75.4	5.0
SM*J13	SM*J13C	13	14	18	1	23.8	16.8	1.0	25.2	1.0	63	1.0
SM*J13A	SM*J13CA	13	14	16	1	21.5	18.6	1.0	27.9	1.0	69.8	1.0
SM*J14	SM*J14C	14	16	19	1	25.8	15.5	1.0	23.3	1.0	58.1	1.0
SM*J14A	SM*J14CA	14	16	17	1	23.2	17.2	1.0	25.9	1.0	64.7	1.0
SM*J15	SM*J15C	15	17	20	1	26.9	14.9	1.0	22.3	1.0	55.8	1.0
SM*J15A	SM*J15CA	15	17	19	1	24.4	16.4	1.0	24.6	1.0	61.5	1.0
SM*J16	SM*J16C	16	18	22	1	28.8	13.9	1.0	20.8	1.0	52.1	1.0
SM*J16A	SM*J16CA	16	18	20	1	26	15.4	1.0	28.1	1.0	57.7	1.0
SM*J17	SM*J17C	17	19	23	1	30.5	13.1	1.0	19.7	1.0	49.2	1.0
SM*J17A	SM*J17CA	17	19	21	1	27.6	14.5	1.0	21.7	1.0	54.3	1.0
SM*J18	SM*J18C	18	20	24	1	32.2	12.4	1.0	18.6	1.0	46.6	1.0
SM*J18A	SM*J18CA	18	20	22	1	29.2	13.7	1.0	20.5	1.0	51.4	1.0
SM*J20	SM*J20C	20	22	27	1	35.8	11.2	1.0	16.8	1.0	41.9	1.0
SM*J20A	SM*J20CA	20	22	25	1	32.4	12.3	1.0	18.5	1.0	46.3	1.0
SM*J22	SM*J22C	22	24	30	1	39.4	10.2	1.0	15.2	1.0	38.1	1.0
SM*J22A	SM*J22CA	22	24	27	1	35.5	16.3	1.0	16.9	1.0	42.3	1.0
SM*J24	SMJ24C	24	27	33	1	43	9.3	1.0	14	1.0	34.9	1.0
SM*J24A	SM*J24CA	24	27	30	1	38.9	10.3	1.0	15.4	1.0	38.6	1.0
SM*J26	SM*J26C	26	29	35	1	46.6	8.6	1.0	12	1.0	32.2	1.0
SM*J26A	SM*J26CA	26	29	32	1	42.1	9.5	1.0	14.3	1.0	35.6	1.0
SM*J28	SM*J28C	28	31	38	1	50	8.0	1.0	12	1.0	30	1.0
SM*J28A	SM*J28CA	28	31	34	1	45.4	8.8	1.0	13.2	1.0	33	1.0
SM*J30	SM*J30C	30	33	41	1	53.5	7.5	1.0	11.2	1.0	28	1.0
SM*J30A	SM*J30CA	30	33	37	1	48.4	8.3	1.0	12.4	1.0	31	1.0

- Note: 1. Pulse test: tp ≤ 50ms
 2. Surge Current waveform per Fig-3 and derated per Fig-2
 3. For bi-directional types having V_{wm} of 10V and less the I_R limit is doubled.
 4. For the bi-directional SMAJ 5.0CA, the maximum V_{BR} is 7.25V
 5. A suffix is 5% tolerance, no suffix is 10% tolerance

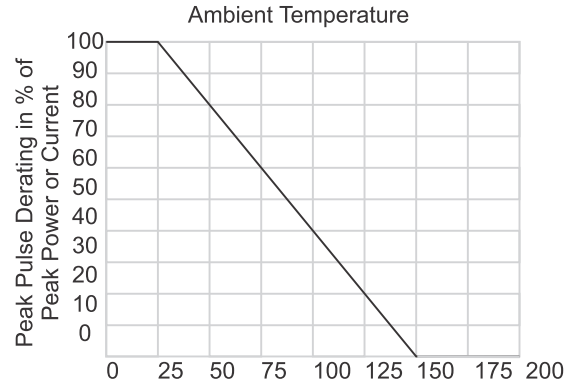
■ **ELECTRICAL CHARACTERISTICS** (T_a=25°C Unless otherwise specified)

Part Number (Unidirectional)	Part Number (Bidirectional)	Working Peak Reverse Voltage VRWM (V)	Break Down Voltage			Maximum Clamping Voltage VRSM (V)	Maximum Reverse Current & Leakage					
			V BR (V)		@ IT (mA)		* A Size		* B Size		* C Size	
			Min	Max			Current IPPM (A)	Leakage at V NWM IR (µA)	Current IPPM (A)	Leakage at V NWM IR (µA)	Current IPPM (A)	Leakage at V NWM IR (µA)
SM*J33	SM*J33C	33	37	44.9	1	59	6.8	1.0	10.2	1.0	25.4	1.0
SM*J33A	SM*J33CA	33	37	40.6	1	53.3	7.5	1.0	11.3	1.0	28.1	1.0
SM*J36	SM*J36C	36	40	48.9	1	64.3	6.2	1.0	9.3	1.0	23.3	1.0
SM*J36A	SM*J36CA	36	40	44.2	1	58.1	6.9	1.0	10.3	1.0	25.8	1.0
SM*J40	SM*J40C	40	44	54.3	1	71.4	5.6	1.0	8.4	1.0	21.0	1.0
SM*J40A	SM*J40CA	40	44	49.1	1	64.5	6.2	1.0	9.3	1.0	23.3	1.0
SM*J43	SM*J43C	43	48	58.4	1	76.7	5.2	1.0	7.8	1.0	19.6	1.0
SM*J43A	SM*J43CA	43	48	52.8	1	69.4	5.8	1.0	8.6	1.0	21.6	1.0
SM*J45	SM*J45C	45	50	61.1	1	80.3	5.0	1.0	7.5	1.0	18.7	1.0
SM*J45A	SM*J45CA	45	50	55.3	1	72.7	5.5	1.0	8.3	1.0	20.6	1.0
SM*J48	SM*J48C	48	53	65.1	1	85.5	4.7	1.0	7.0	1.0	12.5	1.0
SM*J48A	SM*J48CA	48	53	58.9	1	77.4	5.2	1.0	7.8	1.0	19.4	1.0
SM*J51	SM*J51C	51	57	69.3	1	91.1	4.4	1.0	6.6	1.0	16.5	1.0
SM*J51A	SM*J51CA	51	57	62.7	1	82.4	4.9	1.0	7.3	1.0	18.2	1.0
SM*J54	SM*J54C	54	60	73.3	1	96.3	4.2	1.0	6.2	1.0	15.6	1.0
SM*J54A	SM*J54CA	54	60	66	1	87.1	4.6	1.0	6.9	1.0	18.2	1.0
SM*J58	SM*J58C	58	64	78.7	1	103	3.9	1.0	5.8	1.0	14.6	1.0
SM*J58A	SM*J58CA	58	64	71.2	1	93.6	4.3	1.0	6.4	1.0	16.0	1.0
SM*J60	SM*J60C	60	67	81.5	1	107	3.7	1.0	5.6	1.0	14.0	1.0
SM*J60A	SM*J60CA	60	67	73.7	1	96.8	4.1	1.0	6.2	1.0	15.5	1.0
SM*J64	SM*J64C	64	71	86.9	1	114	3.5	1.0	5.3	1.0	13.2	1.0
SM*J64A	SM*J64CA	64	71	78.6	1	103	3.9	1.0	5.8	1.0	14.6	1.0
SM*J70	SM*J70C	70	78	95.1	1	125	3.2	1.0	4.8	1.0	12.0	1.0
SM*J70A	SM*J70CA	70	78	86	1	113	3.5	1.0	5.3	1.0	13.3	1.0
SM*J75	SM*J75C	75	83	102	1	134	3.0	1.0	4.5	1.0	11.2	1.0
SM*J75A	SM*J75CA	75	83	92	1	121	3.3	1.0	5.0	1.0	12.4	1.0
SM*J78	SM*J78C	78	87	106	1	139	2.9	1.0	4.3	1.0	10.8	1.0
SM*J78A	SM*J78CA	78	87	96	1	126	3.2	1.0	4.8	1.0	11.9	1.0
SM*J85	SM*J85C	85	94	115	1	151	2.0	1.0	4.0	1.0	9.9	1.0
SM*J85A	SM*J85CA	85	94	104	1	137	2.2	1.0	4.4	1.0	10.9	1.0
SM*J90	SM*J90C	90	100	122	1	160	1.9	1.0	3.8	1.0	9.4	1.0
SM*J90A	SM*J90CA	90	100	111	1	146	2.1	1.0	4.1	1.0	10.3	1.0
SM*J100	SM*J100C	100	111	136	1	179	1.7	1.0	3.4	1.0	8.4	1.0
SM*J100A	SM*J100CA	100	111	123	1	162	1.9	1.0	3.7	1.0	9.3	1.0
SM*J110	SM*J110C	110	122	149	1	196	1.5	1.0	3.1	1.0	7.7	1.0
SM*J110A	SM*J110CA	110	122	135	1	177	1.7	1.0	3.4	1.0	8.5	1.0
SM*J120	SM*J120C	120	133	163	1	214	1.4	1.0	2.8	1.0	7.0	1.0
SM*J120A	SM*J120CA	120	133	147	1	193	1.6	1.0	3.1	1.0	7.6	1.0
SM*J130	SM*J130C	130	144	176	1	231	1.3	1.0	2.6	1.0	6.5	1.0
SM*J130A	SM*J130CA	130	144	159	1	209	1.4	1.0	2.9	1.0	7.2	1.0
SM*J150	SM*J150C	150	167	204	1	268	1.1	1.0	2.2	1.0	5.6	1.0
SM*J150A	SM*J150CA	150	167	185	1	243	1.2	1.0	2.5	1.0	6.2	1.0
SM*J160	SM*J160C	160	178	218	1	287	1.0	1.0	2.1	1.0	5.2	1.0
SM*J160A	SM*J160CA	160	178	197	1	259	1.2	1.0	2.3	1.0	5.8	1.0
SM*J170	SM*J170C	170	189	231	1	304	0.99	1.0	2.0	1.0	4.9	1.0
SM*J170A	SM*J170CA	170	189	209	1	275	1.1	1.0	2.2	1.0	5.5	1.0
SM*J180	SM*J180C	180	201	245	1	322	1.24	1.0	1.9	1.0	4.7	1.0
SM*J180A	SM*J180CA	180	201	222	1	292	1.37	1.0	2.1	1.0	5.2	1.0
SM*J188	SM*J188C	188	209	255	1	344	0.90	1.0	1.8	1.0	4.4	1.0
SM*J188A	SM*J188CA	188	209	231	1	328	0.98	1.0	2.0	1.0	4.8	1.0

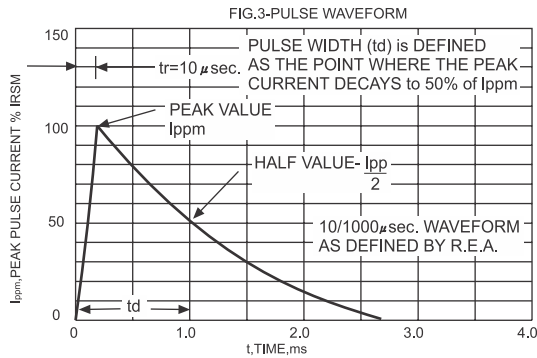
■ **FIGURE 1 - PULSE RATING CURVE**



■ **FIGURE 2 - PULSE DERATING CURVE**



■ **FIGURE 3 - PULSE WAVEFORM**



■ **FIGURE 4 - MAXIMUM NON-REPETITIVE SURGE CURRENT**

