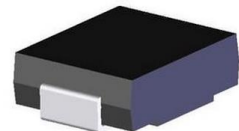


Feature

- Glass passivated chip
- 1500W peak pulse power capability with a 10/1000us waveform
- Repetitive rate (duty cycle): 0.01%
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with Rohs standard
- Complies with following standards:
-IEC 61000-4-2(ESD) immunity test level 4
Air discharge : $\pm 15\text{kV}$
Contact discharge: $\pm 8\text{kV}$

SMCG



Mechanical Data

- Case: SMC/DO214AB Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

Marking

- SMCJ
XXCA/XXA
XX: From 5.0 To 550

Absolute Maximum Ratings ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 us waveform	P_{PP}	1500	W
Peak pulse current with a 10/1000 us waveform	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	6.5	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only ¹⁾	I_{FSM}	200	A
Maximum instantaneous forward voltage at 25A for unidirectional only ²⁾	V_F	3.5/6.5	V
Junction Temperature	T_J	-55 ~ +150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55 ~ +150	$^\circ\text{C}$

- 1) Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum;
- 2) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 6.5\text{V}$ for devices of $V_{BR} > 201\text{V}$.

Electrical Characteristics (T_a=25°C unless otherwise specified)

Part Number	Part Number	Reverse Stand-off Voltage VR (V)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ IPP (Volts)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage IR @ VR (μA)
			MIN	MAX				
SMCJ5.0A	SMCJ5.0CA	5	6.4	7	10	9.2	163	800
SMCJ6.0A	SMCJ6.0CA	6	6.67	7.37	10	10.3	145.7	800
SMCJ6.5A	SMCJ6.5CA	6.5	7.22	7.98	10	11.2	134	500
SMCJ7.0A	SMCJ7.0CA	7	7.78	8.6	10	12	125	200
SMCJ7.5A	SMCJ7.5CA	7.5	8.33	9.21	1	12.9	116.3	100
SMCJ8.0A	SMCJ8.0CA	8	8.89	9.83	1	13.6	110.3	50
SMCJ8.5A	SMCJ8.5CA	8.5	9.44	10.4	1	14.4	104.2	20
SMCJ9.0A	SMCJ9.0CA	9	10	11.1	1	15.4	97.4	10
SMCJ10A	SMCJ10CA	10	11.1	12.3	1	17	88.3	5
SMCJ11A	SMCJ11CA	11	12.2	13.5	1	18.2	82.5	1
SMCJ12A	SMCJ12CA	12	13.3	14.7	1	19.9	75.4	1
SMCJ13A	SMCJ13CA	13	14.4	15.9	1	21.5	69.9	1
SMCJ14A	SMCJ14CA	14	15.6	17.2	1	23.2	64.7	1
SMCJ15A	SMCJ15CA	15	16.7	18.5	1	24.4	61.5	1
SMCJ16A	SMCJ16CA	16	17.8	19.7	1	26	57.7	1
SMCJ17A	SMCJ17CA	17	18.9	20.9	1	27.6	54.4	1
SMCJ18A	SMCJ18CA	18	20	22.1	1	29.2	51.4	1
SMCJ20A	SMCJ20CA	20	22.2	24.5	1	32.4	46.3	1
SMCJ22A	SMCJ22CA	22	24.4	26.9	1	35.5	42.3	1
SMCJ24A	SMCJ24CA	24	26.7	29.5	1	38.9	38.6	1
SMCJ26A	SMCJ26CA	26	28.9	31.9	1	42.1	35.7	1
SMCJ28A	SMCJ28CA	28	31.1	34.4	1	45.4	33.1	1
SMCJ30A	SMCJ30CA	30	33.3	36.8	1	48.4	31	1
SMCJ33A	SMCJ33CA	33	36.7	40.6	1	53.3	28.2	1
SMCJ36A	SMCJ36CA	36	40	44.2	1	58.1	25.9	1
SMCJ40A	SMCJ40CA	39	44.4	49.1	1	64.5	23.3	1
SMCJ43A	SMCJ43CA	42	47.8	52.8	1	69.4	21.7	1
SMCJ45A	SMCJ45CA	45	50	55.3	1	72.7	20.6	1
SMCJ48A	SMCJ48CA	48	53.3	58.9	1	77.4	19.4	1
SMCJ51A	SMCJ51CA	51	56.7	62.7	1	82.4	18.2	1
SMCJ54A	SMCJ54CA	54	60	66.3	1	87.1	17.3	1
SMCJ58A	SMCJ58CA	58	64.4	71.2	1	93.6	16.1	1
SMCJ60A	SMCJ60CA	62	66.7	73.7	1	96.8	15.5	1
SMCJ64A	SMCJ64CA	66	71.1	78.6	1	103	14.6	1
SMCJ70A	SMCJ70CA	70	77.8	86	1	113	13.3	1
SMCJ75A	SMCJ75CA	75	83.3	92.1	1	121	12.4	1
SMCJ78A	SMCJ78CA	78	86.7	95.8	1	126	11.9	1
SMCJ85A	SMCJ85CA	85	94.4	104	1	137	11	1
SMCJ90A	SMCJ90CA	90	100	111	1	146	10.3	1

Electrical Characteristics (T_a=25°C unless otherwise specified)

Part Number	Part Number	Reverse Stand-off Voltage VR (V)	Breakdown Voltage VBR (Volts) @ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ IPP (Volts)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage IR @ VR (μA)
			MIN	MAX				
SMCJ100A	SMCJ100CA	100	111	123	1	162	9.3	1
SMCJ110A	SMCJ110CA	110	122	135	1	177	8.5	1
SMCJ120A	SMCJ120CA	120	133	147	1	193	7.8	1
SMCJ130A	SMCJ130CA	130	144	159	1	209	7.2	1
SMCJ150A	SMCJ150CA	150	167	185	1	243	6.2	1
SMCJ160A	SMCJ160CA	160	178	197	1	259	5.8	1
SMCJ170A	SMCJ170CA	170	189	209	1	275	5.5	1
SMCJ180A	SMCJ180CA	180	201	222	1	292	5.1	1
SMCJ190A	SMCJ190CA	190	211	233	1	306	4.8	1
SMCJ200A	SMCJ200CA	200	224	247	1	324	4.6	1
SMCJ210A	SMCJ210CA	210	233	258	1	324	4.4	1
SMCJ220A	SMCJ220CA	220	246	272	1	356	4.2	1
SMCJ250A	SMCJ250CA	250	279	309	1	405	3.7	1
SMCJ300A	SMCJ300CA	300	335	371	1	486	3.1	1
SMCJ350A	SMCJ350CA	350	391	432	1	567	2.6	1
SMCJ400A	SMCJ400CA	400	447	494	1	648	2.3	1
SMCJ440A	SMCJ440CA	440	492	543	1	713	2.1	1
SMCJ480A	SMCJ480CA	480	536	593	1	750	2	1
SMCJ520A	SMCJ520CA	520	578	640	1	762	2	1
SMCJ550A	SMCJ550CA	550	615	680	1	860	1.7	1

Typical Characteristics

FIG1: Peak Pulse Power Rating Curve

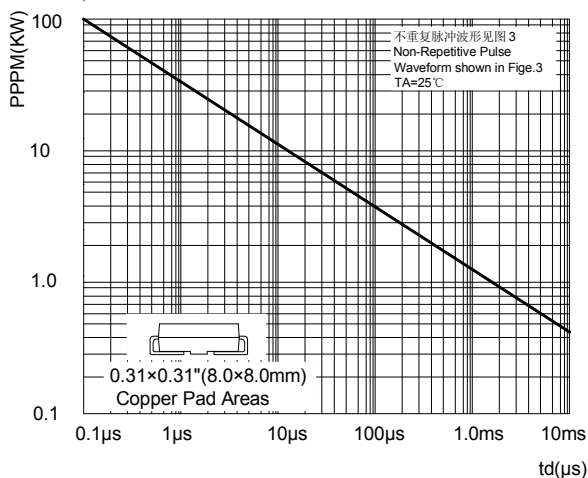


FIG2: Pulse Power or Current vs. Initial Junction Temperature

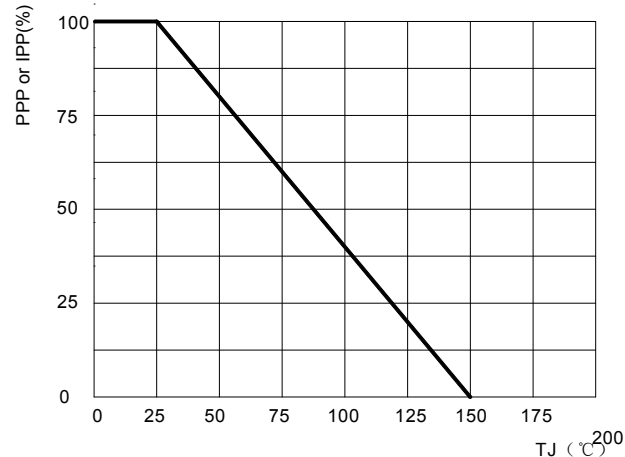


FIG3: Pulse Waveform

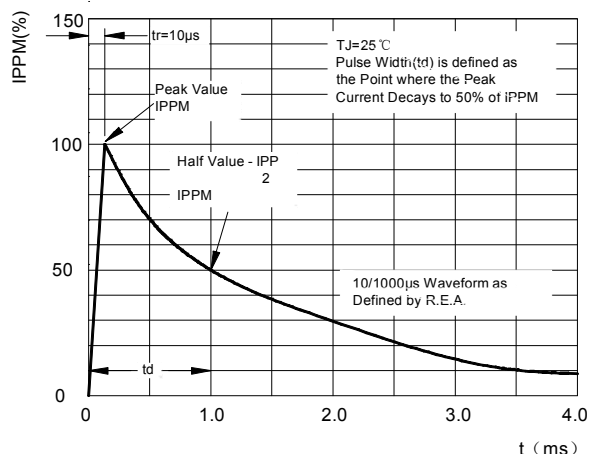


FIG4: Typical Transient Thermal Impedance

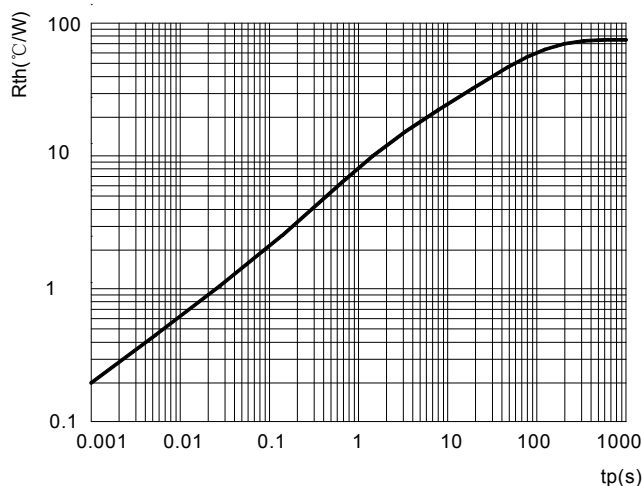


FIG5: Maximum Non-Repetitive Surge Current

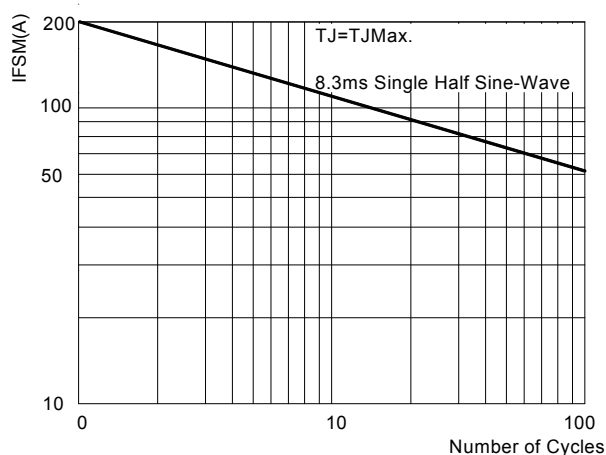
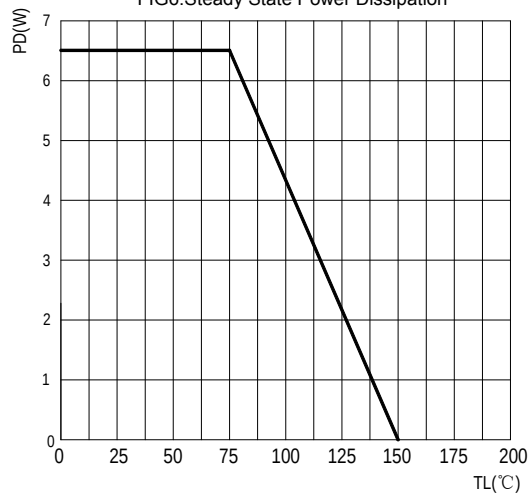
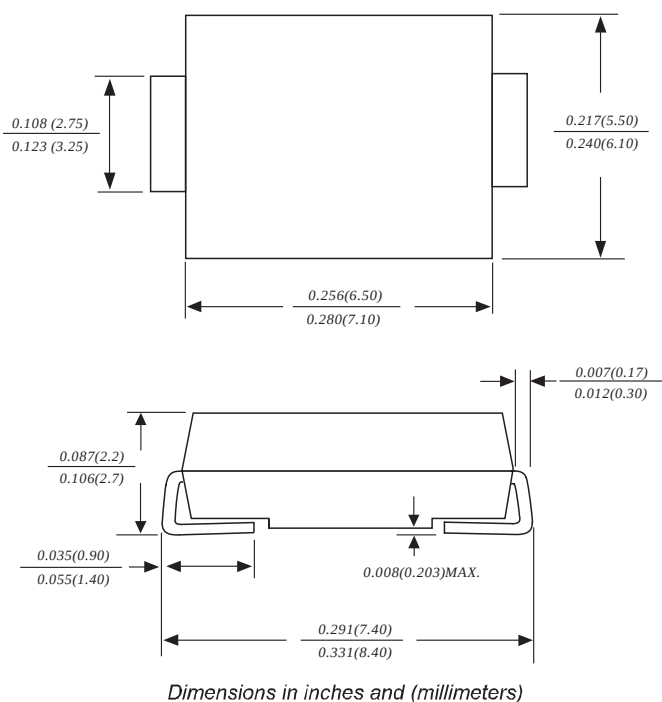


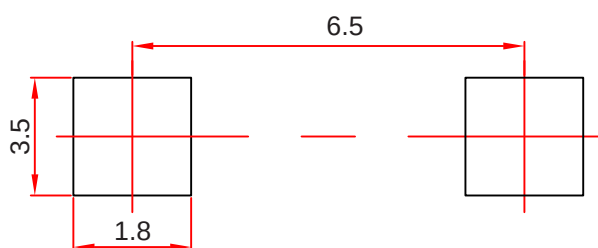
FIG6: Steady State Power Dissipation



SMCG Package Outline Dimensions



SMCG Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.