

3.0SMCJ5.0 - 220A

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Stand-off Voltage : 5.0 to 220V
Peak Pulse Power : 3000 W

FEATURES :

- * 3000W peak pulse power capability with a 10/1000µs waveform
- * Excellent clamping capability
- * Low inductance
- * High temperature soldering : 250 °C/10 seconds at terminals.
- * Built-in strain relief
- * **Pb / RoHS Free**

MECHANICAL DATA :

- * Case : SMC Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Lead : Lead Formed for Surface Mount
- * Mounting position : Any
- * Weight : 0.21 gram

DEVICES FOR BIPOLAR APPLICATIONS

For Bi-directional use C or CA Suffix
 Electrical characteristics apply in both directions

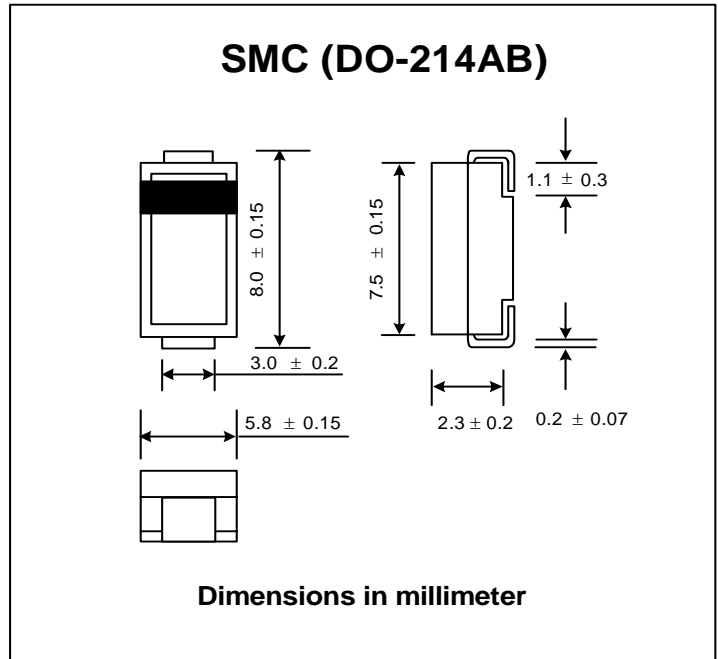
MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 µs waveform ⁽¹⁾ ⁽²⁾	P _{PPM}	3000	W
Peak Pulse Current on 10/1000 s waveform ⁽¹⁾	I _{PPM}	See Next Table	A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load ⁽²⁾ ⁽³⁾	I _{FSM}	200	A
Operating Junction and Storage Temperature Range	T _J , T _{STG}	- 55 to + 150	°C

Notes :

- (1) Non-repetitive Current pulse, per Fig. 3 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on 5.0 mm² (0.013 thick) land areas.
- (3) Measured on 8.3 ms , single half sine-wave or equivalent square wave, duty cycle=4 pulses per minutes maximum.



ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

Type	Breakdown Voltage @ $I_T^{(1)}$		Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{WM}	Maximum Clamping Voltage @ I_{PPM}	Maximum Peak Pulse Surge Current	
	V_{BR} (V)		V_{RWM}	I_R	V_C	I_{PPM}	
	Min.	Max.	(mA)	(V)	(μ A)	(V)	(A)
3.0SMCJ5.0	6.4	7.55	10	5.0	1000	9.6	312.5
3.0SMCJ5.0A	6.4	7.25	10	5.0	1000	9.2	326
3.0SMCJ6.0	6.67	8.45	10	6.0	1000	11.4	263.2
3.0SMCJ6.0A	6.67	7.67	10	6.0	1000	10.3	291.3
3.0SMCJ6.5	7.22	9.14	10	6.5	500	12.3	243.9
3.0SMCJ6.5A	7.22	8.30	10	6.5	500	11.2	267.9
3.0SMCJ7.0	7.78	9.86	10	7.0	200	13.3	225.6
3.0SMCJ7.0A	7.78	8.95	10	7.0	200	12.0	250
3.0SMCJ7.5	8.33	10.67	1.0	7.5	100	14.3	209.8
3.0SMCJ7.5A	8.33	9.58	1.0	7.5	100	12.9	232.6
3.0SMCJ8.0	8.89	11.30	1.0	8.0	50	15.0	200
3.0SMCJ8.0A	8.89	10.23	1.0	8.0	50	13.6	220.6
3.0SMCJ8.5	9.44	11.92	1.0	8.5	25	15.9	188.8
3.0SMCJ8.5A	9.44	10.82	1.0	8.5	25	14.4	208.4
3.0SMCJ9.0	10.0	12.6	1.0	9.0	10	16.9	177.4
3.0SMCJ9.0A	10.0	11.5	1.0	9.0	10	15.4	194.8
3.0SMCJ10	11.1	14.1	1.0	10	5	18.8	159.6
3.0SMCJ10A	11.1	12.8	1.0	10	5	17.0	176.4
3.0SMCJ11	12.2	15.4	1.0	11	5	20.1	149.2
3.0SMCJ11A	12.2	14.0	1.0	11	5	18.2	184.8
3.0SMCJ12	13.3	16.9	1.0	12	5	22.0	136.4
3.0SMCJ12A	13.3	15.3	1.0	12	5	19.9	150.6
3.0SMCJ13	14.4	18.2	1.0	13	5	23.8	126.0
3.0SMCJ13A	14.4	16.5	1.0	13	5	21.5	139.4
3.0SMCJ14	15.6	19.8	1.0	14	5	25.8	116.2
3.0SMCJ14A	15.6	17.9	1.0	14	5	23.2	129.4
3.0SMCJ15	16.7	21.1	1.0	15	5	26.9	111.6
3.0SMCJ15A	16.7	19.2	1.0	15	5	24.4	123.0
3.0SMCJ16	17.8	22.6	1.0	16	5	28.8	104.2
3.0SMCJ16A	17.8	20.5	1.0	16	5	26.0	115.4
3.0SMCJ17	18.9	23.9	1.0	17	5	30.5	98.4
3.0SMCJ17A	18.9	21.7	1.0	17	5	27.6	106.6
3.0SMCJ18	20.0	25.3	1.0	18	5	32.2	93.2
3.0SMCJ18A	20.0	23.3	1.0	18	5	29.2	102.8
3.0SMCJ20	22.2	28.1	1.0	20	5	35.8	83.8
3.0SMCJ20A	22.2	25.5	1.0	20	5	32.4	92.6
3.0SMCJ22	24.4	30.9	1.0	22	5	39.4	76.2
3.0SMCJ22A	24.4	28.0	1.0	22	5	35.5	84.4
3.0SMCJ24	26.7	33.8	1.0	24	5	43.0	69.8
3.0SMCJ24A	26.7	30.7	1.0	24	5	38.9	77.2
3.0SMCJ26	28.9	36.6	1.0	26	5	46.6	64.4
3.0SMCJ26A	28.9	33.2	1.0	26	5	42.1	71.2
3.0SMCJ28	31.1	39.4	1.0	28	5	50.0	60.0
3.0SMCJ28A	31.1	35.8	1.0	28	5	45.4	66.0
3.0SMCJ30	33.3	42.2	1.0	30	5	53.5	56.0
3.0SMCJ30A	33.3	38.3	1.0	30	5	48.4	62.0
3.0SMCJ33	36.7	46.5	1.0	33	5	59.0	50.4
3.0SMCJ33A	36.7	42.2	1.0	33	5	53.3	56.2
3.0SMCJ36	40.0	50.7	1.0	36	5	64.3	46.6
3.0SMCJ36A	40.0	46.0	1.0	36	5	58.1	51.6
3.0SMCJ40	44.4	56.3	1.0	40	5	71.4	42.0
3.0SMCJ40A	44.4	51.1	1.0	40	5	64.5	46.4
3.0SMCJ43	47.8	60.5	1.0	43	5	76.7	39.2
3.0SMCJ43A	47.8	54.9	1.0	43	5	69.4	43.2

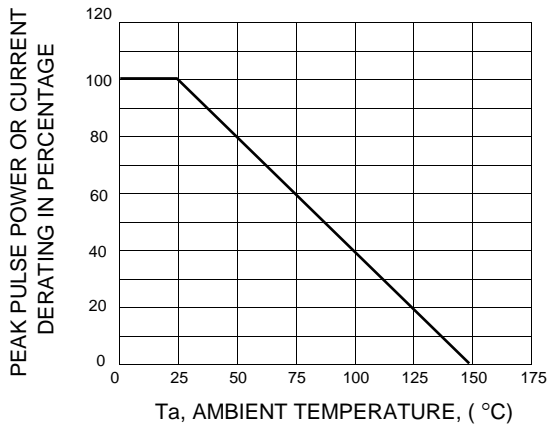
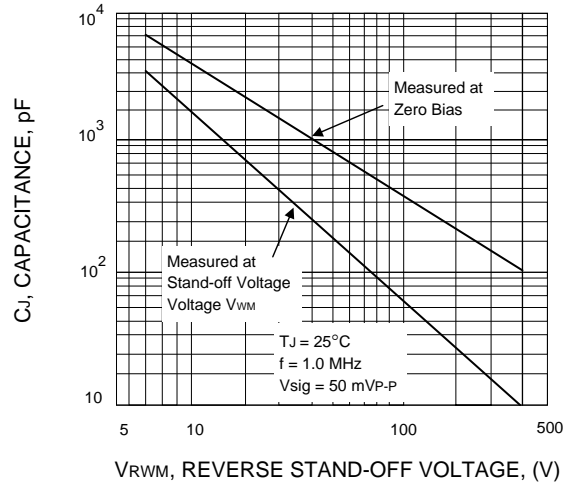
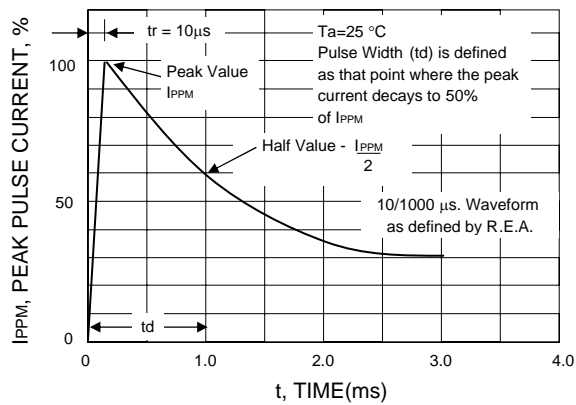
ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature unless otherwise specified)

Type	Breakdown Voltage @ $I_T^{(1)}$		Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{WM}	Maximum Clamping Voltage @ I_{PPM}	Maximum Peak Pulse Surge Current	
	V_{BR} (V)		V_{RWM}	I_R	V_C	I_{PPM}	
	Min.	Max.	(mA)	(V)	(μ A)	(A)	
3.0SMCJ45	50.0	63.3	1.0	45	5	80.3	37.4
3.0SMCJ45A	50.0	57.5	1.0	45	5	72.7	41.2
3.0SMCJ48	53.3	67.5	1.0	48	5	85.5	35.0
3.0SMCJ48A	53.3	61.3	1.0	48	5	77.4	38.8
3.0SMCJ51	56.7	71.8	1.0	51	5	91.1	37.0
3.0SMCJ51A	56.7	65.2	1.0	51	5	82.4	36.4
3.0SMCJ54	60.0	76.0	1.0	54	5	96.3	31.2
3.0SMCJ54A	60.0	69.0	1.0	54	5	87.1	34.4
3.0SMCJ58	64.4	81.6	1.0	58	5	103	39.2
3.0SMCJ58A	64.4	74.1	1.0	58	5	93.6	32.0
3.0SMCJ60	66.7	84.5	1.0	60	5	107	28.0
3.0SMCJ60A	66.7	76.7	1.0	60	5	96	31.0
3.0SMCJ64	71.1	90.1	1.0	64	5	114	26.4
3.0SMCJ64A	71.1	81.8	1.0	64	5	103	29.2
3.0SMCJ70	77.8	98.6	1.0	70	5	125	24.0
3.0SMCJ70A	77.8	89.5	1.0	70	5	113	26.6
3.0SMCJ75	83.3	105.7	1.0	75	5	134	22.4
3.0SMCJ75A	83.3	95.8	1.0	75	5	121	24.8
3.0SMCJ78	86.7	109.8	1.0	78	5	139	21.6
3.0SMCJ78A	86.7	99.7	1.0	78	5	126	22.8
3.0SMCJ85	94.4	119.2	1.0	85	5	151	19.8
3.0SMCJ85A	94.4	108.2	1.0	85	5	137	20.8
3.0SMCJ90	100	126.5	1.0	90	5	160	18.8
3.0SMCJ90A	100	115.5	1.0	90	5	146	20.6
3.0SMCJ100	111	141.0	1.0	100	5	179	16.6
3.0SMCJ100A	111	128.0	1.0	100	5	162	18.6
3.0SMCJ110	122	154.5	1.0	110	5	196	15.4
3.0SMCJ110A	122	140.5	1.0	110	5	177	16.8
3.0SMCJ120	133	169.0	1.0	120	5	214	14.0
3.0SMCJ120A	133	153.0	1.0	120	5	193	15.6
3.0SMCJ130	144	182.5	1.0	130	5	231	13.0
3.0SMCJ130A	144	165.5	1.0	130	5	209	14.4
3.0SMCJ150	167	211.5	1.0	150	5	268	11.2
3.0SMCJ150A	167	192.5	1.0	150	5	243	12.4
3.0SMCJ160	178	226.0	1.0	160	5	287	10.4
3.0SMCJ160A	178	205.0	1.0	160	5	259	11.6
3.0SMCJ170	189	239.5	1.0	170	5	304	9.8
3.0SMCJ170A	189	217.5	1.0	170	5	275	11.0
3.0SMCJ180	198	253.8	1.0	180	5	322	9.3
3.0SMCJ180A	198	230.4	1.0	180	5	292	10.3
3.0SMCJ190	209	267.9	1.0	190	5	340	8.8
3.0SMCJ190A	209	243.2	1.0	190	5	308	9.7
3.0SMCJ200	220	282.0	1.0	200	5	358	8.4
3.0SMCJ200A	220	256.0	1.0	200	5	324	9.3
3.0SMCJ210	231	296.1	1.0	210	5	376	7.8
3.0SMCJ210A	231	268.8	1.0	210	5	340	8.8
3.0SMCJ220	242	310.2	1.0	220	5	394	7.6
3.0SMCJ220A	242	281.6	1.0	220	5	356	8.4

Notes :

- (1) Pulse test : $t_p \leq 50$ ms.
- (2) "SMCJ" will be omitted on marking of the diode.

RATING AND CHARACTERISTIC CURVES (3.0SMCJ5.0 - 220A)

FIG.1 - PULSE DERATING CURVE

FIG.2 - TYPICAL JUNCTION CAPACITANCE

FIG.3 - PULSE WAVEFORM

FIG.4 - PEAK PULSE POWER RATING CURVE
