

Features

- 3000W peak pulse power capability with a 10/100µs waveform
- Excellent clamping capability
- Fast response time
- Low incremental surge resistance
- Meets MSL level 1, per J-STD-020, LF maximum Solder dip 275°C, 10s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



DO-214AB(SMC)

Applications

For use in sensitive electronics protection against voltage transients induced by lightning or inductive load switching. Key applications include protection of I/O interfaces, industrial and LED lighting applications, DC power buses, and other vulnerable circuits used in consumer electronics.



Mechanical Data

Case: DO-214AB (SMC)

Molding compound meets UL 94 V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

Marking: Cathode band on uni-directional devices only

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000 µs Waveform ⁽¹⁾ (Fig. 3)	P _{PPM}	3000	W
Peak Power Pulse Current with a 10/1000 µs Waveform ⁽¹⁾ (Fig. 1)	I _{PPM}	See Next Table	A
Peak Forward Surge Current 8.3 ms Single Half Sine-Wave ⁽²⁾	I _{FSM}	250	A
Power Dissipation on Infinite Heatsink @ T _L = 75 °C (Fig. 6)	P _D	6.0	W
Maximum Instantaneous Forward Voltage @100A ⁽²⁾	V _F	3.5	V
Typical Thermal Resistance Junction to Case	R _{θJC}	49	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	- 65 to + 150	°C

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A = 25 °C per Fig. 2

(2) Measured on 8.3 ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minute maximum

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

Part Number (Uni)	Part Number (Bi)	Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Maximum Reverse Leakage Current ⁽¹⁾	Maximum Clamping Voltage	Peak Pulse Current
					V _(BR) @I _T					
		UNI	BI	VWM	Min.	Max.	I _T	I _R @V _{WM}	V _C @ I _{PPM}	I _{PPM}
				V	V	V	mA	µA	V	A
3.0SMCJ7.0A	3.0SMCJ7.0CA	HDM	IDM	7	7.8	8.5	10	200	12	250
3.0SMCJ7.5A	3.0SMCJ7.5CA	HDP	IDP	7.5	8.3	9.1	1	100	12.9	232.6
3.0SMCJ8.0A	3.0SMCJ8.0CA	HDR	IDR	8	8.9	9.7	1	50	13.6	220.6
3.0SMCJ8.5A	3.0SMCJ8.5CA	HDT	IDT	8.5	9.4	10.3	1	25	14.4	208.4
3.0SMCJ9.0A	3.0SMCJ9.0CA	HDV	IDV	9	10	11	1	10	15.4	194.8
3.0SMCJ10A	3.0SMCJ10CA	HDX	IDX	10	11.1	12.3	1	5	17	176.4
3.0SMCJ11A	3.0SMCJ11CA	HDZ	IDZ	11	12.2	13.5	1	5	18.2	165
3.0SMCJ12A	3.0SMCJ12CA	HEE	IEE	12	13.3	14.8	1	5	20	150.6
3.0SMCJ13A	3.0SMCJ13CA	HEG	IEG	13	14.4	16	1	5	21.6	139.4
3.0SMCJ14A	3.0SMCJ14CA	HEK	IEK	14	15.6	17.4	1	5	23.2	129.4
3.0SMCJ15A	3.0SMCJ15CA	HEM	IEM	15	16.7	18.7	1	5	24.4	123
3.0SMCJ16A	3.0SMCJ16CA	HEP	IEP	16	17.8	20	1	5	26	115.4
3.0SMCJ17A	3.0SMCJ17CA	HER	IER	17	18.9	21.2	1	5	28.2	106.6
3.0SMCJ18A	3.0SMCJ18CA	HET	IET	18	20	22.8	1	5	29.2	102.8
3.0SMCJ20A	3.0SMCJ20CA	HEV	IEV	20	22.2	25	1	5	32.4	92.6
3.0SMCJ22A	3.0SMCJ22CA	HEX	IEX	22	24.4	27.5	1	5	35.7	84.4
3.0SMCJ24A	3.0SMCJ24CA	HEZ	IEZ	24	26.7	30.2	1	5	38.9	77.2
3.0SMCJ26A	3.0SMCJ26CA	HFE	IFE	26	28.9	32.7	1	5	42.3	71.2
3.0SMCJ28A	3.0SMCJ28CA	HFG	IFG	28	31.1	35.3	1	5	45.6	66
3.0SMCJ30A	3.0SMCJ30CA	HFK	IFK	30	33.3	37.8	1	5	48.4	62
3.0SMCJ33A	3.0SMCJ33CA	HFM	IFM	33	36.7	41.7	1	5	53.7	56.2
3.0SMCJ36A	3.0SMCJ36CA	HFP	IFP	36	40	45.5	1	5	58.2	51.6
3.0SMCJ40A	3.0SMCJ40CA	HFR	IFR	40	44.4	50.6	1	5	64.7	46.4
3.0SMCJ43A	3.0SMCJ43CA	HFT	IFT	43	47.8	54.4	1	5	69.5	43.2
3.0SMCJ45A	3.0SMCJ45CA	HFV	IFV	45	50	57	1	5	72.9	41.2
3.0SMCJ48A	3.0SMCJ48CA	HFX	IFX	48	53.3	60.8	1	5	77.4	38.8
3.0SMCJ51A	3.0SMCJ51CA	HFZ	IFZ	51	56.7	64.7	1	5	82.5	36.4

3.0SMCJx Series

Transient Voltage Suppressors
 Peak Pulse Power 3000W Stand-off Voltage 7V to 170V

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

Part Number (Uni)	Part Number (Bi)	Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Maximum Reverse Leakage Current ⁽¹⁾	Maximum Clamping Voltage	Peak Pulse Current
					V _(BR) @ I _T					
		UNI	BI	V _{WM} V	Min. V	Max. V	I _T mA	I _R @V _{WM} µA	V _C @ I _{PPM} V	I _{PPM} A
3.0SMCJ54A	3.0SMCJ54CA	HGE	IGE	54	60	68.5	1	5	87.5	34.4
3.0SMCJ58A	3.0SMCJ58CA	HGG	IGG	58	64.4	73.6	1	5	94	32
3.0SMCJ60A	3.0SMCJ60CA	HGK	IGK	60	66.7	76.2	1	5	97	31
3.0SMCJ64A	3.0SMCJ64CA	HGM	IGM	64	71.1	81.3	1	5	103	29.2
3.0SMCJ70A	3.0SMCJ70CA	HGP	IGP	70	77.8	89	1	5	112.1	26.8
3.0SMCJ75A	3.0SMCJ75CA	HGR	IGR	75	83.3	95.3	1	5	121	24.8
3.0SMCJ78A	3.0SMCJ78CA	HGT	IGT	78	86.7	99.2	1	5	132	22.8
3.0SMCJ85A	3.0SMCJ85CA	HGV	IGV	85	94.4	107.7	1	5	145	20.8
3.0SMCJ90A	3.0SMCJ90CA	HGX	IGX	90	100	115	1	5	146	20.6
3.0SMCJ100A	3.0SMCJ100CA	HGZ	IGZ	100	111	127.5	1	5	162	18.6
3.0SMCJ110A	3.0SMCJ110CA	HHE	IHE	110	122	140	1	5	179	16.8
3.0SMCJ120A	3.0SMCJ120CA	HHG	IHG	120	133	152.5	1	5	193	15.6
3.0SMCJ130A	3.0SMCJ130CA	HHK	IHK	130	144	165	1	5	209	14.4
3.0SMCJ150A	3.0SMCJ150CA	HHM	IHM	150	167	192	1	5	243	12.4
3.0SMCJ160A	3.0SMCJ160CA	HHP	IHP	160	178	205	1	5	259	11.6
3.0SMCJ170A	3.0SMCJ170CA	HHR	IHR	170	189	217	1	5	273	11

Notes:

(1)For bi-directional types having V_{WM} of 10 Volts and less, the I_D limit is doubled

Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

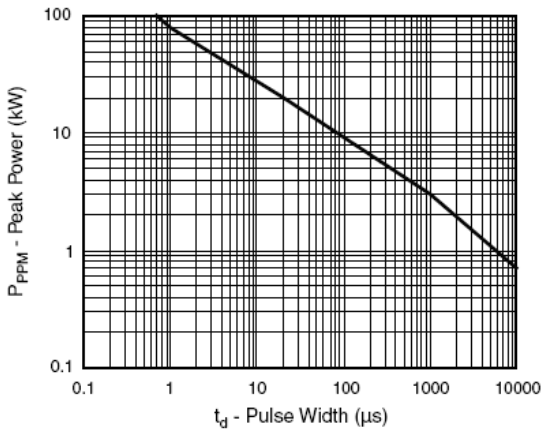


Figure 1. Peak Pulse Power Vs. Pulse Time

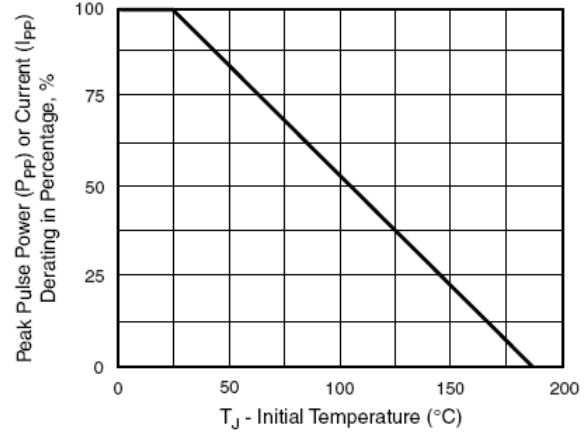


Figure 2. Pulse Power or Current Vs. Initial Junction Temperature

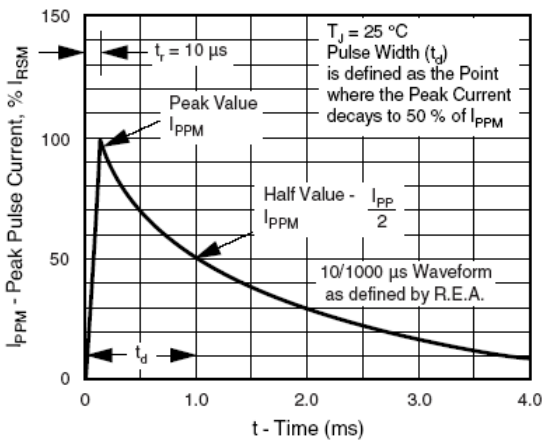


Figure 3. Pulse Waveform

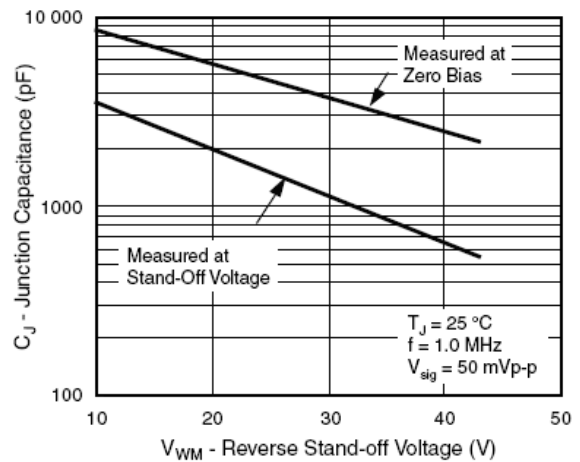


Figure 4. Typical Capacitance vs Stand-Off Voltage

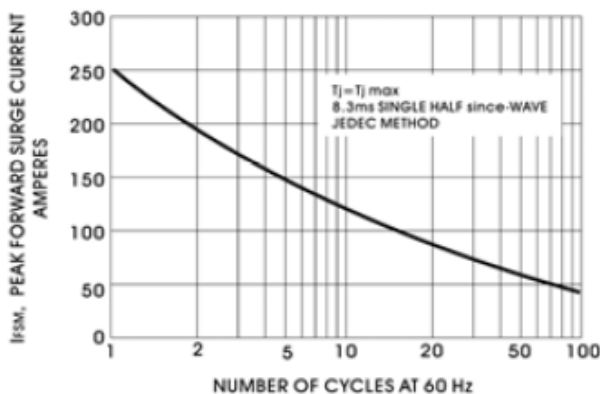


Figure 5. Maximum Non-Repetitive Peak Forward Surge Current Uni-directional

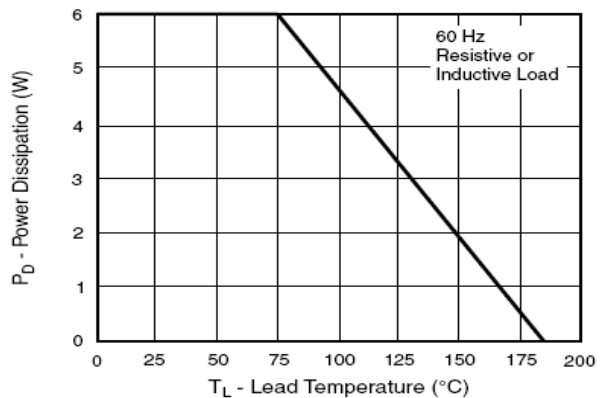
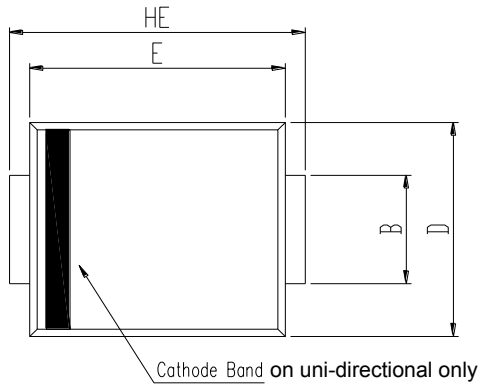


Figure 6. Steady State Power Derating Curve

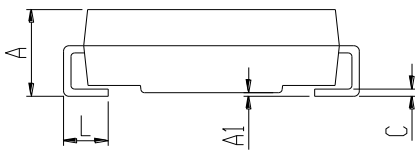
3.0SMCJx Series

Transient Voltage Suppressors
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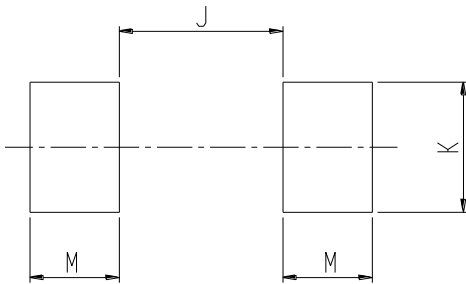
Package Outline Dimensions DO-214AB(SMC)



DIM	SMC (DO-214AB)			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.00	2.62	0.079	0.103
A1	0.00	0.20	0.000	0.008
B	2.92	3.07	0.115	0.121
C	0.15	0.31	0.006	0.012
D	5.59	6.22	0.220	0.245
E	6.60	7.11	0.260	0.280
HE	7.75	8.13	0.305	0.320
L	0.76	1.52	0.030	0.060



Recommended Pad Layout



DIM	Recommended Pad Layout (Reference ONLY)			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	4.60	-	0.181
K	3.20	-	0.126	-
M	2.00	-	0.079	-