



SMDJ5.0A(CA) - SMDJ170A(CA)

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR DIODE

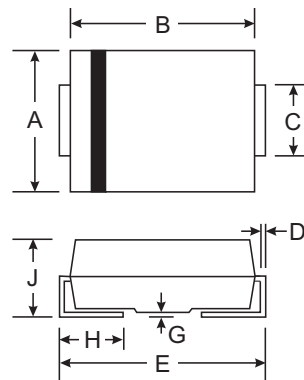
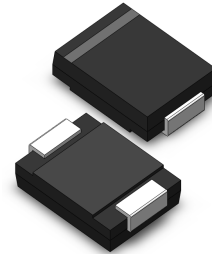
VOLTAGE RANGE: 5.0 - 170V
POWER: 3000Watts

Features

- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O

Mechanical Data

- Case: SMC/DO-214AB, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.21 grams (approx.)



SMC/DO-214AB		
Dim	Min	Max
A	5.59	6.22
B	6.60	7.11
C	2.75	3.18
D	0.15	0.31
E	7.75	8.13
G	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

Maximum Ratings and Electrical Characteristics $T_A = 25^\circ\text{C}$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation 10/1000 μ S Waveform (Note 1, 2) Figure 3	P _{PPM}	3000	W
Peak Pulse Current on 10/1000 μ S Waveform (Note 1) Figure 4	I _{PPM}	See Table 1	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 2, 3)	I _{FSM}	100	A
Operating and Storage Temperature Range	T _j , T _{STG}	-55 to +150	$^\circ\text{C}$

Note: 1. Non-repetitive current pulse, per Figure 4 and derated above $T_A = 25^\circ\text{C}$ per Figure 1.

2. Mounted on 8.0mm² copper pads to each terminal.

3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum.



Type Number		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RMW}
(Uni)	(Bi)	V _{RMW} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMDJ5.0	SMDJ5.0C	5.0	6.40	7.55	10	9.6	312.5	800.0
SMDJ5.0A	SMDJ5.0CA	5.0	6.40	7.25	10	9.2	326.1	800.0
SMDJ6.0	SMDJ6.0C	6.0	6.67	8.45	10	11.4	263.2	800.0
SMDJ6.0A	SMDJ6.0CA	6.0	6.67	7.67	10	10.3	291.3	800.0
SMDJ6.5	SMDJ6.5C	6.5	7.22	9.14	10	12.3	243.9	500.0
SMDJ6.5A	SMDJ6.5CA	6.5	7.22	8.30	10	11.2	267.9	500.0
SMDJ7.0	SMDJ7.0C	7.0	7.78	9.86	10	13.3	225.6	200.0
SMDJ7.0A	SMDJ7.0CA	7.0	7.78	8.95	10	12.0	250.0	200.0
SMDJ7.5	SMDJ7.5C	7.5	8.33	10.67	1.0	14.3	209.8	100.0
SMDJ7.5A	SMDJ7.5CA	7.5	8.33	9.58	1.0	12.9	232.6	100.0
SMDJ8.0	SMDJ8.0C	8.0	8.89	11.3	1.0	15.0	200.0	50.0
SMDJ8.0A	SMDJ8.0CA	8.0	8.89	10.23	1.0	13.6	220.6	50.0
SMDJ8.5	SMDJ8.5C	8.5	9.44	11.92	1.0	15.9	188.7	20.0
SMDJ8.5A	SMDJ8.5CA	8.5	9.44	10.82	1.0	14.4	208.3	20.0
SMDJ9.0	SMDJ9.0C	9.0	10.0	12.6	1.0	16.9	177.5	10.0
SMDJ9.0A	SMDJ9.0CA	9.0	10.0	11.5	1.0	15.4	194.8	10.0
SMDJ10	SMDJ10C	10	11.1	14.1	1.0	18.8	159.6	5.0
SMDJ10A	SMDJ10CA	10	11.1	12.8	1.0	17.0	176.5	5.0
SMDJ11	SMDJ11C	11	12.2	15.4	1.0	20.1	149.3	5.0
SMDJ11A	SMDJ11CA	11	12.2	14.0	1.0	18.2	164.8	5.0
SMDJ12	SMDJ12C	12	13.3	16.9	1.0	22.0	136.4	5.0
SMDJ12A	SMDJ12CA	12	13.3	15.3	1.0	19.9	150.8	5.0
SMDJ13	SMDJ13C	13	14.4	18.2	1.0	23.8	126.1	5.0
SMDJ13A	SMDJ13CA	13	14.4	16.5	1.0	21.5	139.5	5.0
SMDJ14	SMDJ14C	14	15.6	19.8	1.0	25.8	116.3	5.0
SMDJ14A	SMDJ14CA	14	15.6	17.9	1.0	23.2	129.3	5.0
SMDJ15	SMDJ15C	15	16.7	21.1	1.0	26.9	111.5	5.0
SMDJ15A	SMDJ15CA	15	16.7	19.2	1.0	24.4	123.0	5.0
SMDJ16	SMDJ16C	16	17.8	22.6	1.0	28.8	104.2	5.0
SMDJ16A	SMDJ16CA	16	17.8	20.5	1.0	26.0	115.4	5.0
SMDJ17	SMDJ17C	17	18.9	23.9	1.0	30.5	98.4	5.0
SMDJ17A	SMDJ17CA	17	18.9	21.7	1.0	27.6	108.7	5.0
SMDJ18	SMDJ18C	18	20.0	25.3	1.0	32.2	93.2	5.0
SMDJ18A	SMDJ18CA	18	20.0	23.3	1.0	29.2	102.7	5.0
SMDJ20	SMDJ20C	20	22.2	28.1	1.0	35.8	83.8	5.0
SMDJ20A	SMDJ20CA	20	22.2	25.5	1.0	32.4	92.6	5.0



Type Number		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RMW}
(Uni)	(Bi)	V _{RMW} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMDJ22	SMDJ22C	22	24.4	30.9	1.0	39.4	76.1	5.0
SMDJ22A	SMDJ22CA	22	24.4	28.0	1.0	35.5	84.5	5.0
SMDJ24	SMDJ24C	24	26.7	33.8	1.0	43.0	69.8	5.0
SMDJ24A	SMDJ24CA	24	26.7	30.7	1.0	38.9	77.1	5.0
SMDJ26	SMDJ26C	26	28.9	36.6	1.0	46.6	64.4	5.0
SMDJ26A	SMDJ26CA	26	28.9	33.2	1.0	42.1	71.3	5.0
SMDJ28	SMDJ28C	28	31.1	39.4	1.0	50.0	60.0	5.0
SMDJ28A	SMDJ28CA	28	31.1	35.8	1.0	45.4	66.1	5.0
SMDJ30	SMDJ30C	30	33.3	42.2	1.0	53.5	56.1	5.0
SMDJ30A	SMDJ30CA	30	33.3	38.3	1.0	48.4	62.0	5.0
SMDJ33	SMDJ33C	33	36.7	46.5	1.0	59.0	50.8	5.0
SMDJ33A	SMDJ33CA	33	36.7	42.2	1.0	53.3	56.3	5.0
SMDJ36	SMDJ36C	36	40.0	50.7	1.0	64.3	46.7	5.0
SMDJ36A	SMDJ36CA	36	40.0	46.0	1.0	58.1	51.6	5.0
SMDJ40	SMDJ40C	40	44.4	56.3	1.0	71.4	42.0	5.0
SMDJ40A	SMDJ40CA	40	44.4	51.1	1.0	64.5	46.5	5.0
SMDJ43	SMDJ43C	43	47.8	60.5	1.0	76.7	39.1	5.0
SMDJ43A	SMDJ43CA	43	47.8	54.9	1.0	69.4	43.2	5.0
SMDJ45	SMDJ45C	45	50.0	63.3	1.0	80.3	37.4	5.0
SMDJ45A	SMDJ45CA	45	50.0	57.5	1.0	72.7	41.3	5.0
SMDJ48	SMDJ48C	48	53.3	67.5	1.0	85.5	35.1	5.0
SMDJ48A	SMDJ48CA	48	53.3	61.3	1.0	77.4	38.8	5.0
SMDJ51	SMDJ51C	51	56.7	71.8	1.0	91.1	32.9	5.0
SMDJ51A	SMDJ51CA	51	56.7	65.2	1.0	82.4	36.4	5.0
SMDJ54	SMDJ54C	54	60.0	76.0	1.0	96.3	31.2	5.0
SMDJ54A	SMDJ54CA	54	60.0	69.0	1.0	87.1	34.4	5.0
SMDJ58	SMDJ58C	58	64.4	81.6	1.0	103	29.1	5.0
SMDJ58A	SMDJ58CA	58	64.4	74.1	1.0	93.6	32.1	5.0
SMDJ60	SMDJ60C	60	66.7	84.5	1.0	107	28.0	5.0
SMDJ60A	SMDJ60CA	60	66.7	76.7	1.0	96.8	31.0	5.0
SMDJ64	SMDJ64C	64	71.1	90.1	1.0	114	26.3	5.0
SMDJ64A	SMDJ64CA	64	71.1	81.8	1.0	103	29.1	5.0
SMDJ70	SMDJ70C	70	77.8	98.6	1.0	125	24.0	5.0
SMDJ70A	SMDJ70CA	70	77.8	89.5	1.0	113	26.5	5.0
SMDJ75	SMDJ75C	75	83.0	105.7	1.0	134	22.4	5.0
SMDJ75A	SMDJ75CA	75	83.0	95.8	1.0	121	24.8	5.0



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(Uni)	(Bi)	V _{RMW} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMDJ78	SMDJ78C	78	86.0	109.8	1.0	139	21.6	5.0
SMDJ78A	SMDJ78CA	78	86.0	99.7	1.0	126	23.8	5.0
SMDJ85	SMDJ85C	85	94.0	119.2	1.0	151	19.9	5.0
SMDJ85A	SMDJ85CA	85	94.0	108.2	1.0	137	21.9	5.0
SMDJ90	SMDJ90C	90	100	126.5	1.0	160	18.8	5.0
SMDJ90A	SMDJ90CA	90	100	115.5	1.0	146	20.5	5.0
SMDJ100	SMDJ100C	100	111	141.0	1.0	179	16.8	5.0
SMDJ100A	SMDJ100CA	100	111	128.0	1.0	162	18.5	5.0
SMDJ110	SMDJ110C	110	122	154.5	1.0	196	15.3	5.0
SMDJ110A	SMDJ110CA	110	122	140.5	1.0	177	16.9	5.0
SMDJ120	SMDJ120C	120	133	169.0	1.0	214	14.0	5.0
SMDJ120A	SMDJ120CA	120	133	153.0	1.0	193	15.5	5.0
SMDJ130	SMDJ130C	130	144	182.5	1.0	231	13.0	5.0
SMDJ130A	SMDJ130CA	130	144	165.5	1.0	209	14.4	5.0
SMDJ150	SMDJ150C	150	167	211.5	1.0	268	11.2	5.0
SMDJ150A	SMDJ150CA	150	167	192.5	1.0	243	12.3	5.0
SMDJ160	SMDJ160C	160	178	226.0	1.0	287	10.5	5.0
SMDJ160A	SMDJ160CA	160	178	205.0	1.0	259	11.6	5.0
SMDJ170	SMDJ170C	170	189	239.5	1.0	304	9.9	5.0
SMDJ170A	SMDJ170CA	170	189	217.5	1.0	275	10.9	5.0



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

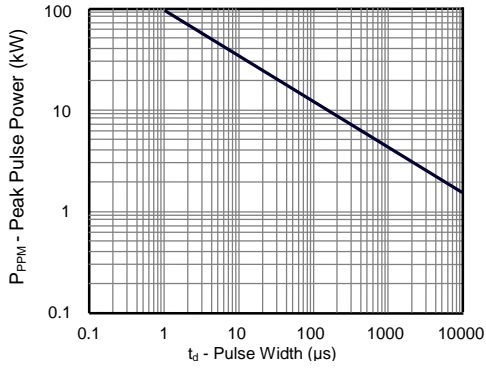


Figure 1 - Peak Pulse Power Rating Curve

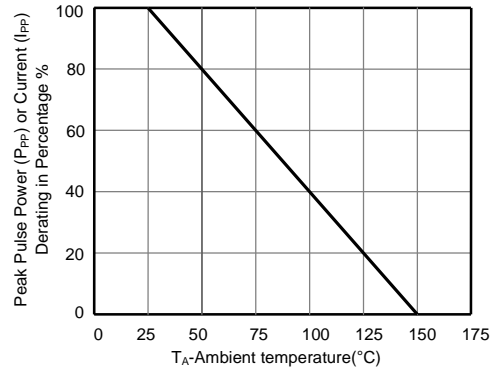


Figure 2 - Pulse Derating Curve

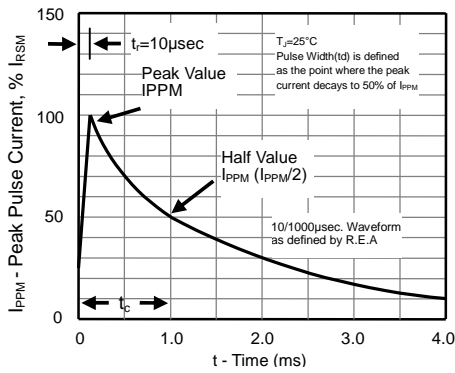


Figure 3 - Pulse Waveform

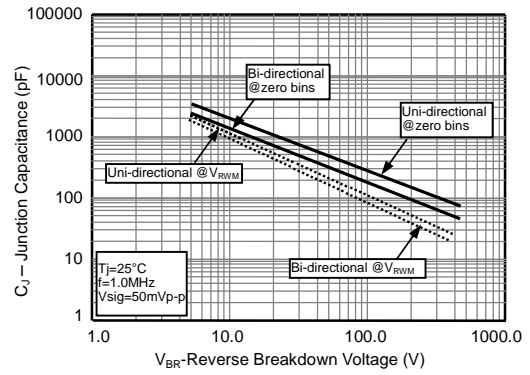


Figure 4 - Typical Junction Capacitance

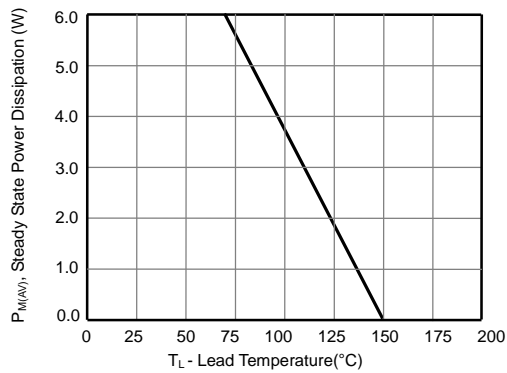


Figure 5 - Steady State Power Derating Curve

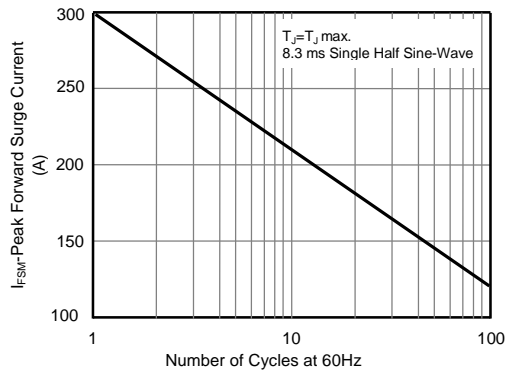


Figure 6 - Maximum Non-Repetitive Surge Current