

SMBJxxD Series

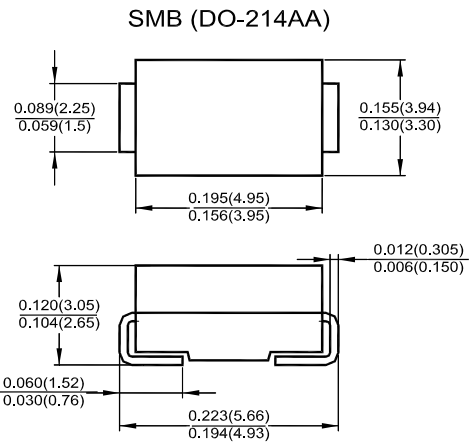
Transient Voltage Suppressors

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- 600 W peak pulse power capability
- Excellent clamping capability

Mechanical Data

- **Case:** SMB (DO-214AA) molded plastic
- **Terminals:** Solder plated
- **Polarity:** For unidirectional types the color band denotes the cathode (except for bidirectional types)
- **Mounting Position:** Any



Dimensions in inches and (millimeters)

Description

- Devices for bidirectional applications
- For bidirectional use C or CA suffix for types SMBJ5.0 thru types SMBJ170A (e.g. SMBJ5.0C, SMBJ170CA)
- Electrical characteristics apply in both directions

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

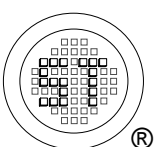
Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation ¹⁾	P_{PPM}	Min. 600	W
Peak Pulse Current ¹⁾	I_{PPM}	See Next Table	A
Steady State Power Dissipation ²⁾	P_{PK}	2	W
Peak Forward Surge Current, Unidirectional only ³⁾	I_{FSM}	100	A
Maximum Instantaneous Forward Voltage at 50 A, Unidirectional only ⁴⁾	V_F	3.5 / 5	V
Operating Junction and Storage Temperature Range	T_j, T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Pulse with a 10 / 1000 μs waveform.

²⁾ Mounted on a 5 X 5 X 0.013 mm Copper pads to each terminal.

³⁾ Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum. For uni-directional devices only.

⁴⁾ V_F : 3.5 V Max. for types SMBJ5.0~SMBJ90, V_F : 5 V Max. for types SMBJ100~SMBJ170



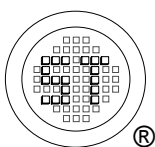
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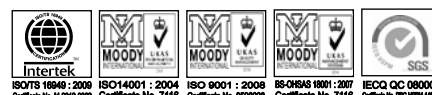
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Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Uni-directional / Bi-directional Type ³⁾	Stand-off Voltage V_{WM} (V)	Breakdown Voltage ¹⁾		Test Current I_T (mA)	Maximum Clamping Voltage V_C (V) at I_{PPM}	Maximum Peak Pulse Current I_{PPM} (A)	Maximum Reverse Leakage ²⁾ I_D (μA) at V_{WM}
		V_{BR} (V) Min. at I_T	V_{BR} (V) Max. at I_T				
SMBJ5.0D / CD	5	6.4	7.3	10	9.6	65	800
SMBJ5.0AD / CAD	5	6.4	7	10	9.2	68	800
SMBJ6.0D / CD	6	6.67	8.15	10	11.4	55	800
SMBJ6.0AD / CAD	6	6.67	7.37	10	10.3	61	800
SMBJ6.5D / CD	6.5	7.22	8.82	10	12.3	51	500
SMBJ6.5AD / CAD	6.5	7.22	7.98	10	11.2	56	500
SMBJ7.0D / CD	7	7.78	9.51	10	13.3	47	200
SMBJ7.0AD / CAD	7	7.78	8.6	10	12	52	200
SMBJ7.5D / CD	7.5	8.33	10.3	1	14.3	44	100
SMBJ7.5AD / CAD	7.5	8.33	9.21	1	12.9	48	100
SMBJ8.0D / CD	8	8.89	10.9	1	15	42	50
SMBJ8.0AD / CAD	8	8.89	9.83	1	13.6	46	50
SMBJ8.5D / CD	8.5	9.44	11.5	1	15.9	39	20
SMBJ8.5AD / CAD	8.5	9.44	10.4	1	14.4	43	20
SMBJ9.0D / CD	9	10	12.2	1	16.9	37	10
SMBJ9.0AD / CAD	9	10	11.1	1	15.4	40	10
SMBJ10D / CD	10	11.1	13.6	1	18.8	33	5
SMBJ10AD / CAD	10	11.1	12.3	1	17	37	5
SMBJ11D / CD	11	12.2	14.9	1	20.1	31	5
SMBJ11AD / CAD	11	12.2	13.5	1	18.2	34	5
SMBJ12D / CD	12	13.3	16.3	1	22	28	5
SMBJ12AD / CAD	12	13.3	14.7	1	19.9	31	5
SMBJ13D / CD	13	14.4	17.6	1	23.8	26	5
SMBJ13AD / CAD	13	14.4	15.9	1	21.5	29	5
SMBJ14D / CD	14	15.6	19.1	1	25.8	24.4	5
SMBJ14AD / CAD	14	15.6	17.2	1	23.2	27	5
SMBJ15D / CD	15	16.7	20.4	1	26.9	23.1	5
SMBJ15AD / CAD	15	16.7	18.5	1	24.4	25.1	5
SMBJ16D / CD	16	17.8	21.8	1	28.8	21.8	5
SMBJ16AD / CAD	16	17.8	19.7	1	26	24.2	5
SMBJ17D / CD	17	18.9	23.1	1	30.5	20	5
SMBJ17AD / CAD	17	18.9	20.9	1	27.6	22.8	5
SMBJ18D / CD	18	20	24.4	1	32.2	19.5	5
SMBJ18AD / CAD	18	20	22.1	1	29.2	21.5	5
SMBJ20D / CD	20	22.2	27.1	1	35.8	17.6	5
SMBJ20AD / CAD	20	22.2	24.5	1	32.4	19.4	5
SMBJ22D / CD	22	24.4	29.8	1	39.4	15	5
SMBJ22AD / CAD	22	24.4	26.9	1	35.5	17.7	5
SMBJ24D / CD	24	26.7	32.6	1	43	14.6	5
SMBJ24AD / CAD	24	26.7	29.5	1	38.9	16	5
SMBJ26D / CD	26	28.9	35.3	1	46.6	13.5	5
SMBJ26AD / CAD	26	28.9	31.9	1	42.1	14.9	5
SMBJ28D / CD	28	31.1	38	1	50	12.6	5
SMBJ28AD / CAD	28	31.1	34.4	1	45.4	13.8	5
SMBJ30D / CD	30	33.3	40.7	1	53.5	11.7	5
SMBJ30AD / CAD	30	33.3	36.8	1	48.4	13	5
SMBJ33D / CD	33	36.7	44.9	1	59	10.6	5
SMBJ33AD / CAD	33	36.7	40.6	1	53.3	11.8	5



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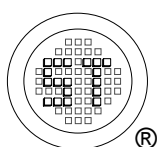
Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Uni-directional / Bi-directional Type ³⁾	Stand-off Voltage V_{WM} (V)	Breakdown Voltage ¹⁾		Test Current I_T (mA)	Maximum Clamping Voltage V_C (V) at I_{PPM}	Maximum Peak Pulse Current I_{PPM} (A)	Maximum Reverse Leakage ²⁾ I_D (μA) at V_{WM}
		V_{BR} (V) Min. at I_T	V_{BR} (V) Max. at I_T				
SMBJ36D / CD	36	40	48.9	1	64.3	9.8	5
SMBJ36AD / CAD	36	40	44.2	1	58.1	10.8	5
SMBJ40D / CD	40	44.4	54.3	1	71.4	8.8	5
SMBJ40AD / CAD	40	44.4	49.1	1	64.5	9.7	5
SMBJ43D / CD	43	47.8	58.4	1	76.7	8.2	5
SMBJ43AD / CAD	43	47.8	52.8	1	69.4	9	5
SMBJ45D / CD	45	50	61.1	1	80.3	7.8	5
SMBJ45AD / CAD	45	50	55.3	1	72.7	8.6	5
SMBJ48D / CD	48	53.3	65.1	1	85.5	7.3	5
SMBJ48AD / CAD	48	53.3	58.9	1	77.4	8.1	5
SMBJ51D / CD	51	56.7	69.3	1	91.1	6.9	5
SMBJ51AD / CAD	51	56.7	62.7	1	82.4	7.6	5
SMBJ54D / CD	54	60	73.3	1	96.3	6.5	5
SMBJ54AD / CAD	54	60	66.3	1	87.1	7.2	5
SMBJ58D / CD	58	64.4	78.7	1	103	6.1	5
SMBJ58AD / CAD	58	64.4	71.2	1	93.6	6.7	5
SMBJ60D / CD	60	66.7	81.5	1	107	5.8	5
SMBJ60AD / CAD	60	66.7	73.7	1	96.8	6.5	5
SMBJ64D / CD	64	71.1	86.9	1	114	5.5	5
SMBJ64AD / CAD	64	71.1	78.6	1	103	6.1	5
SMBJ70D / CD	70	77.8	95.1	1	125	5	5
SMBJ70AD / CAD	70	77.8	86	1	113	5.5	5
SMBJ75D / CD	75	83.3	102	1	134	4.7	5
SMBJ75AD / CAD	75	83.3	92.1	1	121	5.2	5
SMBJ78D / CD	78	86.7	106	1	139	4.5	5
SMBJ78AD / CAD	78	86.7	95.8	1	126	5	5
SMBJ85D / CD	85	94.4	115	1	151	4.1	5
SMBJ85AD / CAD	85	94.4	104	1	137	4.6	5
SMBJ90D / CD	90	100	122	1	160	3.9	5
SMBJ90AD / CAD	90	100	111	1	146	4.3	5
SMBJ100D / CD	100	111	136	1	179	3.5	5
SMBJ100AD / CAD	100	111	123	1	162	3.8	5
SMBJ110D / CD	110	122	149	1	196	3.2	5
SMBJ110AD / CAD	110	122	135	1	177	3.5	5
SMBJ120D / CD	120	133	163	1	214	2.9	5
SMBJ120AD / CAD	120	133	147	1	193	3.2	5
SMBJ130D / CD	130	144	176	1	231	2.7	5
SMBJ130AD / CAD	130	144	159	1	209	3	5
SMBJ150D / CD	150	167	204	1	268	2.3	5
SMBJ150AD / CAD	150	167	185	1	243	2.5	5
SMBJ160D / CD	160	178	218	1	287	2.2	5
SMBJ160AD / CAD	160	178	197	1	259	2.4	5
SMBJ170D / CD	170	189	231	1	304	2	5
SMBJ170AD / CAD	170	189	209	1	275	2.2	5

¹⁾ V_{BR} measured after I_T applied for 300 μs square wave pulse or equivalent.

²⁾ For bidirectional types having V_{RWM} of 10 V and less, the I_D limit is doubled.

³⁾ For bidirectional use C or CA suffix types, the electrical characteristics apply in both directions.



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