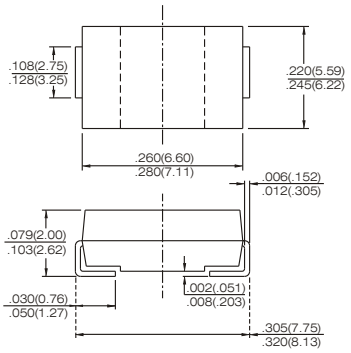
SMDJ5.0 thru SMDJ440CA

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

REVERSE VOLTAGE **6.8** to **520** Volts PEAK PULSE POWER **3000** WATTS

SMC/DO-214AB



Dimensions in inches and (millimeters)

FEATURES

- Glass passivated chip
- 3000 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle) 0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time

MECHANICAL DATA

Case : Molded plastic
Epoxy : UL 94V-0 rate flame retardant
Lead : Solderable per MIL-STD-750, Method 2026
Polarity : Color band denotes positive end (cathode) except bidirectional
Mounting position : Any

RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Parameter	Symbol	Value	UNIT
Peak power dissipation with a 10/1000μs waveform	P_{PP}	Minimum 3000	Watts
Peak pulse current wih a 10/1000μs waveform	I_{PP}	See Next Table	Amps.
Power dissipation on infinite heatsink at T_L = 75 °C	P_D	6.0	Watts
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(1)	I_{FSM}	300	Amps.
Maximum instantaneous forward voltage at 100 A for unidirectional only(2)	V_F	3.5/5.0	Volts
Operating junction and storage temperature range	T_J, T_{STG}	–55 to +150	°C

Note:

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

(2) VF= 3.5V on SMDJ5.0 thru SMDJ90A devices and VF= 5.0V onSMDJ100 thru SMDJ440A devices.

SMDJ5.0 thru SMDJ440CA

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

TECHNOLOGIES SMDJ SERIES		Device Marking Code		Breakdown voltage VBR @ IT			Maximum Reverse Leakage IR(uA) @VRWM	Working PeakReverse Voltage VRWM (Volts)	Maximum Reverse Surge Current Ipp(A) @10x1000us sinewave	Maximum Clamping Voltage Vc (Volts) @Ipp
Uni-polar	Bi-polar	Uni	Bi	Min (V)	Max (V)	IT (mA)				
SMDJ5.0	SMDJ5.0C	RDD	DDD	6.40	7.30	10	1000	5.0	313	9.6
SMDJ5.0A	SMDJ5.0CA	RDE	DDE	6.40	7.00	10	1000	5.0	326	9.2
SMDJ6.0	SMDJ6.0C	RDF	DDF	6.67	8.15	10	1000	6.0	263	11.4
SMDJ6.0A	SMDJ6.0CA	RDG	DDG	6.67	7.37	10	1000	6.0	291	10.3
SMDJ6.5	SMDJ6.5C	RDH	DDH	7.22	8.82	10	500	6.5	244	12.3
SMDJ6.5A	SMDJ6.5CA	RDK	DDK	7.22	7.98	10	500	6.5	268	11.2
SMDJ7.0	SMDJ7.0C	RDL	DDL	7.78	9.51	10	200	7.0	226	13.3
SMDJ7.0A	SMDJ7.0CA	PDM	DDM	7.78	8.60	10	200	7.0	250	12.0
SMDJ7.5	SMDJ7.5C	PDN	DDN	8.33	10.2	1	100	7.5	210	14.3
SMDJ7.5A	SMDJ7.5CA	PDP	DDP	8.33	9.21	1	100	7.5	233	12.9
SMDJ8.0	SMDJ8.0C	PDQ	DDQ	8.89	10.9	1	50	8.0	200	15.0
SMDJ8.0A	SMDJ8.0CA	PDR	DDR	8.89	9.83	1	50	8.0	221	13.6
SMDJ8.5	SMDJ8.5C	PDS	DDS	9.44	11.5	1	25	8.5	189	15.9
SMDJ8.5A	SMDJ8.5CA	PDT	DDT	9.44	10.4	1	25	8.5	208	14.4
SMDJ9.0	SMDJ9.0C	PDU	DDU	10.0	12.2	1	10	9.0	178	16.9
SMDJ9.0A	SMDJ9.0CA	PDV	DDV	10.0	11.1	1	10	9.0	195	15.4
SMDJ10	SMDJ10C	PDW	DDW	11.1	13.6	1	5.0	10	160	18.8
SMDJ10A	SMDJ10CA	PDX	DDX	11.1	12.3	1	5.0	10	176	17.0
SMDJ11	SMDJ11C	PDY	DDY	12.2	14.9	1	5.0	11	149	20.1
SMDJ11A	SMDJ11CA	PDZ	DDZ	12.2	13.5	1	5.0	11	165	18.2
SMDJ12	SMDJ12C	PED	DED	13.3	16.3	1	5.0	12	136	22.0
SMDJ12A	SMDJ12CA	PEE	DEE	13.3	14.7	1	5.0	12	151	19.9
SMDJ13	SMDJ13C	PEF	DEF	14.4	17.6	1	5.0	13	126	23.8
SMDJ13A	SMDJ13CA	PEG	DEG	14.4	15.9	1	5.0	13	140	21.5
SMDJ14	SMDJ14C	PEH	DEH	15.6	19.1	1	5.0	14	116	25.8
SMDJ14A	SMDJ14CA	PEK	DEK	15.6	17.2	1	5.0	14	129	23.2
SMDJ15	SMDJ15C	PEL	DEL	16.7	20.4	1	5.0	15	112	26.9
SMDJ15A	SMDJ15CA	PEM	DEM	16.7	18.5	1	5.0	15	123	24.4
SMDJ16	SMDJ16C	PEN	DEN	17.8	21.8	1	5.0	16	104	28.8
SMDJ16A	SMDJ16CA	PEP	DEP	17.8	19.7	1	5.0	16	115	26.0
SMDJ17	SMDJ17C	PEQ	DEQ	18.9	23.1	1	5.0	17	98.4	30.5
SMDJ17A	SMDJ17CA	PER	DER	18.9	20.9	1	5.0	17	109	27.6
SMDJ18	SMDJ18C	PES	DES	20.0	24.4	1	5.0	18	93.2	32.2
SMDJ18A	SMDJ18CA	PET	DET	20.0	22.1	1	5.0	18	103	29.2
SMDJ19	SMDJ19C	PEA	DEA	21.1	25.8	1	5.0	19	88.2	34.0
SMDJ19A	SMDJ19CA	PEB	DEB	21.1	23.3	1	5.0	19	97.5	30.8
SMDJ20	SMDJ20C	PEU	DEU	22.2	27.1	1	5.0	20	83.8	35.8
SMDJ20A	SMDJ20CA	PEV	DEV	22.2	24.5	1	5.0	20	92.6	32.4
SMDJ22	SMDJ22C	PEW	DEW	24.4	29.8	1	5.0	22	76.1	39.4
SMDJ22A	SMDJ22CA	PEX	DEX	24.4	26.9	1	5.0	22	84.5	35.5
SMDJ24	SMDJ24C	PEY	DEY	26.7	32.6	1	5.0	24	69.8	43.0
SMDJ24A	SMDJ24CA	PEZ	DEZ	26.7	29.5	1	5.0	24	77.1	38.9
SMDJ26	SMDJ26C	PFD	DFD	28.9	35.3	1	5.0	26	64.4	46.6
SMDJ26A	SMDJ26CA	PFE	DFE	28.9	31.9	1	5.0	26	71.3	42.1
SMDJ28	SMDJ28C	PFF	DFF	31.1	38.0	1	5.0	28	60.0	50.0
SMDJ28A	SMDJ28CA	PFG	DFG	31.1	34.4	1	5.0	28	66.1	45.4
SMDJ30	SMDJ30C	PFH	DFH	33.3	40.7	1	5.0	30	56.1	53.5
SMDJ30A	SMDJ30CA	PFK	DFK	33.3	36.8	1	5.0	30	62.0	48.4
SMDJ33	SMDJ33C	PFL	DFL	36.7	44.9	1	5.0	33	50.8	59.0
SMDJ33A	SMDJ33CA	PFM	DFM	36.7	40.6	1	5.0	33	56.3	53.3
SMDJ36	SMDJ36C	PFN	DFN	40.0	48.9	1	5.0	36	46.7	64.3
SMDJ36A	SMDJ36CA	PFP	DFP	40.0	44.2	1	5.0	36	51.6	58.1
SMDJ40	SMDJ40C	PFQ	DFQ	44.4	54.3	1	5.0	40	42.0	71.4
SMDJ40A	SMDJ40CA	PFR	DFR	44.4	49.1	1	5.0	40	46.5	64.5

SMDJ5.0 thru SMDJ440CA

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

TECHNOLOGIES SMDJ SERIES		Device Marking Code		Breakdown voltage VBR @ IT			Maximum Reverse Leakage IR(uA) @VRWM	Working PeakReverse Voltage VRWM (Volts)	Maximum Reverse Surge Current Ipp(A) @10x1000us sinewave	Maximum Clamping Voltage Vc (Volts) @Ipp
Uni-polar	Bi-polar	Uni	Bi	Min (V)	Max (V)	IT (mA)				
SMDJ43	SMDJ43C	PFS	DFS	47.8	58.4	1	5.0	43	39.1	76.7
SMDJ43A	SMDJ43CA	PFT	DFT	47.8	52.8	1	5.0	43	43.2	69.4
SMDJ45	SMDJ45C	PFU	DFU	50.0	61.1	1	5.0	45	37.4	80.3
SMDJ45A	SMDJ45CA	PFV	DFV	50.0	55.3	1	5.0	45	41.3	72.7
SMDJ48	SMDJ48C	PFW	DFW	53.3	65.1	1	5.0	48	35.1	85.5
SMDJ48A	SMDJ48CA	PFX	DFX	53.3	58.9	1	5.0	48	38.8	77.4
SMDJ51	SMDJ51C	PFY	DFY	56.7	69.3	1	5.0	51	32.9	91.1
SMDJ51A	SMDJ51CA	PFZ	DFZ	56.7	62.7	1	5.0	51	36.4	82.4
SMDJ54	SMDJ54C	RGD	DGD	60.0	73.3	1	5.0	54	31.2	96.3
SMDJ54A	SMDJ54CA	RGE	DGE	60.0	66.3	1	5.0	54	34.4	87.1
SMDJ58	SMDJ58C	RGF	DGF	64.4	78.7	1	5.0	58	29.1	103
SMDJ58A	SMDJ58CA	PGG	DGG	64.4	71.2	1	5.0	58	32.1	93.6
SMDJ60	SMDJ60C	RGH	DGH	66.7	81.5	1	5.0	60	28.0	107
SMDJ60A	SMDJ60CA	PGK	DGK	66.7	73.7	1	5.0	60	31.0	96.8
SMDJ64	SMDJ64C	PGL	DGL	71.1	86.9	1	5.0	64	26.3	114
SMDJ64A	SMDJ64CA	PGM	DGM	71.1	78.6	1	5.0	64	29.1	103
SMDJ70	SMDJ70C	PGN	DGN	77.8	95.1	1	5.0	70	24.0	125
SMDJ70A	SMDJ70CA	PGP	DGP	77.8	86.0	1	5.0	70	26.5	113
SMDJ75	SMDJ75C	PGQ	DGQ	83.3	102	1	5.0	75	22.4	134
SMDJ75A	SMDJ75CA	PGR	DGR	83.3	92.1	1	5.0	75	24.8	121
SMDJ78	SMDJ78C	PGS	DGS	86.7	106	1	5.0	78	21.6	139
SMDJ78A	SMDJ78CA	PGT	DGT	86.7	95.8	1	5.0	78	23.8	126
SMDJ80	SMDJ80C	PGA	DGA	89.0	109	1	5.0	80	20.9	143
SMDJ80A	SMDJ80CA	PGB	DGB	88.8	97.6	1	5.0	80	23.1	130
SMDJ85	SMDJ85C	PGU	DGU	94.4	115	1	5.0	85	19.9	151
SMDJ85A	SMDJ85CA	PGV	DGV	94.4	104	1	5.0	85	21.9	137
SMDJ90	SMDJ90C	PGW	DGW	100	122	1	5.0	90	18.8	160
SMDJ90A	SMDJ90CA	PGX	DGX	100	111	1	5.0	90	20.5	146
SMDJ100	SMDJ100C	PGY	DGY	111	136	1	5.0	100	16.8	179
SMDJ100A	SMDJ100CA	PGZ	DGZ	111	123	1	5.0	100	18.5	162
SMDJ110	SMDJ110C	PHD	DHD	122	149	1	5.0	110	15.3	196
SMDJ110A	SMDJ110CA	PHE	DHE	122	135	1	5.0	110	16.9	177
SMDJ120	SMDJ120C	PHF	DHF	133	163	1	5.0	120	14.0	214
SMDJ120A	SMDJ120CA	PHG	DHG	133	147	1	5.0	120	15.5	193
SMDJ130	SMDJ130C	PHH	DHH	144	176	1	5.0	130	13.0	231
SMDJ130A	SMDJ130CA	PHK	DHK	144	159	1	5.0	130	14.4	209
SMDJ140	SMDJ140C	PHA	DHA	156	190	1	5.0	140	12.0	251
SMDJ140A	SMDJ140CA	PHB	DHB	155	171	1	5.0	140	13.2	227
SMDJ150	SMDJ150C	PHL	DHL	167	204	1	5.0	150	11.2	268
SMDJ150A	SMDJ150CA	PHM	DHM	167	185	1	5.0	150	12.3	243
SMDJ160	SMDJ160C	PHN	DHN	178	218	1	5.0	160	10.5	287
SMDJ160A	SMDJ160CA	PHP	DHP	178	197	1	5.0	160	11.6	259
SMDJ170	SMDJ170C	PHQ	DHQ	189	231	1	5.0	170	9.87	304
SMDJ170A	SMDJ170CA	PHR	DHR	189	209	1	5.0	170	10.9	275
SMDJ180	SMDJ180C	PHS	DHS	200	245	1	5.0	180	9.31	322
SMDJ180A	SMDJ180CA	PHT	DHT	200	220	1	5.0	180	10.3	292
SMDJ190	SMDJ190C	PHU	DHU	211	258	1	5.0	190	8.82	340
SMDJ190A	SMDJ190CA	PHV	DHV	211	232	1	5.0	190	9.75	308
SMDJ200A	SMDJ200CA	PHW	DHW	224	247	1	5	200	9.26	324
SMDJ220A	SMDJ220CA	PHX	DHX	246	272	1	5	220	8.43	356
SMDJ250A	SMDJ250CA	PHZ	DHZ	279	309	1	5	250	7.41	405
SMDJ300A	SMDJ300CA	PJE	DJE	335	371	1	5	300	6.17	486
SMDJ350A	SMDJ350CA	PJG	DJG	391	432	1	5	350	5.29	567
SMDJ400A	SMDJ400CA	PJK	DJK	447	494	1	5	400	4.63	648

SMDJ5.0 thru SMDJ440CA

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

TECHNOLOGIES SMDJ SERIES		Device Marking Code		Breakdown voltage VBR @ **IT**			Maximum Reverse Leakage **IR(uA)** @VRWM	Working PeakReverse Voltage **VRWM (Volts)**	Maximum Reverse Surge Current **Ipp(A)** @10x1000us sinewave	Maximum Clamping Voltage **Vc (Volts)** @Ipp
Uni-polar	Bi-polar	Uni	Bi	**Min (V)**	**Max (V)**	**IT (mA)**				
SMDJ440A	SMDJ440CA	PJM	DJM	492	543	1	5	440	4.21	713

Note:

1. Suffix 'A ' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device.
2. Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices.
3. For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .

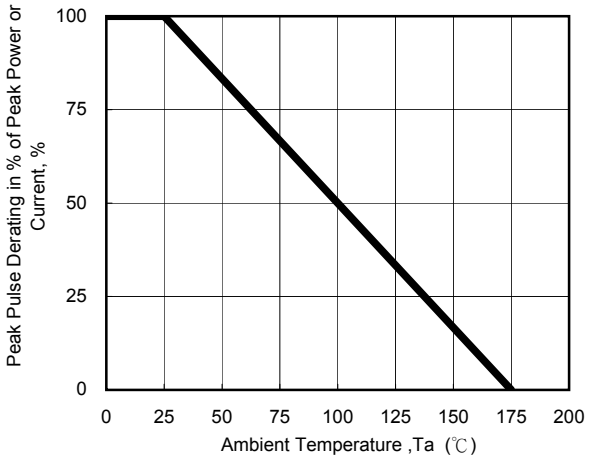


Fig. 1 - Pulse Derating Curve

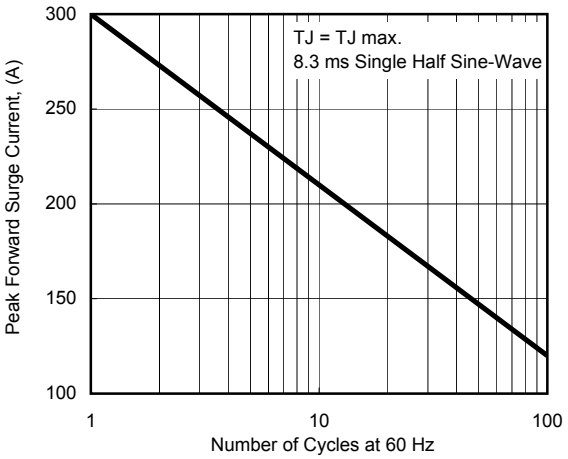


Fig. 2 - Maximum Non-Repetitive Surge Current

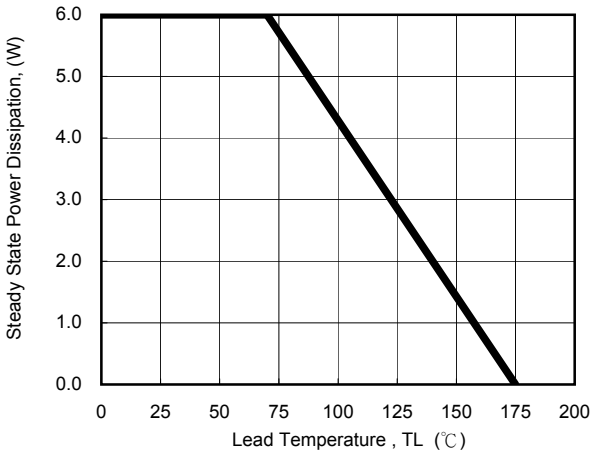


Fig. 3 - Steady State Power Derating Curve

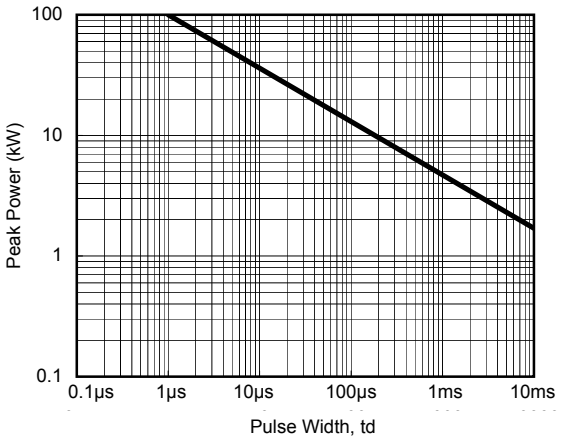


Fig. 4 - Peak Pulse Power Rating Curve

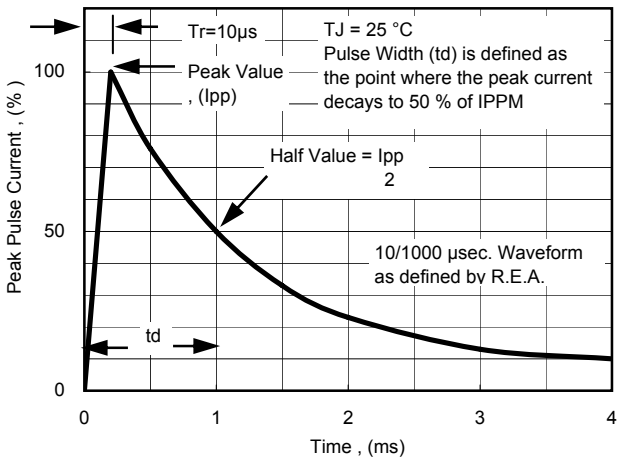


Fig. 5 - Pulse Waveform