



Surface Mount TRANSZORB Transient Voltage Suppressors



Stand-off Voltage 5.0 to 440V
Peak Pulse Power 1500W

Features

- *Underwriters Laboratory Recognition under UL standard for safety 497B: Isolated Loop Circuit Protection
- *Low profile package with built-in strain relief for surface mounted applications
- *Glass passivated junction
- *Low incremental surge resistance, excellent clamping capability
- *1500W peak pulse power capability with a 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%
- *Very fast response time
- *High temperature soldering guaranteed: 250-C/10 seconds at terminals

Mechanical Data

Case: JEDEC DO-214AB molded plastic over passivated junction

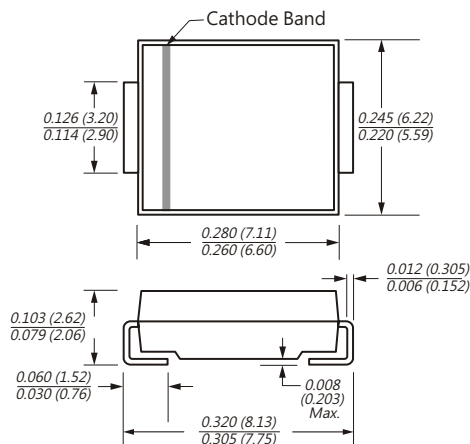
Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

Polarity: For unidirectional types the band denotes the cathode, which is positive with respect to the anode under normal TVS operation

Weight: 0.007 oz., 0.21 g

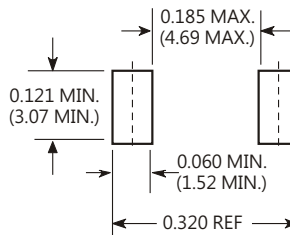
Flammability: Epoxy is rated UL 94V-0

DO-214AB (SMC J-Bend)



Dimensions in inches and (millimeters)

Mounting Pad Layout



Devices for Bidirectional Applications

For bi-directional devices, use suffix C or CA (e.g. SMCJ10C, SMCJ10CA). Electrical characteristics apply in both directions.

Maximum Ratings & Thermal Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 μ s waveform ⁽¹⁾⁽²⁾	P _{PPM}	Minimum 1500	W
Peak pulse current with a 10/1000 μ s Waveform ⁽¹⁾	I _{PPM}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave ⁽²⁾ uni-directional only	I _{FSM}	200	A
Typical thermal resistance, junction to ambient ⁽³⁾	R θ A	75	°C/W
Typical thermal resistance, junction to lead	R θ JA	15	°C/W
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 T_A = 25 °C per Fig. 2

(2) Mounted on 0.31 x 0.31 (8.0 x 8.0mm) copper pads to each terminal

(3) Mounted on minimum recommended pad layout



Electrical Characteristics

Ratings at 25 °C ambient temperature unless otherwise specified. $V_F = 3.5V$ at $I_F = 50A$ (uni-directional only)

Device Type Modified "J" Bend Lead	Device Marking Code		Break Down Voltage $V_{(BR)}$ at $I_T^{(1)}$ (V)		Test Current I_T (mA)	Stand-off Voltage V_{WM} (V)	Maximun Reverse Leakage a t V_{WM} I_D (eA) ⁽³⁾	Maximun Peak Pulse Surge Current I_{PPM} (A) ⁽²⁾	Maximun Clamping Voltage at I_{PPM} V_C (V)
	UNI	BI	Min	Max					
SMCJ5.0	GDD	BDD	6.40	7.30	10	5.0	800	156	9.6
SMCJ5.0A	GDE	BDE	6.40	7.00	10	5.0	800	163	9.2
SMCJ6.0	GDF	BDF	6.67	8.15	10	6.0	800	132	11.4
SMCJ6.0A	GDG	BDG	6.67	7.37	10	6.0	800	146	10.3
SMCJ6.5	GDH	BDH	7.22	8.82	10	6.5	500	122	12.3
SMCJ6.5A	GDK	BDK	7.22	7.98	10	6.5	500	134	11.2
SMCJ7.0	GDL	BDL	7.78	9.51	10	7.0	200	113	13.3
SMCJ7.0A	GDM	BDM	7.78	8.60	10	7.0	200	125	12.0
SMCJ7.5	GDN	BDN	8.33	10.20	1.0	7.5	100	105	14.3
SMCJ7.5A	GDP	BDP	8.33	9.21	1.0	7.5	100	116	12.9
SMCJ8.0	GDQ	BDQ	8.89	10.90	1.0	8.0	50	100	15.0
SMCJ8.0A	GDR	BDR	8.89	9.83	1.0	8.0	50	110	13.6
SMCJ8.5	GDS	BDS	9.44	11.50	1.0	8.5	10	94.3	15.9
SMCJ8.5A	GDT	BDT	9.44	10.40	1.0	8.5	10	104	14.4
SMCJ9.0	GDV	BDV	10.00	12.20	1.0	9.0	5.0	88.8	16.9
SMCJ9.0A	GDV	BDV	10.00	11.10	1.0	9.0	5.0	97.4	15.4
SMCJ10	GDW	BDW	11.10	13.60	1.0	10.0	5.0	79.8	18.8
SMCJ10A	GDX	BDX	11.10	12.30	1.0	10.0	5.0	88.2	17.0
SMCJ11	GDY	BDY	12.20	14.90	1.0	11.0	5.0	74.6	20.1
SMCJ11A	GDZ	BDZ	12.20	13.50	1.0	11.0	5.0	82.4	18.2
SMCJ12	GED	BED	13.30	16.30	1.0	12.0	5.0	68.2	22.0
SMCJ12A	GEE	BEE	13.30	14.70	1.0	12.0	5.0	75.4	19.9
SMCJ13	GEF	BEF	14.40	17.60	1.0	13.0	5.0	63.0	23.8
SMCJ13A	GEG	BEG	14.40	15.90	1.0	13.0	5.0	69.8	21.5
SMCJ14	GEH	BEH	15.60	19.10	1.0	14.0	5.0	58.1	25.8
SMCJ14A	GEK	BEK	15.60	17.20	1.0	14.0	5.0	64.7	23.2
SMCJ15	GEL	BEL	16.70	20.40	1.0	15.0	5.0	55.8	26.9
SMCJ15A	GEM	BEM	16.70	18.50	1.0	15.0	5.0	61.5	24.4
SMCJ16	GEN	BEN	17.80	21.80	1.0	16.0	5.0	52.1	28.8
SMCJ16A	GEP	BEP	17.80	19.70	1.0	16.0	5.0	57.7	26.0
SMCJ17	GEQ	BEQ	18.90	23.10	1.0	17.0	5.0	49.2	30.5
SMCJ17A	GER	BER	18.90	20.90	1.0	17.0	5.0	54.3	27.6
SMCJ18	GES	BES	20.00	24.40	1.0	18.0	5.0	46.6	32.2
SMCJ18A	GET	BET	20.00	22.10	1.0	18.0	5.0	51.4	29.2
SMCJ19	GEA	BEA	21.13	25.76	1.0	19.0	5.0	44.1	34.0
SMCJ19A	GEB	BEB	21.10	23.30	1.0	19.0	5.0	48.7	30.8
SMCJ20	GEU	BEU	22.20	27.10	1.0	20.0	5.0	41.9	35.8
SMCJ20A	GEV	BEV	22.20	24.50	1.0	20.0	5.0	46.3	32.4
SMCJ22	GEW	BEW	24.40	29.80	1.0	22.0	5.0	38.1	39.4
SMCJ22A	GEX	BEX	24.40	26.90	1.0	22.0	5.0	42.3	35.5
SMCJ24	GEY	BEY	26.70	32.60	1.0	24.0	5.0	34.9	43.0
SMCJ24A	GEZ	BEZ	26.70	29.50	1.0	24.0	5.0	38.6	38.9
SMCJ26	GFD	BFD	28.90	35.30	1.0	26.0	5.0	32.2	46.6
SMCJ26A	GFE	BFE	28.90	31.90	1.0	26.0	5.0	35.6	42.1
SMCJ28	GFF	BFF	31.10	38.00	1.0	28.0	5.0	30.0	50.0
SMCJ28A	GFG	BFG	31.10	34.40	1.0	28.0	5.0	33.0	45.4
SMCJ30A	GFH	BFH	33.30	40.70	1.0	30.0	5.0	28.0	53.5
SMCJ30A	GFK	BFK	33.30	36.80	1.0	30.0	5.0	31.0	48.4
SMCJ33	GFL	BFL	36.70	44.90	1.0	33.0	5.0	25.4	59.0
SMCJ33A	GFM	BFM	36.70	40.60	1.0	33.0	5.0	28.1	53.3
SMCJ36	GFN	BFN	40.00	48.90	1.0	36.0	5.0	23.3	64.3
SMCJ36A	GFP	BFP	40.00	44.20	1.0	36.0	5.0	25.8	58.1
SMCJ40	GFQ	BFQ	44.40	54.30	1.0	40.0	5.0	21.0	71.4
SMCJ40A	GFR	BFR	44.40	49.10	1.0	40.0	5.0	23.3	64.5
SMCJ43	GFS	BFS	47.80	58.40	1.0	43.0	5.0	19.6	76.7
SMCJ43A	GFT	BFT	47.80	52.80	1.0	43.0	5.0	21.6	69.4



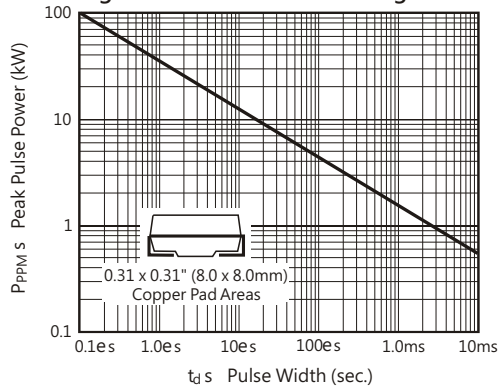
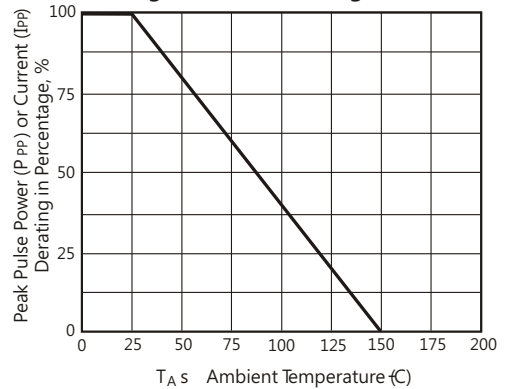
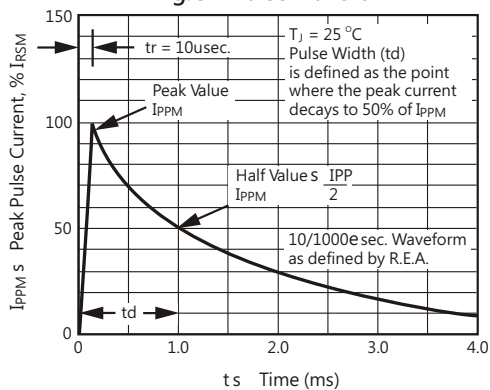
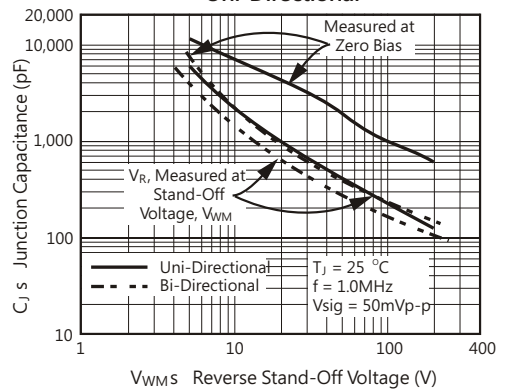
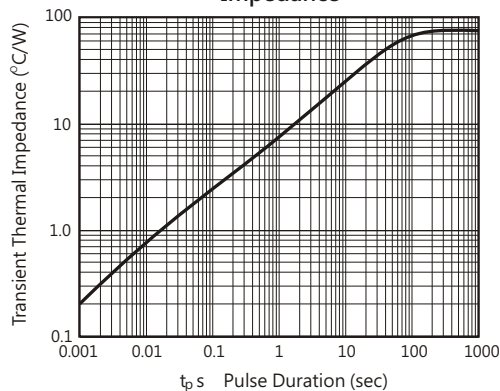
Electrical Characteristics

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	UNI	BI	Min	Max					
SMCJ45	GFU	BFU	50.00	61.10	1.0	45.0	5.0	18.7	80.3
SMCJ45A	GFV	BFV	50.00	55.30	1.0	45.0	5.0	20.6	72.7
SMCJ48	GFW	BFW	53.30	65.10	1.0	48.0	5.0	17.5	85.5
SMCJ48A	GFX	BFX	53.30	58.90	1.0	48.0	5.0	19.4	77.4
SMCJ51	GFY	BFY	56.70	69.30	1.0	51.0	5.0	16.5	91.1
SMCJ51A	GFZ	BFZ	56.70	62.70	1.0	51.0	5.0	18.2	82.4
SMCJ54	GGD	BGD	60.00	73.30	1.0	54.0	5.0	15.6	96.3
SMCJ54A	GGE	BGE	60.00	66.30	1.0	54.0	5.0	17.2	87.1
SMCJ58	GGF	BGF	64.40	78.70	1.0	58.0	5.0	14.6	103.0
SMCJ58A	GGG	BGG	64.40	71.20	1.0	58.0	5.0	16.0	93.6
SMCJ60	GGH	BGH	66.70	81.50	1.0	60.0	5.0	14.0	107.0
SMCJ60A	GGK	BGK	66.70	73.70	1.0	60.0	5.0	15.5	96.8
SMCJ64	GGL	BGL	71.10	86.90	1.0	64.0	5.0	13.2	114.0
SMCJ64A	GGM	BGM	71.10	78.60	1.0	64.0	5.0	14.6	103.0
SMCJ70	GGN	BGN	77.80	95.10	1.0	70.0	5.0	12.0	125.0
SMCJ70A	GGP	BGP	77.80	86.00	1.0	70.0	5.0	13.3	113.0
SMCJ75	GGQ	BGQ	83.30	102.00	1.0	75.0	5.0	11.2	134.0
SMCJ75A	GGR	BGR	83.30	92.10	1.0	75.0	5.0	12.4	121.0
SMCJ78	GGs	BGs	86.70	106.00	1.0	78.0	5.0	10.8	139.0
SMCJ78A	GGT	BGT	86.70	95.80	1.0	78.0	5.0	11.9	126.0
SMCJ80	GGA	BGA	88.96	108.80	1.0	80.0	5.0	10.5	143.2
SMCJ80A	GGB	BGB	88.80	97.60	1.0	80.0	5.0	11.6	129.6
SMCJ85	GGU	BGU	94.40	115.00	1.0	85.0	5.0	9.93	151.0
SMCJ85A	GGV	BGV	94.40	104.00	1.0	85.0	5.0	10.9	137.0
SMCJ90	GGW	BGW	100.00	122.00	1.0	90.0	5.0	9.38	160.0
SMCJ90A	GGX	BGX	100.00	111.00	1.0	90.0	5.0	10.3	146.0
SMCJ100	GGY	BGY	111.00	136.00	1.0	100.0	5.0	8.38	179.0
SMCJ100A	GGZ	BGZ	111.00	123.00	1.0	100.0	5.0	9.26	162.0
SMCJ110	GHD	BHD	122.00	149.00	1.0	110.0	5.0	7.65	196.0
SMCJ110A	GHE	BHE	122.00	135.00	1.0	110.0	5.0	8.47	177.0
SMCJ120	GHF	BHF	133.00	163.00	1.0	120.0	5.0	7.01	214.0
SMCJ120A	GHG	BHG	133.00	147.00	1.0	120.0	5.0	7.77	193.0
SMCJ130	GHH	BHH	144.00	176.00	1.0	130.0	5.0	6.49	231.0
SMCJ130A	GHK	BHK	144.00	159.00	1.0	130.0	5.0	7.18	209.0
SMCJ140	GHA	BHA	155.68	190.40	1.0	140.0	5.0	5.99	250.6
SMCJ140A	GHB	BHB	155.00	171.00	1.0	140.0	5.0	6.61	226.8
SMCJ150	GHL	BHL	167.00	204.00	1.0	150.0	5.0	5.60	268.0
SMCJ150A	GHM	BHM	167.00	185.00	1.0	150.0	5.0	6.17	243.0
SMCJ160	GHN	BHN	178.00	218.00	1.0	160.0	5.0	5.23	287.0
SMCJ160A	GHP	BHP	178.00	197.00	1.0	160.0	5.0	5.79	259.0
SMCJ170	GHQ	BHQ	189.00	231.00	1.0	170.0	5.0	4.93	304.0
SMCJ170A	GHR	BHR	189.00	209.00	1.0	170.0	5.0	5.45	275.0
SMCJ180	GHS	BHS	200.16	244.80	1.0	180.0	5.0	4.66	322.2
SMCJ180A	GHT	BHT	200.00	220.00	1.0	180.0	5.0	5.14	291.6
SMCJ190	GHU	BHU	211.28	258.40	1.0	190.0	5.0	4.41	340.1
SMCJ190A	GHV	BHV	211.00	232.00	1.0	190.0	5.0	4.87	307.8
SMCJ200A	GHW	BHW	224.00	247.00	1.0	200.0	5.0	4.63	324.0
SMCJ220A	GHX	BHX	246.00	272.00	1.0	220.0	5.0	4.21	356.0
SMCJ250A	GHZ	BHZ	279.00	309.00	1.0	250.0	5.0	3.70	405.0
SMCJ300A	GJE	BJE	335.00	371.00	1.0	300.0	5.0	3.09	486.0
SMCJ350A	GJG	BJG	391.00	432.00	1.0	350.0	5.0	2.65	567.0
SMCJ400A	GJK	BJK	447.00	494.00	1.0	400.0	5.0	2.31	648.0
SMCJ440A	GJM	BJM	492.00	543.00	1.0	440.0	5.0	2.10	713.0



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

Fig. 1 - Peak Pulse Power Rating Curve**Fig. 2 - Pulse Derating Curve****Fig. 3 - Pulse Waveform****Fig. 4 - Typical Junction Capacitance Uni-Directional****Fig. 5 - Typical Transient Thermal Impedance****Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only**