THE DATASHEET OF

ICS9FG108DGLFT

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Technical Data
Data Sheet N0193, Rev. C

Automotive Qualified

SMBJ SERIES SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

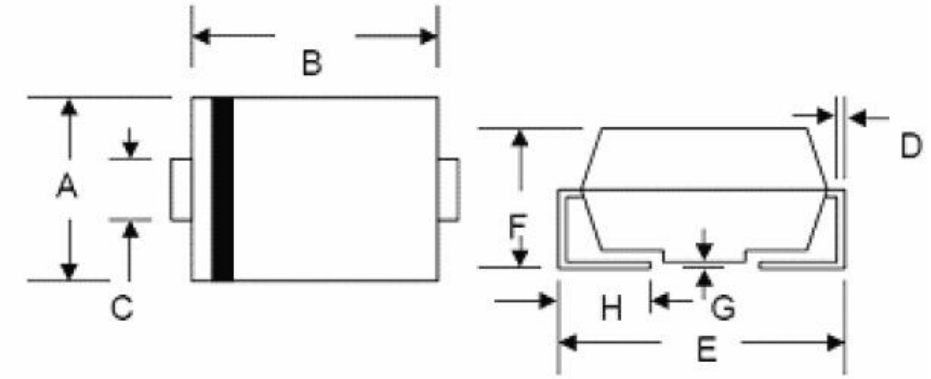
Features:

- Glass Passivated Die Construction
- 600W Peak Pulse Power Dissipation
- 5.0V- 400V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- “-A” is an AEC-Q101 qualified device
- This is a Pb − Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

Mechanical Data:

- Case: JEDEC DO-214AA Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Weight:0.093 grams(approx.)

Mechanical Dimensions：In Inches(mm)



	SMB/DO-214AA			
Dim.	Min.	Max.	Min.	Max.
A	3.30	3.94	0.130	0.155
B	4.06	4.70	0.160	0.185
C	1.80	2.20	0.071	0.087
D	0.152	0.305	0.006	0.012
E	4.80	5.59	0.189	0.220
F	2.10	2.60	0.083	0.102
G	0.051	0.203	0.002	0.008
H	0.76	1.52	0.030	0.060
	In mm		In inch	

SMB

Technical Data
Data Sheet N0193, Rev. C

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Marking Diagram:

Where XXXXX is YYWWL



SMBJ5.0



SMBJ5.0C

KD/AD = Part Name
YY = Year
WW = Week
L = Lot Number

Cautions: Molding resin
Epoxy resin UL:94V-0

Ordering Information

Device	Package	Shipping
SMBJ SERIES	SMB (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

Maximum Ratings and Electrical Characteristics @T_A=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T_A=25°C by 10x1000μs Waveform (Fig.1)(Note 1), (Note 2)	P_{PPM}	600	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2),(Note 3)	I_{FSM}	100	A
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 TA = 25°C per Fig. 2.
2. Mounted on 5.0mm² （0.013mm thick）land areas.
3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

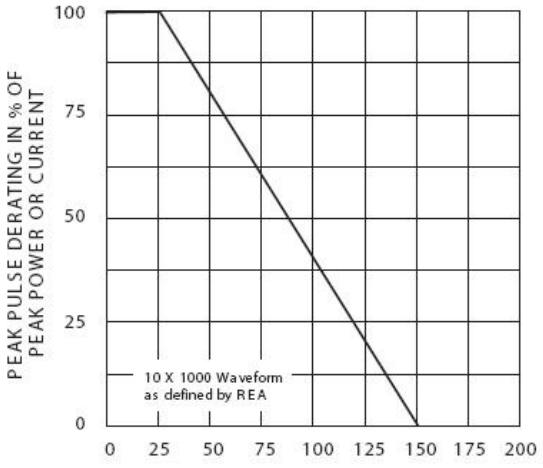


Fig. 1 Pulse Derating Curve

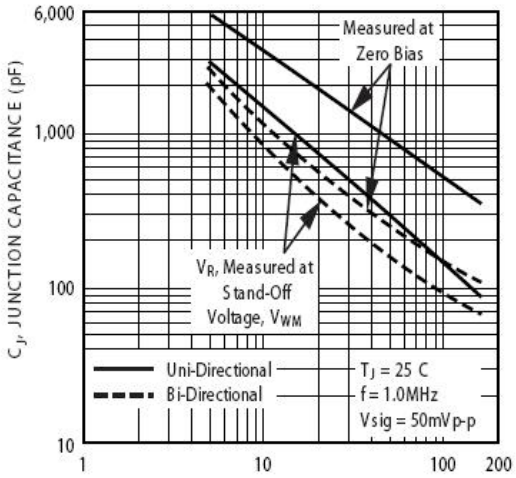


Fig. 2 Typical Junction Capacitance

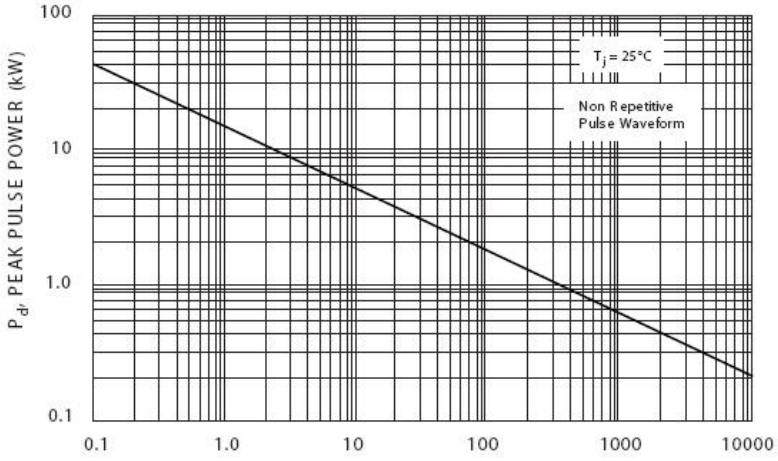


Fig. 3 Pulse Rating Curve

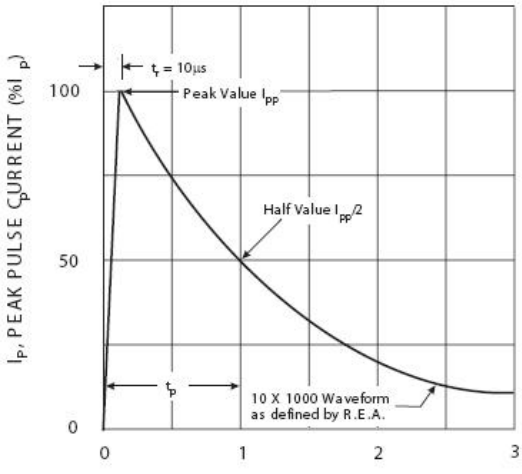


Fig. 4 Pulse Waveform

Technical Data
Data Sheet N0193, Rev. C

UNI-DIRECTIONAL 600 WATT SURFACE MOUNT TVS

UNI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT(MA)	MAXMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(uA)
SMBJ5.0	KD	5.00	6.40	7.82	10	9.6	62.5	800
SMBJ5.0A	KE	5.00	6.40	7.07	10	9.2	65.2	800
SMBJ6.0	KF	6.00	6.67	8.15	10	11.4	52.6	800
SMBJ6.0A	KG	6.00	6.67	7.37	10	10.3	58.3	800
SMBJ6.5	KH	6.50	7.22	8.82	10	12.3	48.7	500
SMBJ6.5A	KK	6.50	7.22	7.98	10	11.2	53.6	500
SMBJ7.0	KL	7.00	7.78	9.51	10	13.3	45.1	200
SMBJ7.0A	KM	7.00	7.78	8.60	10	12.0	50.0	200
SMBJ7.5	KN	7.50	8.33	10.18	1	14.3	42.0	100
SMBJ7.5A	KP	7.50	8.33	9.21	1	12.9	46.5	100
SMBJ8.0	KQ	8.00	8.99	10.99	1	15.0	40.0	50
SMBJ8.0A	KR	8.00	8.99	9.94	1	13.6	44.1	50
SMBJ8.5	KS	8.5	9.44	11.54	1	15.9	37.7	10
SMBJ8.5A	KT	8.5	9.44	1.43	1	14.4	41.7	10
SMBJ9.0	KU	9.0	10.00	12.22	1	16.9	35.5	5
SMBJ9.0A	KV	9.0	10.00	11.05	1	15.4	39.0	5
SMBJ10	KW	10	11.10	13.57	1	18.8	31.9	5
SMBJ10A	KX	10	11.10	12.27	1	17.0	35.3	5
SMBJ11	KY	11	12.20	14.91	1	20.1	29.9	5
SMBJ11A	KZ	11	12.20	13.48	1	18.2	33.0	5
SMBJ12	LD	12	13.30	16.26	1	22.0	27.3	5
SMBJ12A	LE	12	13.30	14.70	1	19.9	30.2	5
SMBJ13	LF	13	14.40	17.60	1	23.8	25.2	5
SMBJ13A	LG	13	14.40	15.92	1	21.5	27.9	5
SMBJ14	LH	14	15.60	19.07	1	25.8	23.3	5
SMBJ14A	LK	14	15.60	17.24	1	23.2	25.8	5
SMBJ15	LL	15	16.70	20.41	1	26.9	22.3	5
SMBJ15A	LM	15	16.70	18.46	1	24.4	24.0	5
SMBJ16	LN	16	17.80	21.76	1	28.8	20.8	5
SMBJ16A	LP	16	17.80	19.67	1	26.0	23.1	5
SMBJ17	LQ	17	18.90	23.10	1	30.5	19.7	5
SMBJ17A	LR	17	18.90	20.89	1	27.6	21.7	5
SMBJ18	LS	18	20.00	24.44	1	32.2	18.6	5
SMBJ18A	LT	18	20.00	22.11	1	29.2	20.5	5
SMBJ20	LU	20	22.20	27.13	1	35.8	16.7	5
SMBJ20A	LV	20	22.20	24.54	1	32.4	18.5	5
SMBJ22	LW	22	24.40	29.82	1	39.4	15.2	5
SMBJ22A	LX	22	24.40	26.97	1	35.5	16.9	5
SMBJ24	LY	24	26.70	32.63	1	43.0	14.0	5
SMBJ24A	LZ	24	26.70	29.51	1	38.9	15.4	5
SMBJ26	MD	26	28.90	35.32	1	46.6	12.4	5
SMBJ26A	ME	26	28.90	31.94	1	42.1	14.2	5
SMBJ28	MF	28	31.10	38.01	1	50.0	12.0	5
SMBJ28A	MG	28	31.10	34.37	1	45.4	13.2	5
SMBJ30	MH	30	33.30	40.70	1	53.5	11.2	5
SMBJ30A	MK	30	33.30	36.81	1	48.4	12.4	5
SMBJ33	ML	33	36.70	44.86	1	59.0	10.2	5
SMBJ33A	MM	33	36.70	40.56	1	53.3	13.2	5
SMBJ36	MN	36	40.00	48.89	1	64.3	9.3	5
SMBJ36A	MP	36	40.00	44.21	1	58..1	10.3	5

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Data Sheet N0193, Rev. C

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SMBJ40	MQ	40	44.40	54.27	1	71.4	8.4	5
SMBJ40A	MR	40	44.40	49.07	1	64.5	9.3	5
SMBJ43	MS	43	47.80	58.42	1	76.7	7.8	5
SMBJ43A	MT	43	47.80	52.83	1	69.4	8.6	5
SMBJ45	MU	45	50.00	61.11	1	80.3	7.5	5
SMBJ45A	MV	45	50.00	55.26	1	72.7	8.3	5
SMBJ48	MW	48	53.30	65.14	1	85.5	7.0	5
SMBJ48A	MX	48	53.30	58.91	1	77.4	7.7	5
SMBJ51	MY	51	56.70	69.30	1	91.1	6.6	5
SMBJ51A	MZ	51	56.70	62.67	1	82.4	7.3	5
SMBJ54	ND	54	60.00	73.33	1	96.3	6.2	5
SMBJ54A	NE	54	60.00	66.32	1	87.1	6.9	5
SMBJ58	NF	58	64.40	78.71	1	103.0	5.8	5
SMBJ58A	NG	58	64.40	71.18	1	93.6	6.4	5
SMBJ60	NH	60	66.70	81.52	1	107.0	5.6	5
SMBJ60A	NK	60	66.70	73.72	1	96.8	6.2	5
SMBJ64	NL	64	71.10	86.90	1	114.0	5.3	5
SMBJ64A	NM	64	71.10	78.58	1	103.0	5.8	5
SMBJ70	NN	70	77.80	95.09	1	125.0	4.8	5
SMBJ70A	NP	70	77.80	85.99	1	113.0	5.3	5
SMBJ75	NQ	75	83.30	101.81	1	134.0	4.5	5
SMBJ75A	NR	75	83.30	92.07	1	121.0	4.9	5
SMBJ78	NS	78	86.70	105.97	1	139.0	4.3	5
SMBJ78A	NT	78	86.70	95.83	1	126.0	4.7	5
SMBJ85	NU	85	94.40	115.38	1	151.0	3.9	5
SMBJ85A	NV	85	94.40	104.34	1	137.0	4.4	5
SMBJ90	NW	90	100.00	122.22	1	160.0	3.8	5
SMBJ90A	NX	90	10.00	110.53	1	146.0	4.1	5
SMBJ100	NY	100	111.00	135.67	1	179.0	3.4	5
SMBJ100A	NZ	100	111.00	122.68	1	162.0	3.7	5
SMBJ110	PD	110	122.00	149.11	1	196.0	3.0	5
SMBJ110A	PE	110	122.00	134.84	1	177.0	3.4	5
SMBJ120	PF	120	133.00	162.56	1	214.0	2.8	5
SMBJ120A	PG	120	133.00	147.00	1	193.0	3.1	5
SMBJ130	PH	130	144.00	176.00	1	231.0	2.6	5
SMBJ130A	PK	130	144.00	159.16	1	209.0	2.9	5
SMBJ150	PL	150	167.00	204.11	1	269.0	2.2	5
SMBJ150A	PM	150	167.00	184.58	1	243.0	2.5	5
SMBJ160	PN	160	178.00	217.56	1	287.0	2.1	5
SMBJ160A	PP	160	178.00	196.74	1	259.0	2.3	5
SMBJ170	PQ	170	189.00	231.00	1	304.0	2.0	5
SMBJ170A	PR	170	189.00	208.89	1	275.0	2.2	5
SMBJ180A	PT	180	201	222	1	292	2.1	1
SMBJ200A	PV	200	224	247	1	324	1.9	1
SMBJ220A	PX	220	246	272	1	356	1.7	1
SMBJ250A	PZ	250	279	309	1	405	1.5	1
SMBJ300A	QE	300	335	371	1	486	1.3	1
SMBJ350A	QG	350	391	432	1	567	1.1	1
SMBJ400A	QK	400	447	494	1	648	0.9	1
SMBJ440A	QM	440	492	543	1	713	0.9	1

"C" Suffix Designates Bi-directional Devices
"A" Suffix Designates 5% Tolerance Devices
No Suffix Designates 10% Tolerance Devices
"-A" Suffix is an AEC-Q101 qualified device

BI-DIRECTIONAL 600 WATT SURFACE MOUNT TVS

BI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT(MA)	MAXMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(uA)
SMBJ5.0C	AD	5.00	6.40	7.82	10	9.6	62.5	1600
SMBJ5.0CA	AE	5.00	6.40	7.07	10	9.2	65.2	1600
SMBJ6.0C	AF	6.00	6.67	8.15	10	11.4	52.6	1600
SMBJ6.0CA	AG	6.00	6.67	7.37	10	10.3	58.3	1600
SMBJ6.5C	AH	6.50	7.22	8.82	10	12.3	48.7	1000
SMBJ6.5CA	AK	6.50	7.22	7.98	10	11.2	53.6	1000
SMBJ7.0C	AL	7.00	7.78	9.51	10	13.3	45.1	400
SMBJ7.0CA	AM	7.00	7.78	8.60	10	12.0	50.0	400
SMBJ7.5C	AN	7.50	8.33	10.18	1	14.3	42.0	200
SMBJ7.5CA	AP	7.50	8.33	9.21	1	12.9	46.5	200
SMBJ8.0C	AQ	8.00	8.99	10.99	1	15.0	40.0	100
SMBJ8.0CA	AR	8.00	8.99	9.94	1	13.6	44.1	100
SMBJ8.5C	AS	8.5	9.44	11.54	1	15.9	37.7	20
SMBJ8.5CA	AT	8.5	9.44	11.43	1	14.4	41.7	20
SMBJ9.0C	AU	9.0	10.00	12.22	1	16.9	35.5	10
SMBJ9.0CA	AV	9.0	10.00	11.05	1	15.4	39.0	10
SMBJ10C	AW	10	11.10	13.57	1	18.8	31.9	5
SMBJ10CA	AX	10	11.10	12.27	1	17.0	35.3	5
SMBJ11C	AY	11	12.20	14.91	1	20.1	29.9	5
SMBJ11CA	AZ	11	12.20	13.48	1	18.2	33.0	5
SMBJ12C	BD	12	13.30	16.26	1	22.0	27.3	5
SMBJ12CA	BE	12	13.30	14.70	1	19.9	30.2	5
SMBJ13C	BF	13	14.40	17.60	1	23.8	25.2	5
SMBJ13CA	BG	13	14.40	15.92	1	21.5	27.9	5
SMBJ14C	BH	14	15.60	19.07	1	25.8	23.3	5
SMBJ14CA	BK	14	15.60	17.24	1	23.2	25.8	5
SMBJ15C	BL	15	16.70	20.41	1	26.9	22.3	5
SMBJ15CA	BM	15	16.70	18.46	1	24.4	24.0	5
SMBJ16C	BN	16	17.80	21.76	1	28.8	20.8	5
SMBJ16CA	BP	16	17.80	19.67	1	26.0	23.1	5
SMBJ17C	BQ	17	18.90	23.10	1	30.5	19.7	5
SMBJ17CA	BR	17	18.90	20.89	1	27.6	21.7	5
SMBJ18C	BS	18	20.00	24.44	1	32.2	18.6	5
SMBJ18CA	BT	18	20.00	22.11	1	29.2	20.5	5
SMBJ20C	BU	20	22.20	27.13	1	35.8	16.7	5
SMBJ20CA	BV	20	22.20	24.54	1	32.4	18.5	5
SMBJ22C	BW	22	24.40	29.82	1	39.4	15.2	5
SMBJ22CA	BX	22	24.40	26.97	1	35.5	16.9	5
SMBJ24C	BY	24	26.70	32.63	1	43.0	14.0	5
SMBJ24CA	BZ	24	26.70	29.51	1	38.9	15.4	5
SMBJ26C	CD	26	28.90	35.32	1	46.6	12.4	5
SMBJ26CA	CE	26	28.90	31.94	1	42.1	14.2	5
SMBJ28C	CF	28	31.10	38.01	1	50.0	12.0	5
SMBJ28CA	CG	28	31.10	34.37	1	45.4	13.2	5
SMBJ30C	CH	30	33.30	40.70	1	53.5	11.2	5
SMBJ30CA	CK	30	33.30	36.81	1	48.4	12.4	5
SMBJ33C	CL	33	36.70	44.86	1	59.0	10.2	5
SMBJ33CA	CM	33	36.70	40.56	1	53.3	13.2	5
SMBJ36C	CN	36	40.00	48.89	1	64.3	9.3	5
SMBJ36CA	CP	36	40.00	44.21	1	58..1	10.3	5

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SMBJ40C	CQ	40	44.40	54.27	1	71.4	8.4	5
SMBJ40CA	CR	40	44.40	49.07	1	64.5	9.3	5
SMBJ43C	CS	43	47.80	58.42	1	76.7	7.8	5
SMBJ43CA	CT	43	47.80	52.83	1	69.4	8.6	5
SMBJ45C	CU	45	50.00	61.11	1	80.3	7.5	5
SMBJ45CA	CV	45	50.00	55.26	1	72.7	8.3	5
SMBJ48C	CW	48	53.30	65.14	1	85.5	7.0	5
SMBJ48CA	CX	48	53.30	58.91	1	77.4	7.7	5
SMBJ51C	CY	51	56.70	69.30	1	91.1	6.6	5
SMBJ51CA	CZ	51	56.70	62.67	1	82.4	7.3	5
SMBJ54C	DD	54	60.00	73.33	1	96.3	6.2	5
SMBJ54CA	DE	54	60.00	66.32	1	87.1	6.9	5
SMBJ58C	DF	58	64.40	78.71	1	103.0	5.8	5
SMBJ58CA	DG	58	64.40	71.18	1	93.6	6.4	5
SMBJ60C	DH	60	66.70	81.52	1	107.0	5.6	5
SMBJ60CA	DK	60	66.70	73.72	1	96.8	6.2	5
SMBJ64C	DL	64	71.10	86.90	1	114.0	5.3	5
SMBJ64CA	DM	64	71.10	78.58	1	103.0	5.8	5
SMBJ70C	DN	70	77.80	95.09	1	125.0	4.8	5
SMBJ70CA	DP	70	77.80	85.99	1	113.0	5.3	5
SMBJ75C	DQ	75	83.30	101.81	1	134.0	4.5	5
SMBJ75CA	DR	75	83.30	92.07	1	121.0	4.9	5
SMBJ78C	DS	78	86.70	105.97	1	139.0	4.3	5
SMBJ78CA	DT	78	86.70	95.83	1	126.0	4.7	5
SMBJ85C	DU	85	94.40	115.38	1	151.0	3.9	5
SMBJ85CA	DV	85	94.40	104.34	1	137.0	4.4	5
SMBJ90C	DW	90	100.00	122.22	1	160.0	3.8	5
SMBJ90CA	DX	90	10.00	110.53	1	146.0	4.1	5
SMBJ100C	DY	100	111.00	135.67	1	179.0	3.4	5
SMBJ100CA	DZ	100	111.00	122.68	1	162.0	3.7	5
SMBJ110C	ED	110	122.00	149.11	1	196.0	3.0	5
SMBJ110CA	EE	110	122.00	134.84	1	177.0	3.4	5
SMBJ120C	EF	120	133.00	162.56	1	214.0	2.8	5
SMBJ120CA	EG	120	133.00	147.00	1	193.0	3.1	5
SMBJ130C	EH	130	144.00	176.00	1	231.0	2.6	5
SMBJ130CA	EK	130	144.00	159.16	1	209.0	2.9	5
SMBJ150C	EL	150	167.00	204.11	1	269.0	2.2	5
SMBJ150CA	EM	150	167.00	184.58	1	243.0	2.5	5
SMBJ160C	EN	160	178.00	217.56	1	287.0	2.1	5
SMBJ160CA	EP	160	178.00	196.74	1	259.0	2.3	5
SMBJ170C	EQ	170	189.00	231.00	1	304.0	2.0	5
SMBJ170CA	ER	170	189.00	208.89	1	275.0	2.2	5
SMBJ180CA	ET	180	201	222	1	292	2.1	1
SMBJ200CA	EV	200	224	247	1	324	1.9	1
SMBJ220CA	EX	220	246	272	1	356	1.7	1
SMBJ250CA	EZ	250	279	309	1	405	1.5	1
SMBJ300CA	FE	300	335	371	1	486	1.3	1
SMBJ350CA	FG	350	391	432	1	567	1.1	1
SMBJ400CA	FK	400	447	494	1	648	0.9	1
SMBJ440CA	FM	440	492	543	1	713	0.9	1

"C" Suffix Designates Bi-directional Devices
"A" Suffix Designates 5% Tolerance Devices
No Suffix Designates 10% Tolerance Devices
"-A" Suffix is an AEC-Q101 qualified device

Technical Data
Data Sheet N0193, Rev. C

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