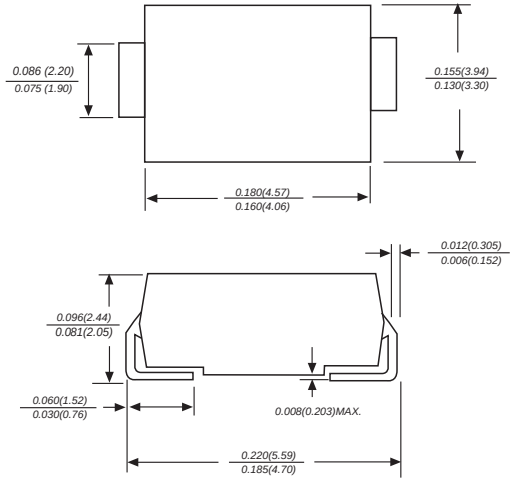
SMBJ5.0A THRU SMBJ440CA

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Breskdown voltage: 5.0-440 Volts Peak pulse power: 600 Wallts

DO-214AA



Dimensions in inches and (millimeters)

FEATURE

- Optimzed for LAN protection applications
- Ideal for ESD protection of data lines in accordance with IEC 1000-4-2(IEC801-2)
- Ideal for EFT protection of data lines in accordance with IEC1000-4-4(IEC801-2)
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 600w peak pulse power capability
- Excellent clamping capability
- Low incremental xurge resistance
- Fast response time:typically less than 1.0ps from 0v to $V_{(BR)}$ min
- High temperature soldering guaranteed: 265℃/10S at terminals

MECHANICAL DATA

Case: JEDEC DO-214AA molded plastic body over passivated junction
Terminals: Solder plated , solderable per MIL-STD 750, method 2026
Polarity: Color band denotes cathode except for bidirectional types
Mounting Position: Any
Weight: 0.09 grams

DEVICES FOR BIDIRECTIONAL APPLICATIONS

For bidirectional use suffix C for types SMBJ5.0A thru SMBJ440A (e.g. SMBJ5.0CA,SMBJ440CA)
Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25℃ ambient temperature unless otherwise specified.

	SYMBOLS	*VALUE*	*UNITS*
Peak pulse power dissipation with a 10/1000ms wavetorm(NOTE 1,2,FIG.1)	P_{PPM}	Minimum 600	Watts
Peak forward surge current (Note 1,2,3)	I_{FSM}	100.0	Amps
Peak pulse current with a 10/1000ms waveform(NOTE 1)	I_{PPM}	See Table 1	Amps
Steady state power dissapation (Note 3)	$P_{M(AV)}$	5.0	Watts
Maximum instantaneous forward voltage at 50A(Note 3,4) unidirectional only	V_F	3.5/5.0	Volts
Operating junction and storage temperature range	T_{STG},T_J	-55 to + 150	°C

Notes: 1.Non-repetitive current pulse,per Fig.3 and derated above T_A=25℃ per Fig.2
2.Mounted on 5.0mm² copper pads to each terminal
3.Measured on 8.3ms single half sine-wine.For uni-directional devices only.
4.VF=3.5V on SMB-5.0 thru SMB-90 devices and VF=5.0V on SMB-100 thru SMB-440 devices

ELECTRICAL CHARACTERISTICS (at T_A=25℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage VBR (Volts) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{PP} (Volts)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_R (μA)
		UNI	BI		MIN	MAX				
SMBJ5.0A	SMBJ5.0CA	KE	AE	5	6.4	7	10	9.2	65.3	800
SMBJ6.0A	SMBJ6.0CA	KG	AG	6	6.67	7.37	10	10.3	58.3	800
SMBJ6.5A	SMBJ6.5CA	KK	AK	6.5	7.22	7.98	10	11.2	53.6	500
SMBJ7.0A	SMBJ7.0CA	KM	AM	7	7.78	8.6	10	12	50	200
SMBJ7.5A	SMBJ7.5CA	KP	AP	7.5	8.33	9.21	1	12.9	46.6	100
SMBJ8.0A	SMBJ8.0CA	KR	AR	8	8.89	9.83	1	13.6	44.2	50
SMBJ8.5A	SMBJ8.5CA	KT	AT	8.5	9.44	10.4	1	14.4	41.7	20
SMBJ9.0A	SMBJ9.0CA	KV	AV	9	10	11.1	1	15.4	39	10
SMBJ10A	SMBJ10CA	KX	AX	10	11.1	12.3	1	17	35.3	5
SMBJ11A	SMBJ11CA	KZ	AZ	11	12.2	13.5	1	18.2	33	5
SMBJ12A	SMBJ12CA	LE	BE	12	13.3	14.7	1	19.9	30.2	5
SMBJ13A	SMBJ13CA	LG	BG	13	14.4	15.9	1	21.5	28	5
SMBJ14A	SMBJ14CA	LK	BK	14	15.6	17.2	1	23.2	25.9	5
SMBJ15A	SMBJ15CA	LM	BM	15	16.7	18.5	1	24.4	24.6	5
SMBJ16A	SMBJ16CA	LP	BP	16	17.8	19.7	1	26	23.1	5
SMBJ17A	SMBJ17CA	LR	BR	17	18.9	20.9	1	27.6	21.8	5
SMBJ18A	SMBJ18CA	LT	BT	18	20	22.1	1	29.2	20.6	5
SMBJ20A	SMBJ20CA	LV	BV	20	22.2	24.5	1	32.4	18.6	5
SMBJ22A	SMBJ22CA	LX	BX	22	24.4	26.9	1	35.5	16.9	5
SMBJ24A	SMBJ24CA	LZ	BZ	24	26.7	29.5	1	38.9	15.5	5
SMBJ26A	SMBJ26CA	ME	CE	26	28.9	31.9	1	42.1	14.3	5
SMBJ28A	SMBJ28CA	MG	CG	28	31.1	34.4	1	45.4	13.3	5
SMBJ30A	SMBJ30CA	MK	CK	30	33.3	36.8	1	48.4	12.4	5
SMBJ33A	SMBJ33CA	MM	CM	33	36.7	40.6	1	53.3	11.3	5
SMBJ36A	SMBJ36CA	MP	CP	36	40	44.2	1	58.1	10.4	5
SMBJ40A	SMBJ40CA	MR	CR	40	44.4	49.1	1	64.5	9.3	5
SMBJ43A	SMBJ43CA	MT	CT	43	47.8	52.8	1	69.4	8.7	5
SMBJ45A	SMBJ45CA	MV	CV	45	50	55.3	1	72.7	8.3	5
SMBJ48A	SMBJ48CA	MX	CX	48	53.3	58.9	1	77.4	7.8	5
SMBJ51A	SMBJ51CA	MZ	CZ	51	56.7	62.7	1	82.4	7.3	5
SMBJ54A	SMBJ54CA	NE	DE	54	60	66.3	1	87.1	6.9	5
SMBJ58A	SMBJ58CA	NG	DG	58	64.4	71.2	1	93.6	6.5	5
SMBJ60A	SMBJ60CA	NK	DK	60	66.7	73.7	1	96.8	6.2	5
SMBJ64A	SMBJ64CA	NM	DM	64	71.1	78.6	1	103	5.9	5
SMBJ70A	SMBJ70CA	NP	DP	70	77.8	86	1	113	5.3	5
SMBJ75A	SMBJ75CA	NR	DR	75	83.3	92.1	1	121	5	5

ELECTRICAL CHARACTERISTICS (at T_A=25℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage VBR (Volts) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{PP} (Volts)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_R (μA)
		UNI	BI		MIN	MAX				
SMBJ78A	SMBJ78CA	NT	DT	78	86.7	95.8	1	126	4.8	5
SMBJ85A	SMBJ85CA	NV	DV	85	94.4	104	1	137	4.4	5
SMBJ90A	SMBJ90CA	NX	DX	90	100	111	1	146	4.1	5
SMBJ100A	SMBJ100CA	NZ	DZ	100	111	123	1	162	3.7	5
SMBJ110A	SMBJ110CA	PE	EE	110	122	135	1	177	3.4	5
SMBJ120A	SMBJ120CA	PG	EG	120	133	147	1	193	3.1	5
SMBJ130A	SMBJ130CA	PK	EK	130	144	159	1	209	2.9	5
SMBJ150A	SMBJ150CA	PM	EM	150	167	185	1	243	2.5	5
SMBJ160A	SMBJ160CA	PP	EP	160	178	197	1	259	2.3	5
SMBJ170A	SMBJ170CA	PR	ER	170	189	209	1	275	2.2	5
SMBJ180A	SMBJ180CA	PT	ET	180	201	222	1	292	2.1	5
SMBJ200A	SMBJ200CA	PV	EV	200	224	247	1	324	1.9	5
SMBJ220A	SMBJ220CA	PX	EX	220	246	272	1	356	1.7	5
SMBJ250A	SMBJ250CA	PZ	EZ	250	279	309	1	405	1.5	5
SMBJ300A	SMBJ300CA	QE	FE	300	335	371	1	486	1.3	5
SMBJ350A	SMBJ350CA	QG	FG	350	391	432	1	567	1.1	5
SMBJ400A	SMBJ400CA	QK	FK	400	447	494	1	648	0.9	5
SMBJ440A	SMBJ440CA	QM	FM	440	492	543	1	713	0.9	5

NOTES:

1.$V_{(BR)}$measured after I_T applied for 300ms,I_T=square wave pulse or equivalent
2.Surge current waveform per Fig.3 and derated per Fig.2
3.For bidirectional types having V_{WM} of 10 volts and less,the I_D linit is doubled
4.All items and symbols are consistent with ANSI/IEEE C62.35

RATINGS AND CHARACTERISTIC CURVES SMBJ5.0A THUR SMBJ440CA

FIG. 1-PEAK PULSE POWER RATING CURVE

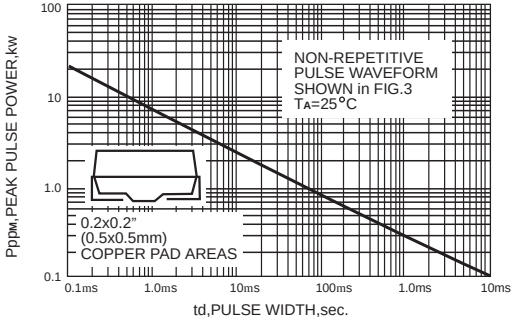


FIG. 2-PULSE DERATING CURVE

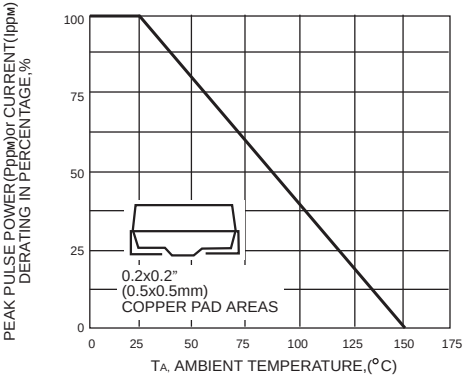


FIG.3-PULSE WAVEFORM

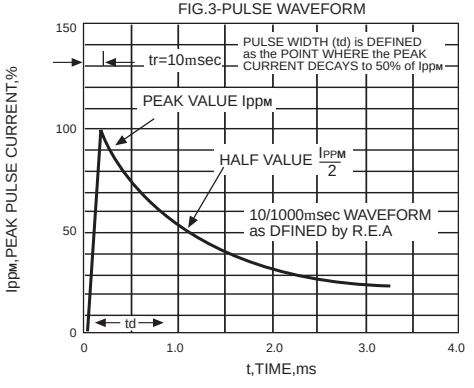


FIG. 4-TYPICAL JUNCTIONAL CAPACITANCE
UNIDIRECTIONAL

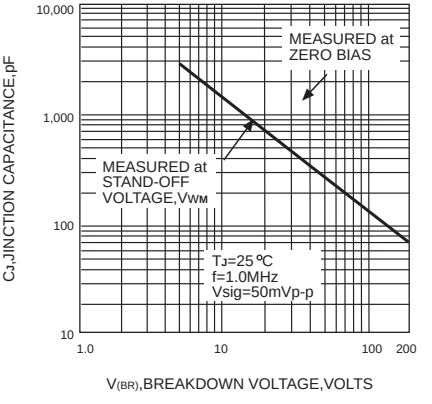


FIG.5-STEADY STATE POWER DERATING CURVE

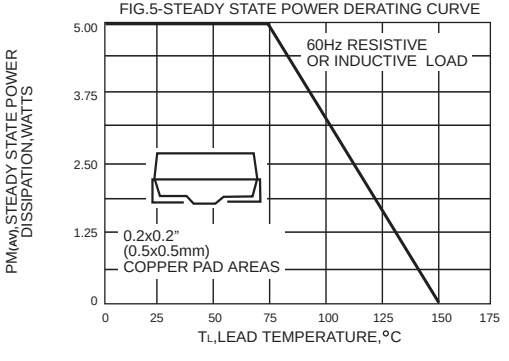


FIG.6-MAXIMUM NON-REPETITIVE FORWARD SURGE
CURRENT UNIDIRECTIONAL ONLY