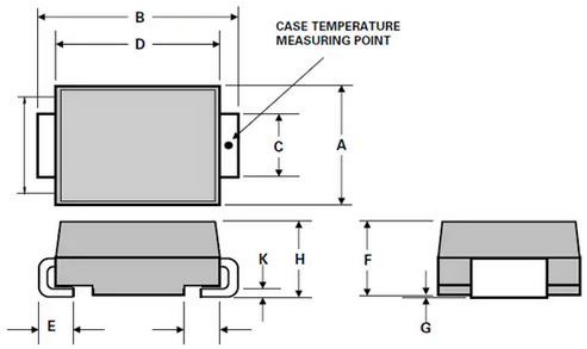
SMD Transient Voltage Suppressor Diodes

Primary characteristics		
Parameter	**Value**	**Unit**
V_R range nom.	5.0 to 440	V
Peak power	600	W

Features

- **SMB (DO-214AA)** case for easy automatic insertion.
- Pb-free and **RoHS** compliant
- Approx. weight: 0.1g / 0.0034oz
- Glass passivated junction
- Low inductance
- Solderable per MIL-STD-750, Method 2026
- Plastic package has underwriters laboratory flammability

Case dimensions



SMB (DO-214AA)

Unit	A	B	C	D	E	F	G	H	K
mm	3.60 -0.30 +0.35	5.3 -0.2 +0.3	2.10 -0.15 +0.10	4.30 -0.25 +0.30	1.20 -0.45 +0.40	2.20 -0.30 +0.25	0.10 -0.05 +0.10	2.30 ±0.35	0.30 -0.15 +0.11

Part numbering system

SMBJ	24	A
↓	↓	↓
Series code	Reverse standoff voltage marking (see: Characteristics table)	Unidirectional: A Bidirectional: CA

Absolute maximum ratings and general electrical characteristics (T_a = 25°C)

Parameter		Symbol	Value	Unit
Peak pulse power dissipation [1) 2)]		P_{PPM}	600	W
Peak forward surge current [3)]		I_{FSM}	100	A
Peak pulse current on 10/1000 µs waveform [1)]		I_{PPM}	Characteristics table	A
ESD voltage per IEC6100-4-2	Contact	V_{ESD1}	±30	kV
	Air	V_{ESD2}	±30	
Typical Junction Capacitance at VR=4V, f=1MHz		C_j	390	pF
Typical thermal resistance junction to ambient		$R_{\theta JA}$	100	°C/W
Operating junction temperature and storage temperature range		T_j, T_{stg}	-65 ~ 150	°C

Notes:
1) Non-repetitive current pulse, derated above T_A=25°C
2) Mounted on 5mm² copper pads to each terminal
3) Peak forward surge current : 8.3ms single half sine-wave superimposed on rated load (JEDEC method)

Characteristics table (T_a = 25°C)

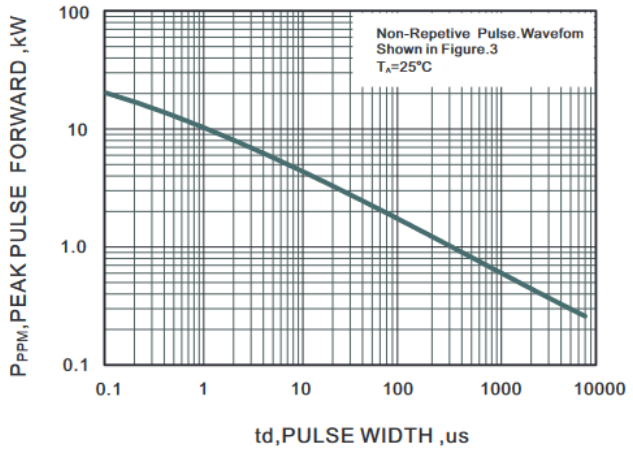
Part number (UNI)	Part number (BI)	Marking		Reverse stand off voltage	Breakdown voltage @I_T V_{BR}		Test current	Maximum clamping voltage @I_{PP}	Maximum peak pulse current	Maximum reverse leakage @V_R	Agency approval
				V_R	MIN	MAX	I_T	V_C	I_{PP}	I_R	
		UNI	BI	V	V	V	mA	V	A	µA	
SMBJ5.0A	SMBJ5.0CA	KE	AE	5.0	6.40	7.00	10	9.2	65.3	800	X
SMBJ6.0A	SMBJ6.0CA	KG	AG	6.0	6.67	7.37	10	10.3	58.3	800	X
SMBJ6.5A	SMBJ6.5CA	KK	AK	6.5	7.22	7.98	10	11.2	53.6	500	X
SMBJ7.0A	SMBJ7.0CA	KM	AM	7.0	7.78	8.60	10	12.0	50.0	200	X
SMBJ7.5A	SMBJ7.5CA	KP	AP	7.5	8.33	9.21	1	12.9	46.6	100	X
SMBJ8.0A	SMBJ8.0CA	KR	AR	8.0	8.89	9.83	1	13.6	44.2	50	X
SMBJ8.5A	SMBJ8.5CA	KT	AT	8.5	9.44	10.4	1	14.4	41.7	20	X
SMBJ9.0A	SMBJ9.0CA	KV	AV	9.0	10.0	11.1	1	15.4	39.0	10	X
SMBJ10A	SMBJ10CA	KX	AX	10	11.1	12.3	1	17.0	35.3	5	X
SMBJ11A	SMBJ11CA	KZ	AZ	11	12.2	13.5	1	18.2	33.0	1	X
SMBJ12A	SMBJ12CA	LE	BE	12	13.3	14.7	1	19.9	30.2	1	X
SMBJ13A	SMBJ13CA	LG	BG	13	14.4	15.9	1	21.5	28.0	1	X
SMBJ14A	SMBJ14CA	LK	BK	14	15.6	17.2	1	23.2	25.9	1	X
SMBJ15A	SMBJ15CA	LM	BM	15	16.7	18.5	1	24.4	24.6	1	X
SMBJ16A	SMBJ16CA	LP	BP	16	17.8	19.7	1	26.0	23.1	1	X
SMBJ17A	SMBJ17CA	LR	BR	17	18.9	20.9	1	27.6	21.8	1	X
SMBJ18A	SMBJ18CA	LT	BT	18	20.0	22.1	1	29.2	20.6	1	X
SMBJ20A	SMBJ20CA	LV	BV	20	22.2	24.5	1	32.4	18.6	1	X
SMBJ22A	SMBJ22CA	LX	BX	22	24.4	26.9	1	35.5	16.9	1	X
SMBJ24A	SMBJ24CA	LZ	BZ	24	26.7	29.5	1	38.9	15.5	1	X
SMBJ26A	SMBJ26CA	ME	CE	26	28.9	31.9	1	42.1	14.3	1	X
SMBJ28A	SMBJ28CA	MG	CG	28	31.1	34.4	1	45.4	13.3	1	X
SMBJ30A	SMBJ30CA	MK	CK	30	33.3	36.8	1	48.4	12.4	1	X
SMBJ33A	SMBJ33CA	MM	CM	33	36.7	40.6	1	53.3	11.3	1	X
SMBJ36A	SMBJ36CA	MP	CP	36	40.0	44.2	1	58.1	10.4	1	X
SMBJ40A	SMBJ40CA	MR	CR	40	44.4	49.1	1	64.5	9.3	1	X
SMBJ43A	SMBJ43CA	MT	CT	43	47.8	52.8	1	69.4	8.7	1	X
SMBJ45A	SMBJ45CA	MV	CV	45	50.0	55.3	1	72.7	8.3	1	X
SMBJ48A	SMBJ48CA	MX	CX	48	53.3	58.9	1	77.4	7.8	1	X
SMBJ51A	SMBJ51CA	MZ	CZ	51	56.7	62.7	1	82.4	7.3	1	X
SMBJ54A	SMBJ54CA	NE	DE	54	60.0	66.3	1	87.1	6.9	1	X
SMBJ58A	SMBJ58CA	NG	DG	58	64.4	71.2	1	93.6	6.5	1	X
SMBJ60A	SMBJ60CA	NK	DK	60	66.7	73.7	1	96.8	6.2	1	X
SMBJ64A	SMBJ64CA	NM	DM	64	71.1	78.6	1	103	5.9	1	X
SMBJ70A	SMBJ70CA	NP	DP	70	77.8	86.0	1	113	5.3	1	X
SMBJ75A	SMBJ75CA	NR	DR	75	83.3	92.1	1	121	5.0	1	X
SMBJ78A	SMBJ78CA	NT	DT	78	86.7	95.8	1	126	4.8	1	X
SMBJ85A	SMBJ85CA	NV	DV	85	94.4	104	1	137	4.4	1	X

Characteristics table (T_a = 25°C)

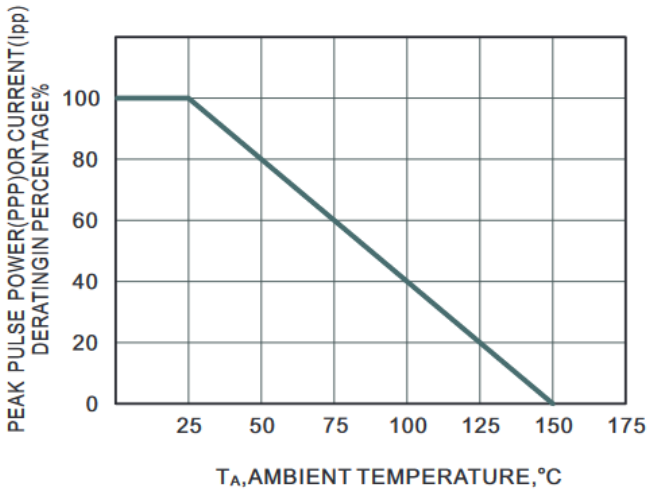
Part number (UNI)	Part number (BI)	Marking		Reverse stand off voltage	Breakdown voltage @I_T V_{BR}		Test current	Maximum clamping voltage @I_{PP}	Maximum peak pulse current	Maximum reverse leakage @V_R	Agency approval
				V_R	MIN	MAX	I_T	V_C	I_{PP}	I_R	
		UNI	BI	V	V	V	mA	V	A	µA	
SMBJ90A	SMBJ90CA	NX	DX	90	100	111	1	146	4.1	1	X
SMBJ100A	SMBJ100CA	NZ	DZ	100	111	123	1	162	3.7	1	X
SMBJ110A	SMBJ110CA	PE	EE	110	122	135	1	177	3.4	1	X
SMBJ120A	SMBJ120CA	PG	EG	120	133	147	1	193	3.1	1	X
SMBJ130A	SMBJ130CA	PK	EK	130	144	159	1	209	2.9	1	X
SMBJ150A	SMBJ150CA	PM	EM	150	167	185	1	243	2.5	1	X
SMBJ160A	SMBJ160CA	PP	EP	160	178	197	1	259	2.3	1	X
SMBJ170A	SMBJ170CA	PR	ER	170	189	209	1	275	2.2	1	X
SMBJ180A	SMBJ180CA	PT	ET	180	201	222	1	292	2.1	1	
SMBJ190A	SMBJ190CA	PA	EC	190	211	233	1	308	2.0	1	
SMBJ200A	SMBJ200CA	PV	EV	200	224	247	1	324	1.9	1	
SMBJ210A	SMBJ210CA	PB	ED	210	237	263	1	340	1.8	1	
SMBJ220A	SMBJ220CA	PX	EX	220	246	272	1	356	1.7	1	
SMBJ250A	SMBJ250CA	PZ	EZ	250	279	309	1	405	1.5	1	
SMBJ300A	SMBJ300CA	QE	FE	300	335	371	1	486	1.3	1	
SMBJ350A	SMBJ350CA	QG	FG	350	391	432	1	567	1.1	1	
SMBJ400A	SMBJ400CA	QK	FK	400	447	494	1	648	0.9	1	
SMBJ440A	SMBJ440CA	QM	FM	440	492	543	1	713	0.9	1	

For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.
For parts without A, the V_{BR} is ±10% and V_C is 5% higher than with A parts.

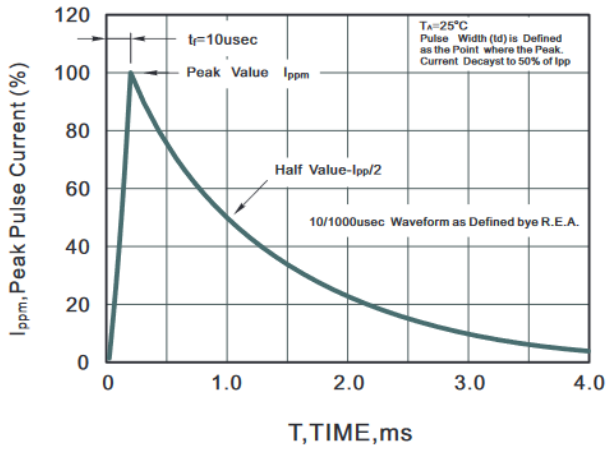
Peak pulse power rating curve



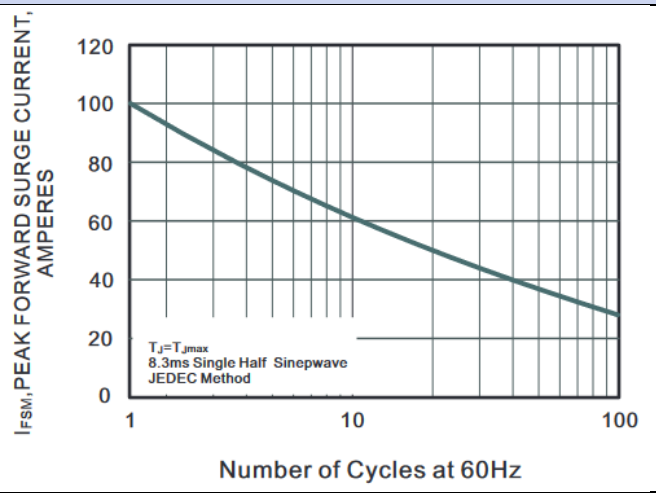
Pulse derating curve



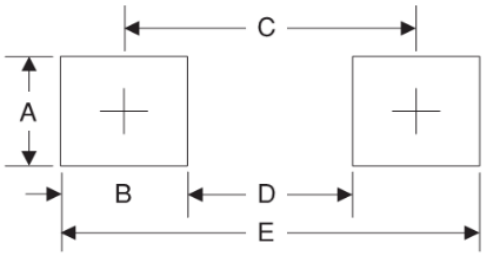
Pulse waveform



Maximum non-repetitive peak forward surge current



Suggested soldering pad layout



SMB (DO-214AA)

Unit	A	B	C	D	E
mm	2.8	2.4	4.6	2.2	7.0

Ordering information

Part number	Package	Shipping reel quantity	Dimensions
SMBJ5.0A(CA) ~ SMBJ440A(CA)	SMB (DO-214AA)	**3 000 pcs / reel** **30 000 pcs / box**	--- 360 x 360 x 280 mm

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