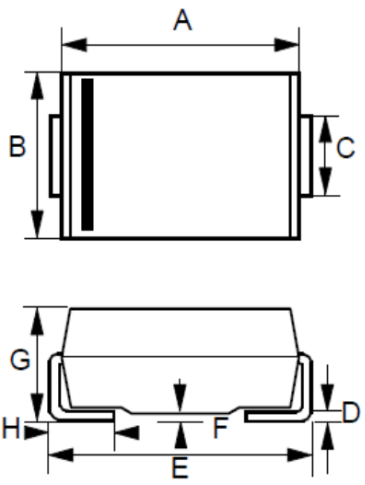
SMD Transient Voltage Suppressor Diodes

Primary characteristics		
Parameter	**Value**	**Unit**
V_{RWM} range nom.	5.0 to 440	V
Peak power	1500	W

Features

- **SMC (DO-214AB)** case for easy automatic insertion
- Pb-free and **RoHS** compliant
- Approx. weight: 0.22g / 0.0077oz
- Glass passivated junction
- Low inductance
- Solderable per MIL-STD-750, Method 2026
- Plastic package has underwriters laboratory flammability

Case dimensions



SMC (DO-214AB)

Unit	A	B	C	D	E	F	G	H
mm	6.9 -0.30 +0.21	5.9 -0.31 +0.32	3.05 ±0.13	0.23 ±0.08	7.94 ±0.19	0.12 -0.07 +0.08	2.25 -0.24 +0.25	1.14 ±0.38

Part numbering system

SMCJ	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	P_{PPM}	1500	W
Peak forward surge current [2]	$I_{FSM(UNI)}$	200	A
Peak pulse current on 10/1000 µs waveform	I_{PPM}	Characteristics table	A
Steady state power dissipation at T_A=50°C	P_D	6.5	W
Maximum instantaneous forward voltage at 100A (Unidirectional only)	V_F	3.5	V
Typical thermal resistance junction to ambient [1]	$R_{\theta JA}$	75	°C/W
Typical thermal resistance junction to lead [1]	$R_{\theta JL}$	15	°C/W
Operating junction temperature and storage temperature range	T_j, T_{stg}	-65 ~ 150	°C

Notes:
1) Mounted on 8mm² (0.13mm thick) pads to each terminal
2) Peak forward surge current : 8.3ms single half sine-wave superimposed on rated load (JEDEC method)

Characteristics table (T_a = 25°C)

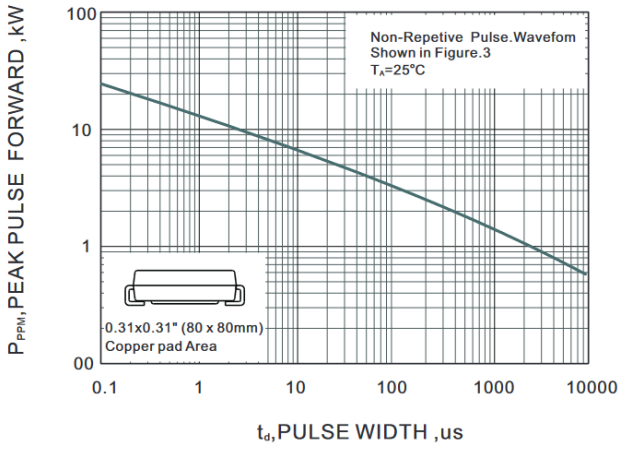
Part number (UNI)	Part number (BI)	Marking		Reverse stand off voltage	Breakdown voltage @I_T		Test current	Maximum clamping voltage @I_{PP}	Peak pulse current	Reverse leakage @V_{RWM}	Agency approval
					V_{BR}						
				V_{RWM}	MIN	MAX	I_T	V_C	I_{PP}	I_R	
		UNI	BI	V	V	V	mA	V	A	µA	
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	5.0	6.40	7.00	10	9.2	163.0	800	X
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6.0	6.67	7.37	10	10.3	145.7	800	X
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	6.5	7.22	7.98	10	11.2	134.0	500	X
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7.0	7.78	8.60	10	12.0	125.0	200	X
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	7.5	8.33	9.21	1.0	12.9	116.3	100	X
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.0	8.89	9.83	1.0	13.6	110.3	50	X
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	8.5	9.44	10.4	1.0	14.4	104.2	20	X
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	9.0	10.0	11.1	1.0	15.4	97.4	10	X
SMCJ10A	SMCJ10CA	GDX	BDX	10	11.1	12.3	1.0	17.0	88.3	5	X
SMCJ11A	SMCJ11CA	GDZ	BDZ	11	12.2	13.5	1.0	18.2	82.5	1	X
SMCJ12A	SMCJ12CA	GEE	BEE	12	13.3	14.7	1.0	19.9	75.4	1	X
SMCJ13A	SMCJ13CA	GEG	BEG	13	14.4	15.9	1.0	21.5	69.8	1	X
SMCJ14A	SMCJ14CA	GEK	BEK	14	15.6	17.2	1.0	23.2	64.7	1	X
SMCJ15A	SMCJ15CA	GEM	BEM	15	16.7	18.5	1.0	24.4	61.5	1	X
SMCJ16A	SMCJ16CA	GEP	BEP	16	17.8	19.7	1.0	26.0	57.7	1	X
SMCJ17A	SMCJ17CA	GER	BER	17	18.9	20.9	1.0	27.6	54.4	1	X
SMCJ18A	SMCJ18CA	GET	BET	18	20.0	22.1	1.0	29.2	51.4	1	X
SMCJ20A	SMCJ20CA	GEV	BEV	20	22.2	24.5	1.0	32.4	46.3	1	X
SMCJ22A	SMCJ22CA	GEX	BEX	22	24.4	26.9	1.0	35.5	42.3	1	X
SMCJ24A	SMCJ24CA	GEZ	BEZ	24	26.7	29.5	1.0	38.9	38.6	1	X
SMCJ26A	SMCJ26CA	GFE	BFE	26	28.9	31.9	1.0	42.1	35.7	1	X
SMCJ28A	SMCJ28CA	GFG	BFG	28	31.1	34.4	1.0	45.4	33.1	1	X
SMCJ30A	SMCJ30CA	GFK	BFK	30	33.3	36.8	1.0	48.4	31.0	1	X
SMCJ33A	SMCJ33CA	GFM	BFM	33	36.7	40.6	1.0	53.3	28.2	1	X
SMCJ36A	SMCJ36CA	GFP	BFP	36	40.0	44.2	1.0	58.1	25.9	1	X
SMCJ40A	SMCJ40CA	GFR	BFR	40	44.4	49.1	1.0	64.5	23.3	1	X
SMCJ43A	SMCJ43CA	GFT	BFT	43	47.8	52.8	1.0	69.4	21.7	1	X
SMCJ45A	SMCJ45CA	GFV	BFV	45	50.0	55.3	1.0	72.7	20.6	1	X
SMCJ48A	SMCJ48CA	GFX	BFX	48	53.3	58.9	1.0	77.4	19.4	1	X
SMCJ51A	SMCJ51CA	GFZ	BFZ	51	56.7	62.7	1.0	82.4	18.2	1	X
SMCJ54A	SMCJ54CA	GGE	BGE	54	60.0	66.3	1.0	87.1	17.3	1	X
SMCJ58A	SMCJ58CA	GGG	BGG	58	64.4	71.2	1.0	93.6	16.1	1	X
SMCJ60A	SMCJ60CA	GGK	BGK	60	66.7	73.7	1.0	96.8	15.5	1	X
SMCJ64A	SMCJ64CA	GGM	BGM	64	71.1	78.6	1.0	103	14.6	1	X
SMCJ70A	SMCJ70CA	GGP	BGP	70	77.8	86.0	1.0	113	13.3	1	X
SMCJ75A	SMCJ75CA	GGR	BGR	75	83.3	92.1	1.0	121	12.4	1	X
SMCJ78A	SMCJ78CA	GGT	BGT	78	86.7	95.8	1.0	126	11.9	1	X
SMCJ85A	SMCJ85CA	GGV	BGV	85	94.4	104	1.0	137	11.0	1	X

Characteristics table (T_a = 25°C)

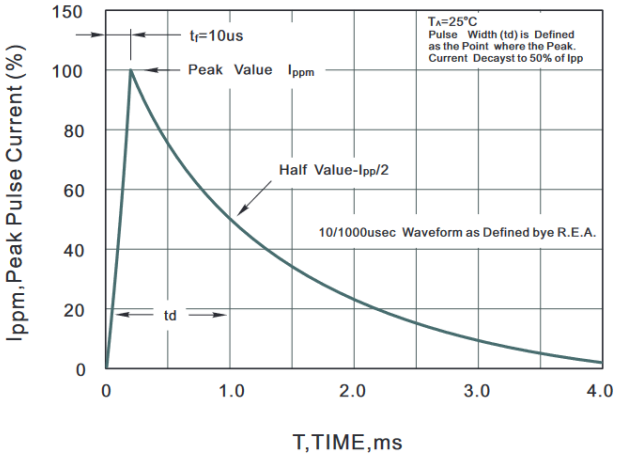
Part number (UNI)	Part number (BI)	Marking		Reverse stand off voltage	Breakdown voltage @I_T		Test current	Maximum clamping voltage @I_{PP}	Peak pulse current	Reverse leakage @V_{RWM}	Agency approval
					V_{BR}						
				V_{RWM}	MIN	MAX	I_T	V_C	I_{PP}	I_R	
		UNI	BI	V	V	V	mA	V	A	µA	
SMCJ90A	SMCJ90CA	GGX	BGX	90	100	111	1.0	146	10.3	1	X
SMCJ100A	SMCJ100CA	GGZ	BGZ	100	111	123	1.0	162	9.3	1	X
SMCJ110A	SMCJ110CA	GHE	BHE	110	122	135	1.0	177	8.5	1	X
SMCJ120A	SMCJ120CA	GHG	BHG	120	133	147	1.0	193	7.8	1	X
SMCJ130A	SMCJ130CA	GHK	BHK	130	144	159	1.0	209	7.2	1	X
SMCJ150A	SMCJ150CA	GHM	BHM	150	167	185	1.0	243	6.2	1	X
SMCJ160A	SMCJ160CA	GHP	BHP	160	178	197	1.0	259	5.8	1	X
SMCJ170A	SMCJ170CA	GHR	BHR	170	189	209	1.0	275	5.5	1	X
SMCJ180A	SMCJ180CA	GHT	BHT	180	201	222	1.0	292	5.1	1	X
SMCJ190A	SMCJ190CA	GHU	BHU	190	211	233	1.0	308	4.8	1	X
SMCJ200A	SMCJ200CA	GHV	BHV	200	224	247	1.0	324	4.6	1	X
SMCJ210A	SMCJ210CA	GHW	BHW	210	237	263	1.0	340	4.4	1	X
SMCJ220A	SMCJ220CA	GHX	BHX	220	246	272	1.0	356	4.2	1	X
SMCJ250A	SMCJ250CA	GHZ	BHZ	250	279	309	1.0	405	3.7	1	X
SMCJ300A	SMCJ300CA	GJE	BJE	300	335	371	1.0	486	3.1	1	X
SMCJ350A	SMCJ350CA	GJG	BJG	350	391	432	1.0	567	2.6	1	X
SMCJ400A	SMCJ400CA	GJK	BJK	400	447	494	1.0	648	2.3	1	X
SMCJ440A	SMCJ440CA	GJM	BJM	440	492	543	1.0	713	2.1	1	X

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.

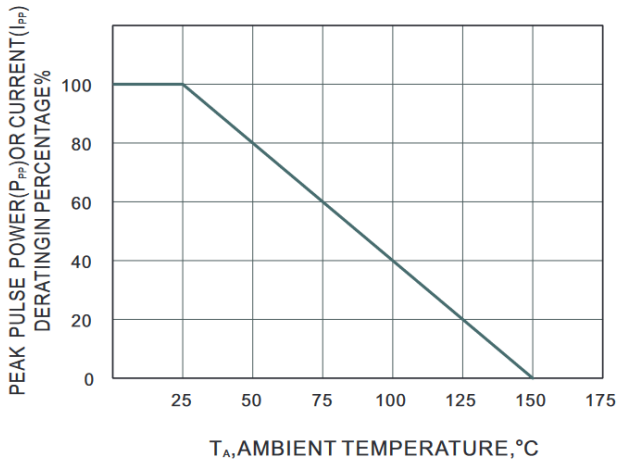
Peak pulse power rating curve



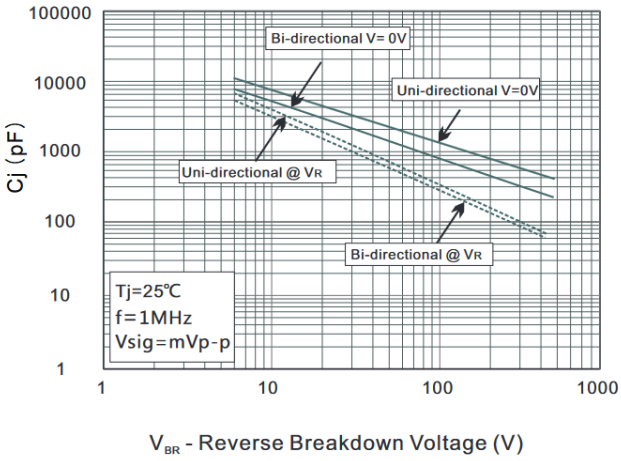
Pulse waveform



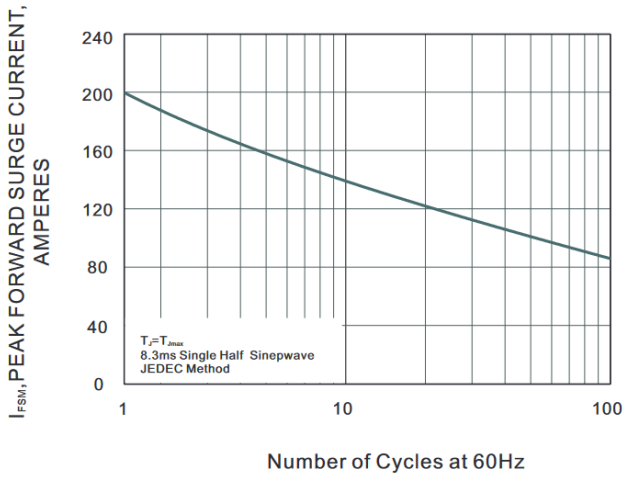
Forward current derating curve



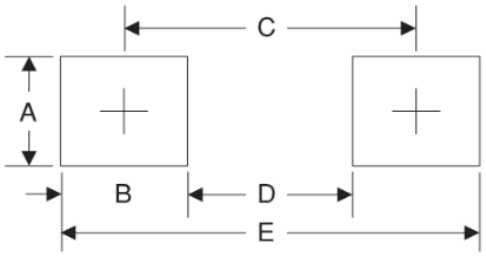
Typical junction capacitance



Maximum non-repetitive peak forward surge current



Suggested soldering pad layout



SMC (DO-214AB)

Unit	A	B	C	D	E
mm	4.3	4.1	7.9	3.8	12

Ordering information

Part number	Package	Shipping reel quantity	Dimensions
SMCJ5.0A(CA) ~ SMCJ440A(CA)	SMC (DO-214AB)	**3 000 pcs / reel** **30 000 pcs / reel**	--- 360 x 360 x 280 mm

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