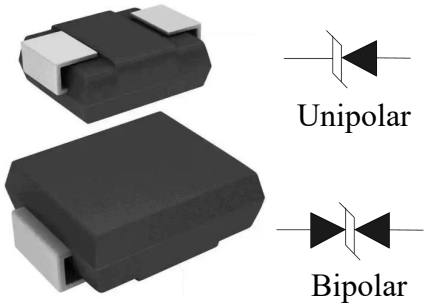
SMDJxx(C)A

Power Transient Voltage Suppressor

Features

- 3000 watts Peak Pulse Power (10/1000μs)
- Unidirectional and Bidirectional Protection
- Fast Response Time : Typically < 1ns
- Excellent Clamping Capability
- Built-in Strain relief
- Low inductance
- Low profile package
- High temperature solder:260℃/10 seconds at terminal



Simplified outline SMC and symbol

Mechanical Characteristics

- Case: JEDEC DO-214AB package
- Molding compound flammability rating: UL 94V-0
- Terminals: Solderable per MIL-STD-750, Method 2026
- RoHS &UL497B Compliant
- Approx:Weight: 0.22g / 0.0077oz

Applications

- I/O Interfaces
- Power lines
- Telecommunication
- Computers &Consumer Electronics
- Industrial/Consumer Electronics

Absolute Maximum Rating(Ratings at 25 °C ambient temperature unless otherwise specified.)

Rating	Symbol	Value	Units
Peak Pulse Power (tp =10/1000μs) (see Note1,2& 3)	P_{PPM}	3000	Watts
Peak pulse current (10/1000μs) (see Note2&3)	I_{PPM}	See Electrical Characteristics	A
Peak forward surge current (see Note4&5)	I_{FSM}	300	A
Power dissipation on infinite heat sink TL = 50 °C (Fig5)	P_D	6.5	W
Operating junction temperature range	T_J	-65 to + 150	℃
Storage temperature range	T_{STG}	-65 to + 150	℃

Note1: Peak Pulse Power Rating as Pulse Width ,per Fig1.

Note2: Peak Pulse Power or Current Derated above TA=25℃ Per Fig. 2 and Non-Repetitive Current Pulse, Per Fig.3.

Note3: Mounted on 5.0x5.0mm^2 copper pad to each terminal.

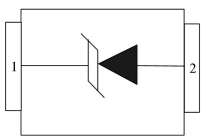
Note4: 8.3ms Single Half Sine Wave or Equivalent Square Wave.

Note5: Maximum Forward Surge Current only for Unidirectional Device per Fig6.

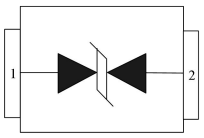
Note6: Peak pulse power waveform is 10/1000μS.

Note7: P.C.B. mounted with 1.5" X 1.5" (3.81 X 3.81 cm) copper pad areas.

Pin Configuration

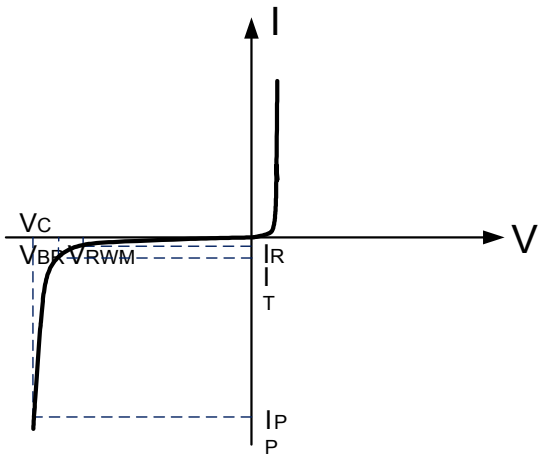


Unidirectional

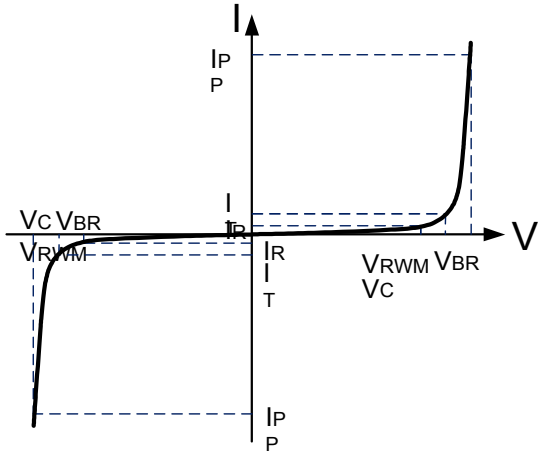


Bidirectional

Electrical Characteristics（Tc=25℃ Unless otherwise specified）



I-V curve of unidirectional device



I-V curve of bidirectional device

Part Number		Marking Code		Reverse Stand off Voltage (Volts)	Breakdown Voltage VBR@IT (Volts)		Test Current IT (mA)	Reverse Leakage (μA)	Max. Clamp Voltage (Volts)	Peak Pulse Current (Amps)
					Min	Max		IR @ VRWM	VC @ IPP	IPP
Uni	Bi	Uni	Bi	V	V	V	mA	μA	V	A
SMDJ5.0A	SMDJ5.0CA	RDE	DDE	5.0	6.4	7	10	800	9.2	326.1
SMDJ6.0A	SMDJ6.0CA	RDG	DDG	6.0	6.67	7.37	10	800	10.3	291.3
SMDJ6.5A	SMDJ6.5CA	RDK	DDK	6.5	7.22	7.98	10	500	11.2	267.9
SMDJ7.0A	SMDJ7.0CA	PDM	DDM	7.0	7.78	8.6	10	200	12	250
SMDJ7.5A	SMDJ7.5CA	PDP	DDP	7.5	8.33	9.21	1	100	12.9	232.6
SMDJ8.0A	SMDJ8.0CA	PDR	DDR	8.0	8.89	9.83	1	50	13.6	220.6
SMDJ8.5A	SMDJ8.5CA	PDT	DDT	8.5	9.44	10.4	1	20	14.4	208.3
SMDJ9.0A	SMDJ9.0CA	PDV	DDV	9.0	10	11.1	1	10	15.4	194.8
SMDJ10A	SMDJ10CA	PDX	DDX	10.0	11.1	12.3	1	5	17	176.5
SMDJ11A	SMDJ11CA	PDZ	DDZ	11.0	12.2	13.5	1	2	18.2	164.8
SMDJ12A	SMDJ12CA	PEE	DEE	12.0	13.3	14.7	1	2	19.9	150.8
SMDJ13A	SMDJ13CA	PEG	DEG	13.0	14.4	15.9	1	2	21.5	139.5
SMDJ14A	SMDJ14CA	PEK	DEK	14.0	15.6	17.2	1	2	23.2	129.3
SMDJ15A	SMDJ15CA	PEM	DEM	15.0	16.7	18.5	1	2	24.4	123
SMDJ16A	SMDJ16CA	PEP	DEP	16.0	17.8	19.7	1	2	26	115.4
SMDJ17A	SMDJ17CA	PER	DER	17.0	18.9	20.9	1	2	27.6	108.7
SMDJ18A	SMDJ18CA	PET	DET	18.0	20	22.1	1	2	29.2	102.7
SMDJ20A	SMDJ20CA	PEV	DEV	20.0	22.2	24.5	1	2	32.4	92.6
SMDJ22A	SMDJ22CA	PEX	DEX	22.0	24.4	26.9	1	2	35.5	84.5
SMDJ24A	SMDJ24CA	PEZ	DEZ	24.0	26.7	29.5	1	2	38.9	77.1
SMDJ26A	SMDJ26CA	PFE	DFE	26.0	28.9	31.9	1	2	42.1	71.3
SMDJ28A	SMDJ28CA	PFG	DFG	28.0	31.1	34.4	1	2	45.4	66.1
SMDJ30A	SMDJ30CA	PFK	DFK	30.0	33.3	36.8	1	2	48.4	62

SMDJ33A	SMDJ33CA	PFM	DFM	33.0	36.7	40.6	1	2	53.3	56.3
SMDJ36A	SMDJ36CA	PFP	DFP	36.0	40	44.2	1	2	58.1	51.6
SMDJ40A	SMDJ40CA	PFR	DFR	40.0	44.4	49.1	1	2	64.5	46.5
SMDJ43A	SMDJ43CA	PFT	DFT	43.0	47.8	52.8	1	2	69.4	43.2
SMDJ45A	SMDJ45CA	PFV	DFV	45.0	50	55.3	1	2	72.7	41.3
SMDJ48A	SMDJ48CA	PFX	DFX	48.0	53.3	58.9	1	2	77.4	38.8
SMDJ51A	SMDJ51CA	PFZ	DFZ	51.0	56.7	62.7	1	2	82.4	36.4
SMDJ54A	SMDJ54CA	RGE	DGE	54.0	60	66.3	1	2	87.1	34.4
SMDJ58A	SMDJ58CA	PGG	DGG	58.0	64.4	71.2	1	2	93.6	32.1
SMDJ60A	SMDJ60CA	PGK	DGK	60.0	66.7	73.7	1	2	96.8	31
SMDJ64A	SMDJ64CA	PGM	DGM	64.0	71.1	78.6	1	2	103	29.1
SMDJ70A	SMDJ70CA	PGP	DGP	70.0	77.8	86	1	2	113	26.5
SMDJ75A	SMDJ75CA	PGR	DGR	75.0	83.3	92.1	1	2	121	24.8
SMDJ78A	SMDJ78CA	PGT	DGT	78.0	86.7	95.8	1	2	126	23.8
SMDJ85A	SMDJ85CA	PGV	DGV	85.0	94.4	104	1	2	137	21.9
SMDJ90A	SMDJ90CA	PGX	DGX	90.0	100	111	1	2	146	20.5
SMDJ100A	. SMDJ100CA	PGZ	DGZ	100.0	111	123	1	2	162	18.5
SMDJ110A	SMDJ110CA	PHE	DHE	110.0	122	135	1	2	177	16.9
SMDJ120A	SMDJ120CA	PHG	DHG	120.0	133	147	1	2	193	15.5
SMDJ130A	SMDJ130CA	PHK	DHK	130.0	144	159	1	2	209	14.4
SMDJ150A	SMDJ150CA	PHM	DHM	150.0	167	185	1	2	243	12.3
SMDJ160A	SMDJ160CA	PHP	DHP	160.0	178	197	1	2	259	11.6
SMDJ170A	SMDJ170CA	PHR	DHR	170.0	189	209	1	2	275	10.9
SMDJ180A	SMDJ180CA	PHT	DHT	180	201	222	1	2	292.0	10.3
SMDJ190A	SMDJ190CA	PHV	DHV	190	211	232	1	2	307.0	9.7
SMDJ200A	SMDJ200CA	PHX	DHX	200	224	247	1	2	324.0	9.3
SMDJ220A	SMDJ220CA	PHZ	DHZ	220	246	272	1	2	356.0	8.43

Typical Characteristics

Figure 1. Peak Pulse Power Rating Curve

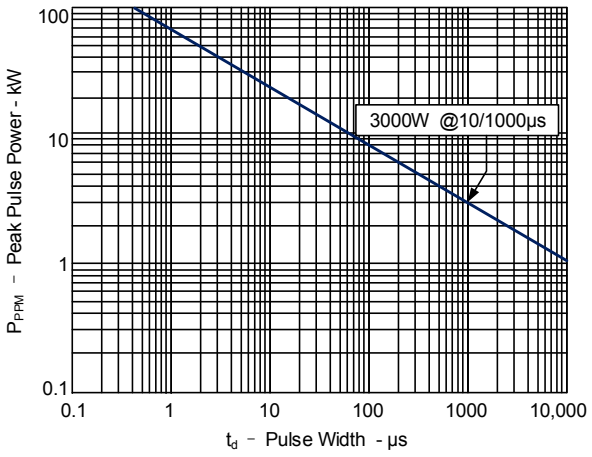


Figure 2. Pulse Derating Curve

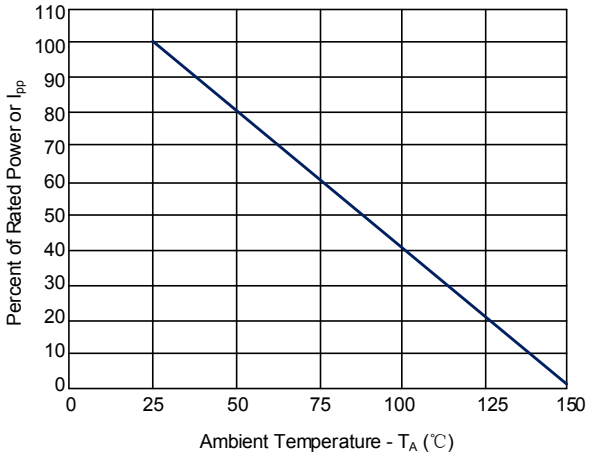


Figure 3. Pulse Waveform

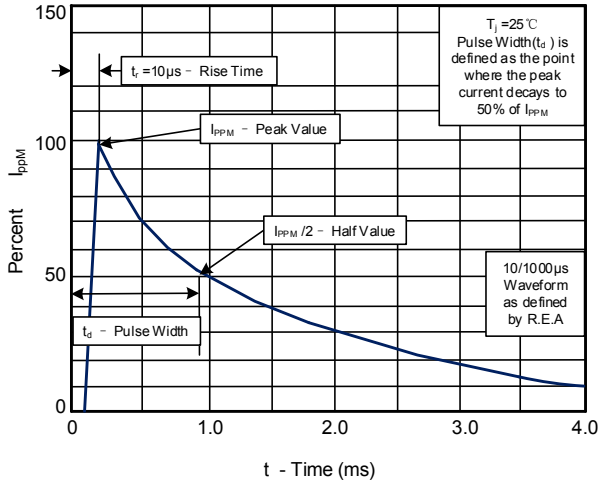


Figure 4. Typical Junction Capacitance

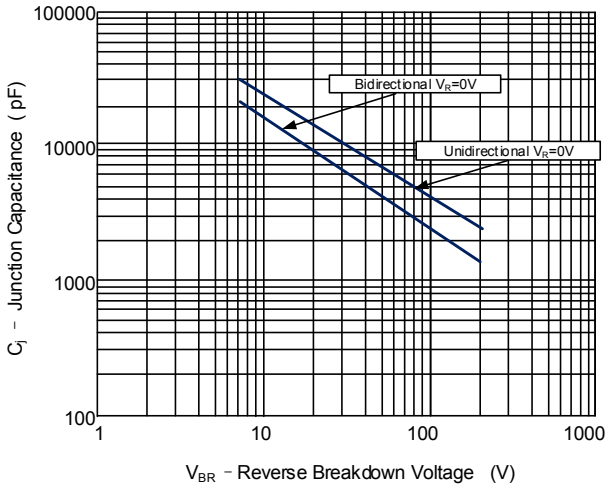


Figure 5. Steady State Power Dissipation Derating Curve

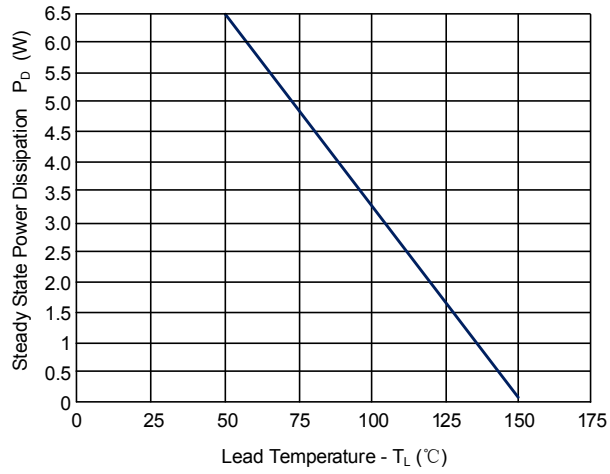
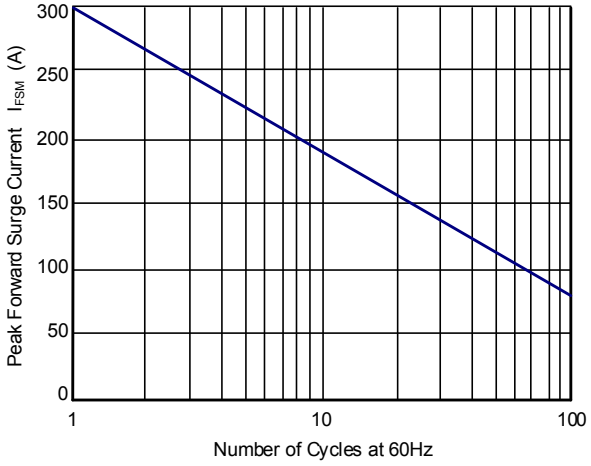


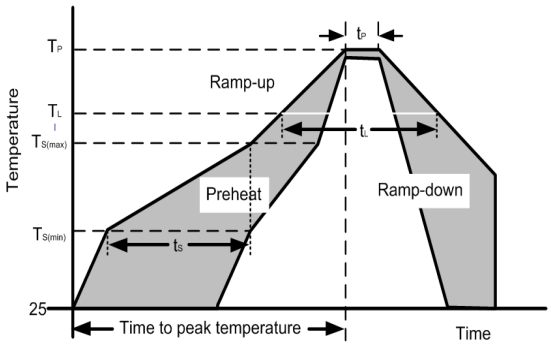
Figure 6. Maximum Non-Repetitive Forward Surge Current Only Unidirectional



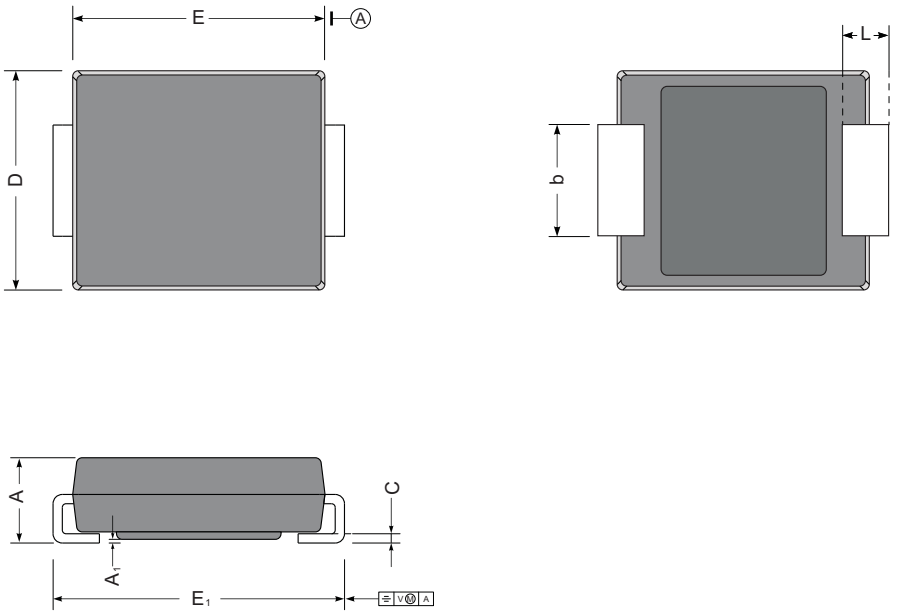
Note: The above typical parameters or typical characteristics are only indicative and do not make specific guarantees. If detailed values are required, additional communication and provision are required.

Soldering Parameters

Reflow Condition		
Pre-Heat	Temperature min ($T_{s(min)}$)	150°C
	Temperature max ($T_{s(max)}$)	200°C
	Time (min to max) (t_s)	60-190 s
Average ramp up rate (Liquidus Temp) (T_L) to peak		3°C/s max
Ts(max) to TL - Ramp-up Rate		3°C/s max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60-150 s
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within actual peak Temperature (t_p)		20-40 s
Ramp-down Rate		5°C/s max
Time 25°C to peak Temperature (T_P)		8 minutes max
Do not exceed		260°C



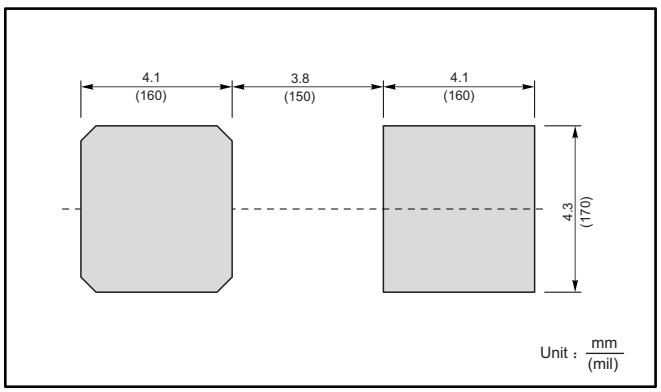
Outline Drawing – SMC(DO-214AB)



SMC mechanical data

UNIT		A	E	D	E_1	A_1	C	L	b
mm	max	2.62	7.0	6.2	8.0	0.21	0.31	1.6	3.25
	min	2.00	6.5	5.6	7.6	0.05	0.15	0.9	2.75
mil	max	103	276	244	315	8.3	12	63	128
	min	79	256	220	299	2.0	5.9	35	108

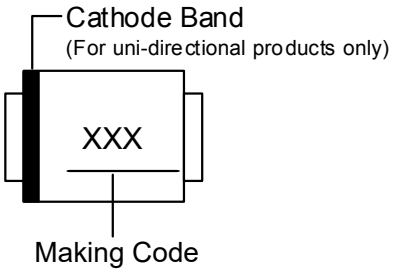
The recommended mounting pad size



Package Information

Package Type	Description	Quantity（pcs）	Standard
SMC(DO-214AB)	Tape & Reel -16mm/13″ tape	3000	EIA-481-D

Part Marking System



Contact Information

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For additional information, please contact your local Sales Representative.

