

Transient Voltage Suppressor

Working Peak Reverse Voltage: 5.0 to 170 Volts

Power Dissipation: 1500Watts

RoHS Device

Halogen Free



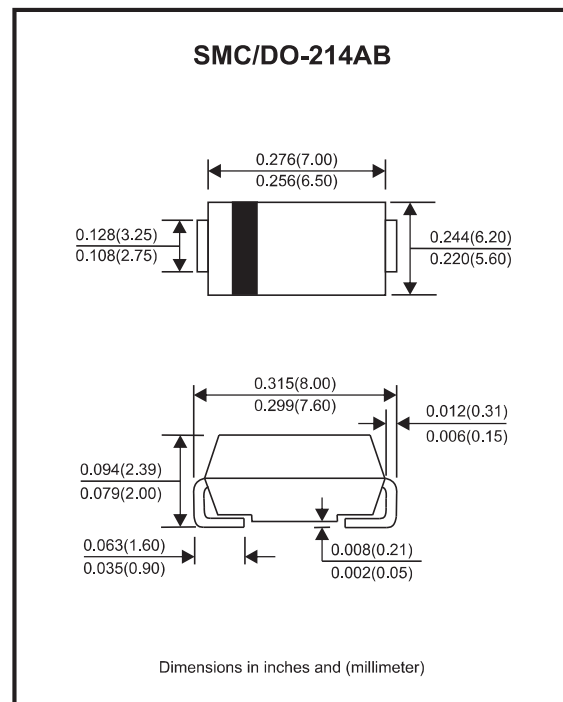
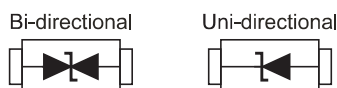
Features

- For surface mounted applications in order to optimize board space.
- Low profile package.
- Built-in strain relief.
- Glass passivated chip junction.
- 3000W peak pulse power capability at 10x1000us waveform, repetition rate (duty cycles): 0.01%.
- Excellent clamping capability.
- Low incremental surge resistance.
- Matte tin lead-free plated.

Mechanical Data

- Case: SMC molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.

Circuit Diagram



Maximum Ratings and Electrical Characteristics (TA = 25°C unless otherwise noted)

Characteristics	Symbol	Value	Units
Peak pulse power dissipation at TA = 25°C by 10 x 1000μs waveform (Fig.1) (Note 1, 2)	P _{PPM}	3000	W
Power dissipation on infinite heat sink at TA = 50°C	P _{M(AV)}	6.5	W
Peak forward surge current, 8.3ms single half sine wave (Note 3)	I _{FSM}	300	A
Maximum instantaneous forward voltage at 100A for unidirectional only	V _F	3.5	V
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +150	°C
Typical thermal resistance junction to lead	R _{θJL}	15	°C/W
Typical thermal resistance junction to ambient	R _{θJA}	75	°C/W

Notes: 1. Non-repetitive current pulse. per Fig 3 and derated above Ta= 25°C per Fig. 2.

2. Mounted on copper pad area of 0.31 x 0.31" (8.0 x 8.0mm) to each terminal.

3. Mounted on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle = 4 per minute maximum.

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Rev:1.0

3.0SMCJ Series



Electrical Characteristics (3.0SMCJ5.0(C)A THRU 3.0SMCJ170(C)A)

Part No.	Reverse stand-off voltage	Breakdown voltage V _{BR} @ I _T		Test current	Max. clamp voltage V _C @ I _{PP}	Max. peak pulse current	Max. reverse leakage I _R @ V _R	Device Marking Code	
	V _{RWM} (V)	Min (V)	Max (V)	I _T (mA)	(V)	I _{PP} (A)	(μA)	UNI	BI
3.0SMCJ5.0(C)A	5.0	6.40	7.00	10	9.2	326.1	800	RDE	DDE
3.0SMCJ6.0(C)A	6.0	6.67	7.37	10	10.3	291.3	800	RDG	DDG
3.0SMCJ6.5(C)A	6.5	7.22	7.98	10	11.2	267.9	500	RDK	DDK
3.0SMCJ7.0(C)A	7.0	7.78	8.60	10	12.0	250.0	200	PDM	DDM
3.0SMCJ7.5(C)A	7.5	8.33	9.21	1	12.9	232.6	100	PDP	DDP
3.0SMCJ8.0(C)A	8.0	8.89	9.83	1	13.6	220.6	50	PDR	DDR
3.0SMCJ8.5(C)A	8.5	9.44	10.40	1	14.4	208.3	20	PDT	DDT
3.0SMCJ9.0(C)A	9.0	10.00	11.10	1	15.4	194.8	10	PDV	DDV
3.0SMCJ10(C)A	10.0	11.10	12.30	1	17.0	176.5	5	PDX	DDX
3.0SMCJ11(C)A	11.0	12.20	13.50	1	18.2	164.8	2	PDZ	DDZ
3.0SMCJ12(C)A	12.0	13.30	14.70	1	19.9	150.8	2	PEE	DEE
3.0SMCJ13(C)A	13.0	14.40	15.90	1	21.5	139.5	2	PEG	DEG
3.0SMCJ14(C)A	14.0	15.60	17.20	1	23.2	129.3	2	PEK	DEK
3.0SMCJ15(C)A	15.0	16.70	18.50	1	24.4	123.0	2	PEM	DEM
3.0SMCJ16(C)A	16.0	17.80	19.70	1	26.0	115.4	2	PEP	DEP
3.0SMCJ17(C)A	17.0	18.90	20.90	1	27.6	108.7	2	PER	DER
3.0SMCJ18(C)A	18.0	20.00	22.10	1	29.2	102.7	2	PET	DET
3.0SMCJ20(C)A	20.0	22.20	24.50	1	32.4	92.6	2	PEV	DEV
3.0SMCJ22(C)A	22.0	24.40	26.90	1	35.5	84.5	2	PEX	DEX
3.0SMCJ24(C)A	24.0	26.70	29.50	1	38.9	77.1	2	PEZ	DEZ
3.0SMCJ26(C)A	26.0	28.90	31.90	1	42.1	71.3	2	PFE	DFE
3.0SMCJ28(C)A	28.0	31.10	34.40	1	45.4	66.1	2	PFG	DFG
3.0SMCJ30(C)A	30.0	33.30	36.80	1	48.4	62.0	2	PFK	DFK
3.0SMCJ33(C)A	33.0	36.70	40.60	1	53.3	56.3	2	PFM	DFM
3.0SMCJ36(C)A	36.0	40.00	44.20	1	58.1	51.6	2	PFP	DFP
3.0SMCJ40(C)A	40.0	44.40	49.10	1	64.5	46.5	2	PFR	DFR
3.0SMCJ43(C)A	43.0	47.80	52.80	1	69.4	43.2	2	PFT	DFT
3.0SMCJ45(C)A	45.0	50.00	55.30	1	72.7	41.3	2	PFV	DFV
3.0SMCJ48(C)A	48.0	53.30	58.90	1	77.4	38.8	2	PFX	DFX
3.0SMCJ51(C)A	51.0	56.70	62.70	1	82.4	36.4	2	PFZ	DFZ
3.0SMCJ54(C)A	54.0	60.00	66.30	1	87.1	34.4	2	RGE	DGE
3.0SMCJ58(C)A	58.0	64.40	71.20	1	93.6	32.1	2	PGG	DGG
3.0SMCJ60(C)A	60.0	66.70	73.70	1	96.8	31.0	2	PGK	DGK
3.0SMCJ64(C)A	64.0	71.10	78.60	1	103.0	29.1	2	PGM	DGM
3.0SMCJ70(C)A	70.0	77.80	86.00	1	113.0	26.5	2	PGP	DGP
3.0SMCJ75(C)A	75.0	83.30	92.10	1	121.0	24.8	2	PGR	DGR
3.0SMCJ78(C)A	78.0	86.70	95.80	1	126.0	23.8	2	PGT	DGT
3.0SMCJ85(C)A	85.0	94.40	104	1	137.0	21.9	2	PGV	DGV
3.0SMCJ90(C)A	90.0	100	111	1	146.0	20.5	2	PGX	DGX
3.0SMCJ100(C)A	100	111	123	1	162.0	18.5	2	PGZ	DGZ
3.0SMCJ110(C)A	110	122	135	1	177.0	16.9	2	PHE	DHE
3.0SMCJ120(C)A	120	133	147	1	193.0	15.5	2	PHG	DHG
3.0SMCJ130(C)A	130	144	159	1	209.0	14.4	2	PHK	DHK
3.0SMCJ150(C)A	150	167	185	1	243.0	12.3	2	PHM	DHM
3.0SMCJ160(C)A	160	178	197	1	259.0	11.6	2	PHP	DHP
3.0SMCJ170(C)A	170	189	209	1	275.0	10.9	2	PHR	DHR

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Rating and Characteristic Curves (3.0SMCJ5.0(C)A THRU 3.0SMCJ170(C)A)

Fig.1 - Peak Pulse Power Rating Curve

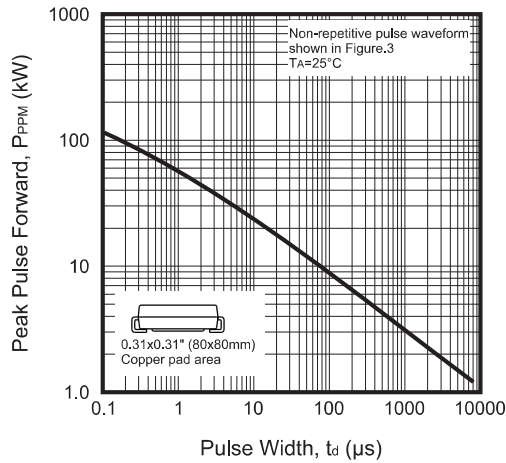


Fig.2 - Forward Current Derating Curve

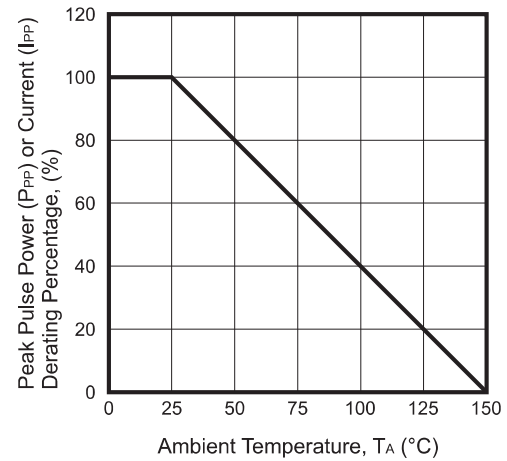


Fig.3 - Pulse Waveform

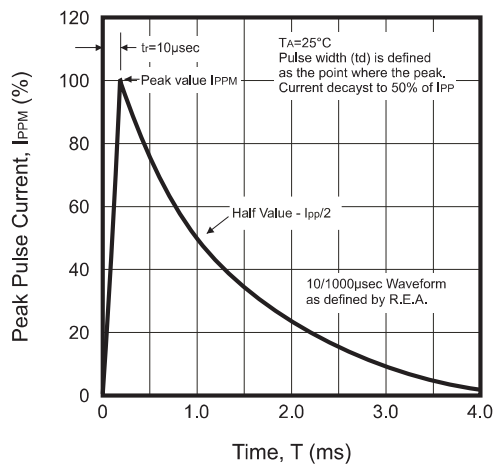


Fig.4 - Typical Junction Capacitance

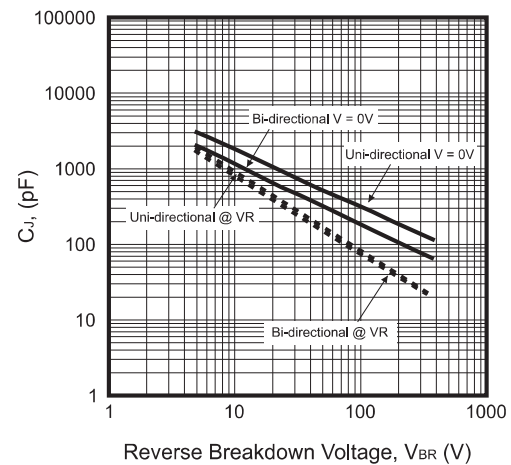


Fig.5 - Steady State Power Derating Curve

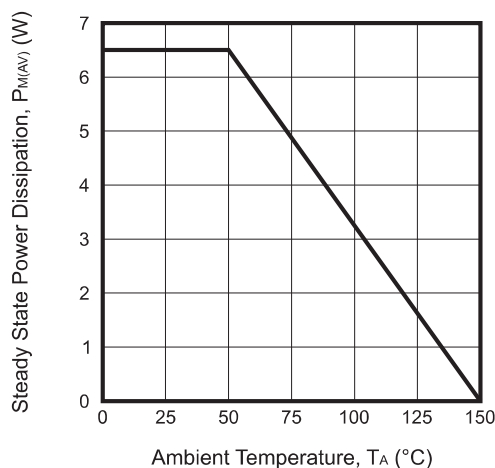
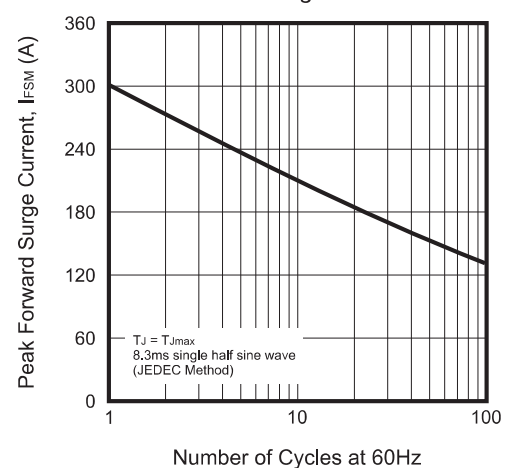


Fig.6 - Maximum Non-Repetitive Peak Forward Surge Current

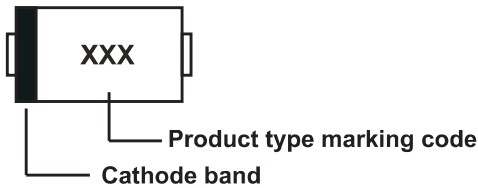


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Marking Code

Part Number	Marking Code
3.0SMCJ Series	See Page.2

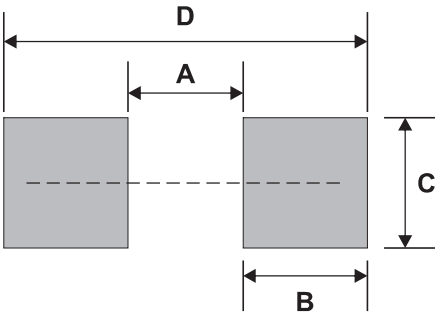


xxx = Marking code (see Page.2)

Suggested P.C.B. PAD Layout

SIZE	DO-214AB (SMC)	
	(mm)	(inch)
A	3.80	0.150
B	4.10	0.161
C	4.30	0.169
D	12.00	0.472

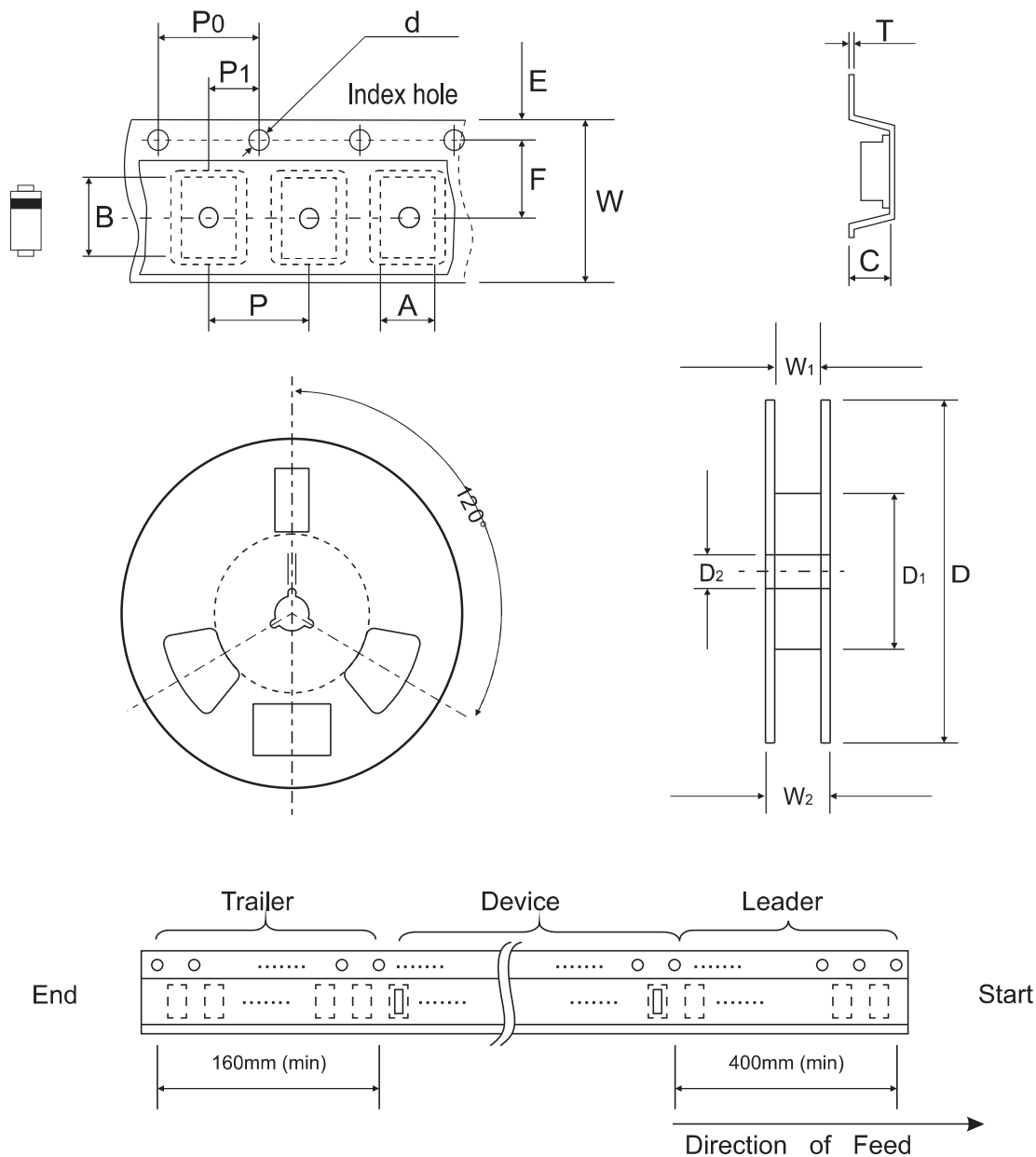
Note: 1. The pad layout is for reference purpose only.



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DO-214AB (SMC)	3,000	13

Reel Taping Specification



DO-214AB (SMC)	SYMBOL	A	B	C	d	T	D	D ₁	D ₂
	(mm)	See Note 1			1.55 ± 0.05	0.40 (Max.)	330.00	50.00 (Min.)	$13.00^{+0.50}_{-0.20}$
	(inch)				0.061 ± 0.002	0.016 (Max.)	13.000	1.969 (Min.)	$0.512^{+0.020}_{-0.008}$

DO-214AB (SMC)	SYMBOL	E	F	P	P ₀	P ₁	W	W ₁	W ₂
	(mm)	1.75 ± 0.10	7.50 ± 0.05	8.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	16.00 ± 0.10	$16.40^{+2.00}_{-0.00}$	22.40 (Max.)
	(inch)	0.069 ± 0.004	0.295 ± 0.002	0.315 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.630 ± 0.004	$0.646^{+0.079}_{-0.000}$	0.882 (Max.)

Notes: 1. A, B, and C the clearance between the component and the cavity must be within 0.5 mm max. for 8 mm tape and 12 mm tape, 1.0 mm max. for 16mm tape and 24 mm tape.

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