

DESCRIPTION

The 5.0SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

FEATURES

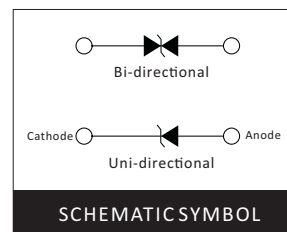
- > Low profile package
- > Ideal for automated placement
- > Available in uni-directional and Bi-directional
- > 5000 Watt peak pulse power capability with a 10/1000 μ s waveform
- > For surface mounted applications to optimize board space
- > Excellent clamping capability
- > Very fast response time
- > Low incremental surge resistance

APPLICATIONS

TVS devices are ideal for the protection of I/O Interfaces, VCC bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.



DO-214AB(SMC) PACKAGE



SCHEMATIC SYMBOL

MAXIMUM RATINGS @ 25°C UNLESS OTHERWISE SPECIFIED

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power dissipation at 10/1000 μ s waveform (Note1, Note2, Fig.2)	PPPM	5000	Watts
Steady state power dissipation at T _A =50°C (Fig.5)	P _{M(AV)}	6.5	Watts
Peak forward surge current, 8.3ms single half sine-wave(Note3, Fig.6)	I _{FSM}	300	A
Operating junction Temperatur Range	T _J	-55~125	°C
Storage Temperature Range	T _{STG}	-55~150	°C
Typical thermal resistance junction to ambient	R _{θJA}	75	°C/W

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.4.
2. Mounted on 8.0mm×8.0mm copper pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

ELECTRICAL CHARACTERISTICS PER LINE @ 25°C UNLESS OTHERWISE SPECIFIED

PART NUMBER		DEVICE MARKING CODE		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE @IT	TEST CURRENT	MAXIMUM CLAMPING VOLTAGE @I _{PP}	PEAK PULSE CURRENT	REVERSE LEAKAGE @V _{RWM}
Unidirectional	Bidirectional	UNI	BI	V _{RWM} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μ A)
5.0SMDJ11A	5.0SMDJ11CA	5PEN	5BEN	11.0	12.20~13.50	10	18.2	275.0	800
5.0SMDJ12A	5.0SMDJ12CA	5PEP	5BEP	12.0	13.30~14.70	10	19.9	252.0	800
5.0SMDJ13A	5.0SMDJ13CA	5PEQ	5BEQ	13.0	14.40~15.90	10	21.5	233.0	500
5.0SMDJ14A	5.0SMDJ14CA	5PER	5BER	14.0	15.60~17.20	10	23.2	216.0	200
5.0SMDJ15A	5.0SMDJ15CA	5PES	5BES	15.0	16.70~18.50	1	24.4	205.0	100
5.0SMDJ16A	5.0SMDJ16CA	5PET	5BET	16.0	17.80~19.70	1	26.0	193.0	50
5.0SMDJ17A	5.0SMDJ17CA	5PEU	5BEU	17.0	18.90~20.90	1	27.6	181.0	20
5.0SMDJ18A	5.0SMDJ18CA	5PEV	5BEV	18.0	20.00~22.10	1	29.2	172.0	10
5.0SMDJ20A	5.0SMDJ20CA	5PEW	5BEW	20.0	22.20~24.50	1	32.4	155.0	5

ELECTRICAL CHARACTERISTICS PER LINE@ 25°C UNLESS OTHERWISE SPECIFIED

PART NUMBER		DEVICE MARKING CODE		REVERSE STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE @IT	TEST CURRENT	MAXIMUM CLAMPING VOLTAGE @I _{PP}	PEAK PULSE CURRENT	REVERSE LEAKAGE @V _{RWM}
Unidirectional	Bidirectional	UNI	BI	V _{RWM} (V)	V _{BR} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
5.0SMDJ22A	5.0SMDJ22CA	5PEX	5BEX	22.0	24.40~26.90	1	35.5	141.0	5
5.0SMDJ24A	5.0SMDJ24CA	5PEZ	5BEZ	24.0	26.70~29.50	1	38.9	129.0	5
5.0SMDJ26A	5.0SMDJ26CA	5PFE	5BFE	26.0	28.90~31.90	1	42.1	119.0	5
5.0SMDJ28A	5.0SMDJ28CA	5PFG	5BFG	28.0	31.10~34.40	1	45.4	110.0	5
5.0SMDJ30A	5.0SMDJ30CA	5PFK	5BFK	30.0	33.30~36.80	1	48.4	103.0	5
5.0SMDJ33A	5.0SMDJ33CA	5PFM	5BFM	33.0	36.70~40.60	1	53.3	93.9	5
5.0SMDJ36A	5.0SMDJ36CA	5PFP	5BFP	36.0	40.00~44.20	1	58.1	86.1	5
5.0SMDJ40A	5.0SMDJ40CA	5PFR	5BFR	40.0	44.40~49.10	1	64.5	77.6	5
5.0SMDJ43A	5.0SMDJ43CA	5PFT	5BFT	43.0	47.80~52.80	1	69.4	72.1	5
5.0SMDJ45A	5.0SMDJ45CA	5PFV	5BFV	45.0	50.00~55.30	1	72.7	68.8	5
5.0SMDJ48A	5.0SMDJ48CA	5PFX	5BFX	48.0	53.30~58.90	1	77.4	64.7	5
5.0SMDJ51A	5.0SMDJ51CA	5PFZ	5BFZ	51.0	56.70~62.70	1	82.4	60.7	5
5.0SMDJ54A	5.0SMDJ54CA	5PGE	5BGE	54.0	60.00~66.30	1	87.1	57.5	5
5.0SMDJ58A	5.0SMDJ58CA	5PGG	5BGG	58.0	64.40~71.20	1	93.6	53.5	5
5.0SMDJ60A	5.0SMDJ60CA	5PGK	5BGK	60.0	66.70~73.70	1	96.8	51.7	5
5.0SMDJ64A	5.0SMDJ64CA	5PGM	5BGM	64.0	71.10~78.60	1	103.0	48.6	5
5.0SMDJ70A	5.0SMDJ70CA	5PGP	5BGP	70.0	77.80~86.00	1	113.0	44.3	5
5.0SMDJ75A	5.0SMDJ75CA	5PGR	5BGR	75.0	83.30~92.10	1	121.0	41.4	5
5.0SMDJ78A	5.0SMDJ78CA	5PGT	5BGT	78.0	86.70~95.80	1	126.0	39.7	5
5.0SMDJ85A	5.0SMDJ85CA	5PGV	5BGV	85.0	94.40~104.00	1	137.0	36.5	5
5.0SMDJ90A	5.0SMDJ90CA	5PGX	5BGX	90.0	100.00~111.00	1	146.0	34.3	5
5.0SMDJ100A	5.0SMDJ100CA	5PGZ	5BGZ	100.0	111.00~123.00	1	162.0	30.9	5
5.0SMDJ110A	5.0SMDJ110CA	5PHE	5BHE	110.0	122.00~135.00	1	177.0	28.3	5
5.0SMDJ120A	5.0SMDJ120CA	5PHG	5BHG	120.0	133.00~147.00	1	193.0	26.0	5
5.0SMDJ130A	5.0SMDJ130CA	5PHK	5BHK	130.0	144.00~159.00	1	209.0	24.0	5
5.0SMDJ150A	5.0SMDJ150CA	5PHM	5BHM	150.0	167.00~185.00	1	243.0	20.6	5
5.0SMDJ160A	5.0SMDJ160CA	5PHP	5BHB	160.0	178.00~197.00	1	259.0	19.3	5
5.0SMDJ170A	5.0SMDJ170CA	5PHR	5BHR	170.0	189.00~209.00	1	275.0	18.2	5

RATINGS AND CHARACTERISTIC CURVES (T_A=25°C unless otherwise noted)

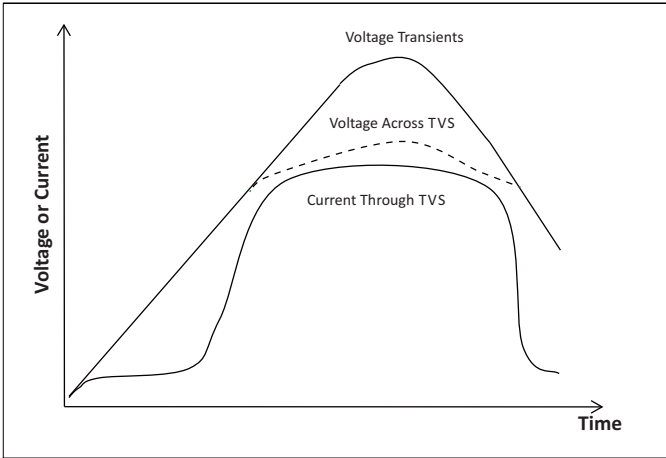


Figure 1 - TVS Transients Clamping Waveform

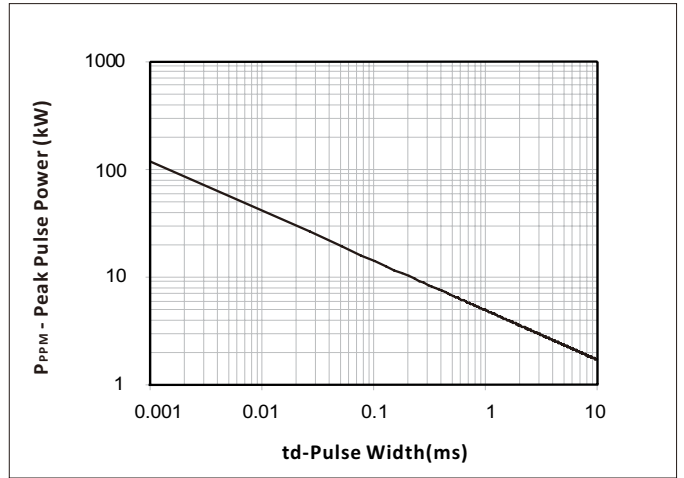


Figure 2. Peak Pulse Power Rating Curve

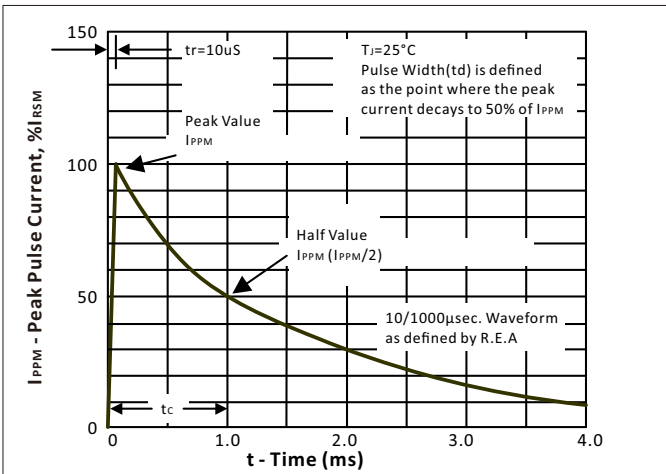


Figure 3. Pulse Waveform

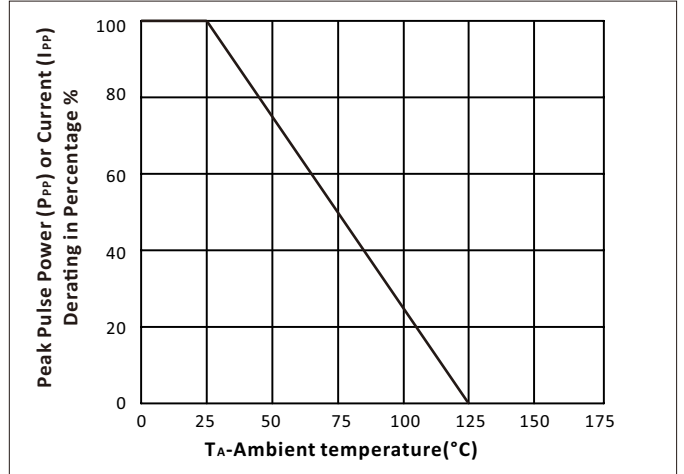


Figure 4. Pulse Derating Curve

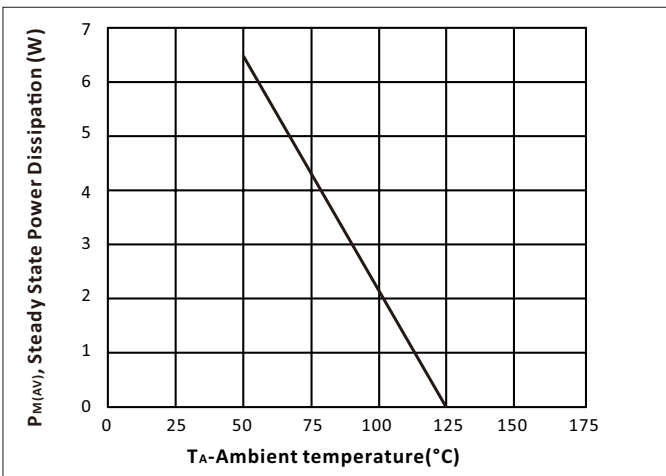


Figure 5. Steady State Power Dissipation Derating Curve

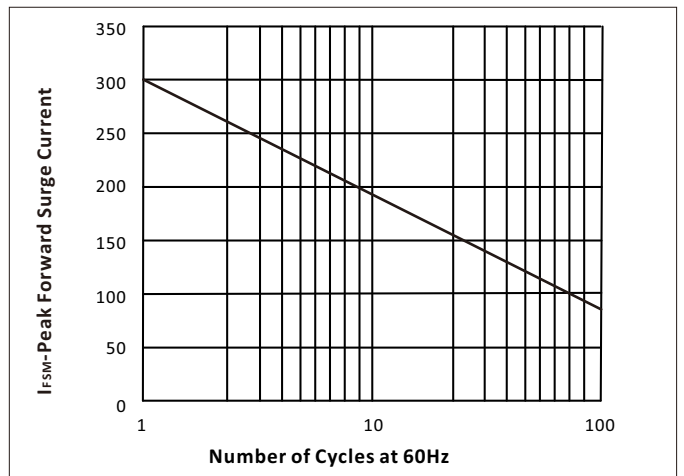
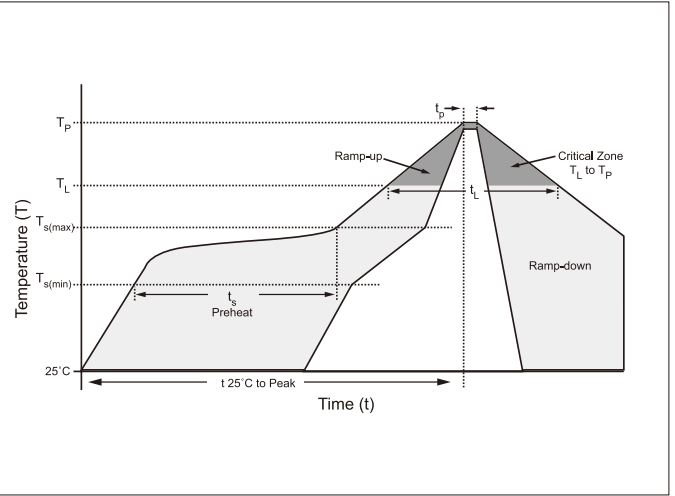


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

REFLOW PROFILE

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (min to max) (ts)	60 – 180 secs
Average ramp up rate (Liquidus Temp (TL) to peak)		3°C/second max
Ts(max) to TL - Ramp-up Rate		3°C/second max
Reflow	Temperature (TL) (Liquidus)	217°C
	Time (min to max) (tl)	60 – 150 seconds
Peak Temperature (TP)		260°C
Time within 5°C of actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max.
Do not exceed		260°C



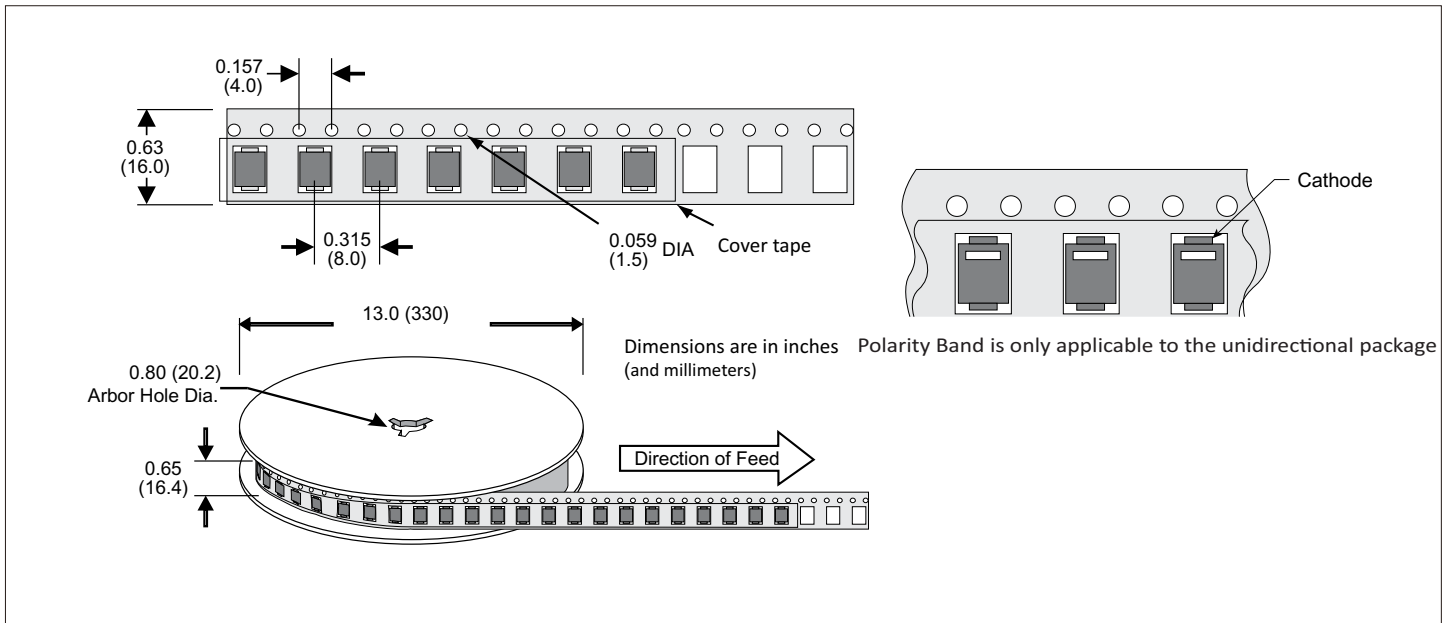
DO-214AB(SMC) PACKAGE DIMENSIONS

	Item	Millimeters		Inches	
		Min.	Max.	Min.	Max.
	L	6.60	7.11	0.260	0.280
	D	5.59	6.22	0.220	0.245
	D1	2.90	3.20	0.114	0.126
	T	7.75	8.13	0.305	0.320
	T1	0.76	1.52	0.030	0.060
	d	-	0.20	-	0.008
	s	2.06	2.62	0.079	0.103
	t	0.152	0.31	0.006	0.012

RECOMMENDED PAD LAYOUT DIMENSIONS

	Item	Millimeters		Inches	
		Min.	Max.	Min.	Max.
	A	3.300	-	0.129	-
	B	2.400	-	0.094	-
	C	-	4.200	-	0.165
	D	2.400	-	0.094	-
	E	8.13 REF		0.320 REF	

TAPE AND REEL SPECIFICATION



ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
5.0SMDJxx(C)A	DO-214AB(SMC)	3000PCS	13"