

3000W Transient Voltage Suppressors

TVS Diodes - 3000W > SMDJ Series



Description

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

Features

- For surface mounted applications in order to optimize board space
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL flammability classification 94V-O
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- Glass passivated junction
- Low inductance
- Agency recognition: 



Package: DO-214AB/ SMC

Applications

- I/O interface • AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

Electrical Characteristics

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10x1000µs waveform (Fig.1)(Note 1), (Note 2)	PPPM	3000	Watts
Peak pulse current of at 10/1000µs waveform (Note 1, Fig.3)	IPPM	See Table	Amps
Steady state power dissipation at TA=50°C (Fig.5)	PM(AV)	6.5	Watts
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	IFSM	3 00	Amps
Operating Junction and Storage Temperature Range	TJ, TSTG	-65 to 150	°C
Typical Thermal Resistance Junction to Lead	RθJL	15	°C/W
Typical Thermal Resistance Junction to Ambient	RθJA	75	°C/W

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig. 2.
2. Mounted on 8.0x8.0mm copper pad to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

Electrical Characteristics (TA=25°C)



Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current	Maximum Clamping Voltage@I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Safety Certification	Delivery Time
Uni-Polar	Bi-polar	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)	UL	days
SMDJ5.0A	SMDJ5.0CA	5.0	6.40	7.00	10	9.2	326.1	800	√	7days
SMDJ6.0A	SMDJ6.0CA	6.0	6.67	7.37	10	10.3	291.3	800	√	7days
SMDJ6.5A	SMDJ6.5CA	6.5	7.22	7.98	10	11.2	267.9	500	√	7days
SMDJ7.0A	SMDJ7.0CA	7.0	7.78	8.60	10	12.0	250.0	200	√	7days
SMDJ7.5A	SMDJ7.5CA	7.5	8.33	9.21	1	12.9	232.6	100	√	7days
SMDJ8.0A	SMDJ8.0CA	8.0	8.89	9.83	1	13.6	220.6	50	√	7days
SMDJ8.5A	SMDJ8.5CA	8.5	9.44	10.40	1	14.4	208.3	20	√	7days
SMDJ9.0A	SMDJ9.0CA	9.0	10.0	11.10	1	15.4	194.8	10	√	7days
SMDJ10A	SMDJ10CA	10.0	11.1	12.3	1	17.0	176.5	5	√	7days
SMDJ11A	SMDJ11CA	11.0	12.2	13.5	1	18.2	164.8	2	√	7days
SMDJ12A	SMDJ12CA	12.0	13.3	14.7	1	19.9	150.8	2	√	7days
SMDJ13A	SMDJ13CA	13.0	14.4	15.9	1	21.5	139.5	2	√	7days
SMDJ14A	SMDJ14CA	14.0	15.6	17.2	1	23.2	129.3	2	√	7days
SMDJ15A	SMDJ15CA	15.0	16.7	18.5	1	24.4	123.0	2	√	7days
SMDJ16A	SMDJ16CA	16.0	17.8	19.7	1	26.0	115.4	2	√	7days
SMDJ17A	SMDJ17CA	17.0	18.9	20.9	1	27.6	108.7	2	√	7days
SMDJ18A	SMDJ18CA	18.0	20.0	22.1	1	29.2	102.7	2	√	7days
SMDJ20A	SMDJ20CA	20.0	22.2	24.5	1	32.4	92.6	2	√	7days
SMDJ22A	SMDJ22CA	22.0	24.4	26.9	1	35.5	84.5	2	√	7days
SMDJ24A	SMDJ24CA	24.0	26.7	29.5	1	38.9	77.1	2	√	7days
SMDJ26A	SMDJ26CA	26.0	28.9	31.9	1	42.1	71.3	2	√	7days
SMDJ28A	SMDJ28CA	28.0	31.1	34.4	1	45.4	66.1	2	√	7days
SMDJ30A	SMDJ30CA	30.0	33.3	36.8	1	48.4	62.0	2	√	7days
SMDJ33A	SMDJ33CA	33.0	36.7	40.6	1	53.3	56.3	2	√	7days

Electrical Characteristics (TA=25°C)

continued



Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current	Maximum Clamping Voltage@I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Safety Certification	Delivery Time
Uni-Polar	Bi-polar	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)	UL	days
SMDJ36A	SMDJ36CA	36.0	40.0	44.2	1	58.1	51.6	2	√	7days
SMDJ40A	SMDJ40CA	40.0	44.4	49.1	1	64.5	46.5	2	√	7days
SMDJ43A	SMDJ43CA	43.0	47.8	52.8	1	69.4	43.2	2	√	7days
SMDJ45A	SMDJ45CA	45.0	50.0	55.3	1	72.7	41.3	2	√	7days
SMDJ48A	SMDJ48CA	48.0	53.3	58.9	1	77.4	38.8	2	√	7days
SMDJ51A	SMDJ51CA	51.0	56.7	62.7	1	82.4	36.4	2	√	7days
SMDJ54A	SMDJ54CA	54.0	60.0	66.3	1	87.1	34.4	2	√	7days
SMDJ58A	SMDJ58CA	58.0	64.4	71.2	1	93.6	32.1	2	√	7days
SMDJ60A	SMDJ60CA	60.0	66.7	73.7	1	96.8	31.0	2	√	7days
SMDJ64A	SMDJ64CA	64.0	71.1	78.6	1	103.0	29.1	2	√	7days
SMDJ70A	SMDJ70CA	70.0	77.8	86.0	1	113.0	26.5	2	√	7days
SMDJ75A	SMDJ75CA	75.0	83.3	92.1	1	121.0	24.8	2	√	7days
SMDJ78A	SMDJ78CA	78.0	86.7	95.8	1	126.0	23.8	2	√	7days
SMDJ85A	SMDJ85CA	85.0	94.4	104.0	1	137.0	21.9	2	√	7days
SMDJ90A	SMDJ90CA	90.0	100	111.0	1	146.0	20.5	2	√	7days
SMDJ100A	SMDJ100CA	100.0	111	123.0	1	162.0	18.5	2	√	7days
SMDJ110A	SMDJ110CA	110.0	122	135.0	1	177.0	16.9	2	√	7days
SMDJ120A	SMDJ120CA	120.0	133	147.0	1	193.0	15.5	2	√	7days
SMDJ130A	SMDJ130CA	130.0	144	159.0	1	209.0	14.4	2	√	7days
SMDJ150A	SMDJ150CA	150.0	167	185.0	1	243.0	12.3	2	√	7days
SMDJ160A	SMDJ160CA	160.0	178	197.0	1	259.0	11.6	2	√	7days
SMDJ170A	SMDJ170CA	170.0	189	209.0	1	275.0	10.9	2	√	7days

Notes: For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double

Electrical Characteristics (TA=25°C)



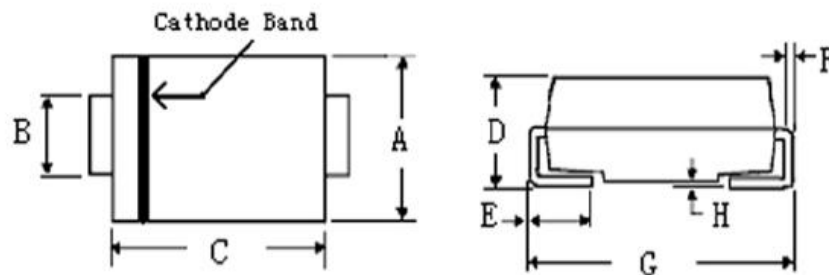
Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}(\text{Volts})@I_T$		Test Current	Maximum Clamping Voltage@ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}	Safety Certification	Delivery Time
Uni-Polar	Bi-polar	$V_{RWM}(V)$	Min	Max	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	UL	days
SMDJ180A	SMDJ180CA	180.0	201.0	222.0	1	292.0	10.3	1	-	7days
SMDJ190A	SMDJ190CA	190.0	211.0	233.0	1	308.0	9.7	1	-	7days
SMDJ200A	SMDJ200CA	200.0	224.0	247.0	1	324.0	9.3	1	-	7days
SMDJ210A	SMDJ210CA	210.0	237.0	263.0	1	340.0	8.8	1	-	7days
SMDJ220A	SMDJ220CA	220.0	246.0	272.0	1	356.0	8.4	1	-	7days
SMDJ250A	SMDJ250CA	250.0	279.0	309.0	1	405.0	7.8	1	-	7days
SMDJ300A	SMDJ300CA	300.0	335.0	371.0	1	486.0	6.5	1	-	7days
SMDJ350A	SMDJ350CA	350.0	391.0	432.0	1	567.0	5.5	1	-	7days
SMDJ400A	SMDJ400CA	400.0	447.0	494.0	1	648.0	4.8	1	-	7days
SMDJ440A	SMDJ440CA	440.0	492.0	543.0	1	713.0	4.4	1	-	7days

Packing Options

Package Type	Description	Packing Quantity	Industry Standard
 SMC	Embossed Carrier Reel Pack	3000PCS	EIA-481-1

Dimensions - DO-214AB

SMC/DO-214AB



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.220	0.236	5.6	6.0
B	0.112	0.124	2.85	3.15
C	0.258	0.27	6.55	6.85
D	0.083	0.098	2.1	2.5
E	0.031	0.055	0.8	1.4
F	0.006	0.013	0.18	0.32
G	0.309	0.321	7.85	8.15
H		0.008		0.203

Ratings and Characteristics Curve

Figure 1. Peak Pulse Power Rating Curve

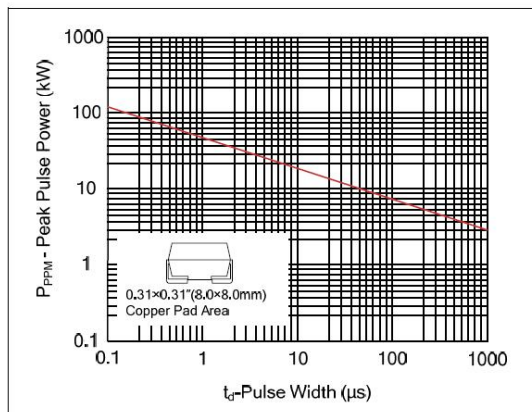


Figure 2. Pulse Derating Curve

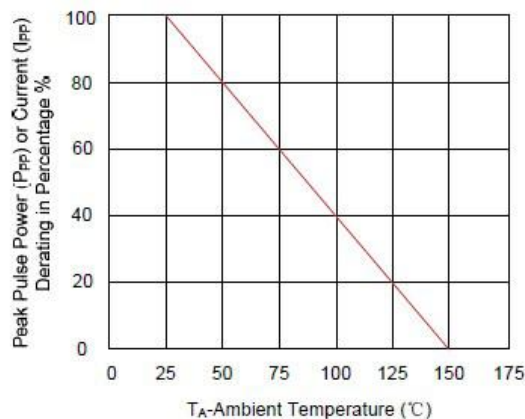


Figure 3. Pulse Waveform

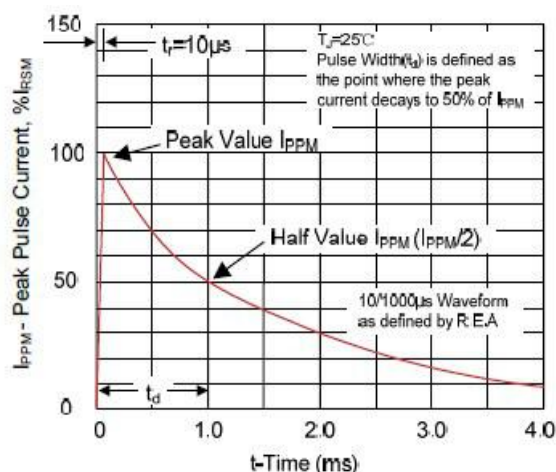


Figure 4. Typical Junction Capacitance

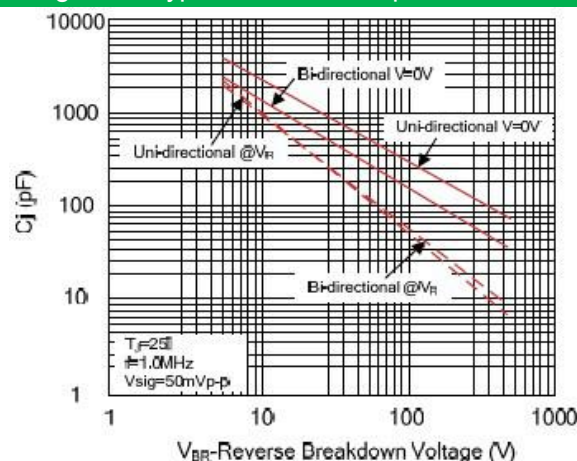


Figure 5. Steady State Power Dissipation Derating Curve

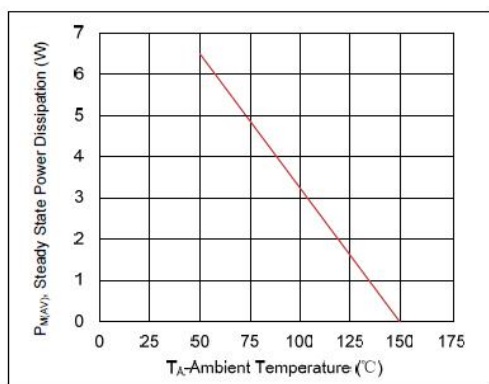


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

