

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

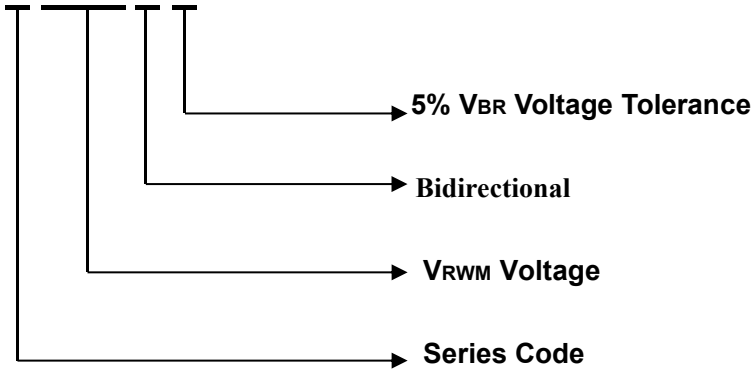


Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Safety Certification
Unidirectional	Bidirectional	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)	UL
SMDJ36A	SMDJ36CA	36.0	40.0	44.2	1	58.1	51.6	2	√
SMDJ40A	SMDJ40CA	40.0	44.4	49.1	1	64.5	46.5	2	√
SMDJ43A	SMDJ43CA	43.0	47.8	52.8	1	69.4	43.2	2	√
SMDJ45A	SMDJ45CA	45.0	50.0	55.3	1	72.7	41.3	2	√
SMDJ48A	SMDJ48CA	48.0	53.3	58.9	1	77.4	38.8	2	√
SMDJ51A	SMDJ51CA	51.0	56.7	62.7	1	82.4	36.4	2	√
SMDJ54A	SMDJ54CA	54.0	60.0	66.3	1	87.1	34.4	2	√
SMDJ58A	SMDJ58CA	58.0	64.4	71.2	1	93.6	32.1	2	√
SMDJ60A	SMDJ60CA	60.0	66.7	73.7	1	96.8	31.0	2	√
SMDJ64A	SMDJ64CA	64.0	71.1	78.6	1	103.0	29.1	2	√
SMDJ70A	SMDJ70CA	70.0	77.8	86.0	1	113.0	26.5	2	√
SMDJ75A	SMDJ75CA	75.0	83.3	92.1	1	121.0	24.8	2	√
SMDJ78A	SMDJ78CA	78.0	86.7	95.8	1	126.0	23.8	2	√
SMDJ85A	SMDJ85CA	85.0	94.4	104.0	1	137.0	21.9	2	√
SMDJ90A	SMDJ90CA	90.0	100.0	111.0	1	146.0	20.5	2	√
SMDJ100A	SMDJ100CA	100.0	111.0	123.0	1	162.0	18.5	2	√
SMDJ110A	SMDJ110CA	110.0	122.0	135.0	1	177.0	16.9	2	√
SMDJ120A	SMDJ120CA	120.0	133.0	147.0	1	193.0	15.5	2	√
SMDJ130A	SMDJ130CA	130.0	144.0	159.0	1	209.0	14.4	2	√
SMDJ150A	SMDJ150CA	150.0	167.0	185.0	1	243.0	12.3	2	√
SMDJ160A	SMDJ160CA	160.0	178.0	197.0	1	259.0	11.6	2	√
SMDJ170A	SMDJ170CA	170.0	189.0	209.0	1	275.0	10.9	2	√


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

Description of Part Number

SMDJ XXX C A

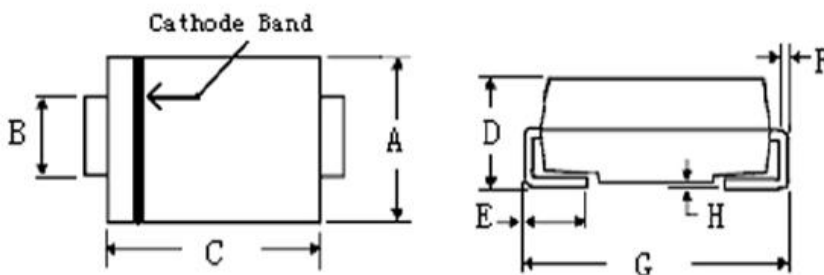


Packing Options

Package Type	Description	Packing Quantity	Industry Standard
 DO-214AB	Embossed Carrier Reel Pack	3000PCS	EIA-481-1

Dimensions - DO-214AB

SIC/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

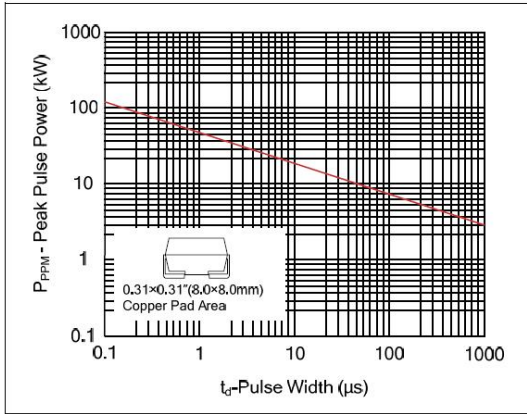


Figure 2. Pulse Derating Curve

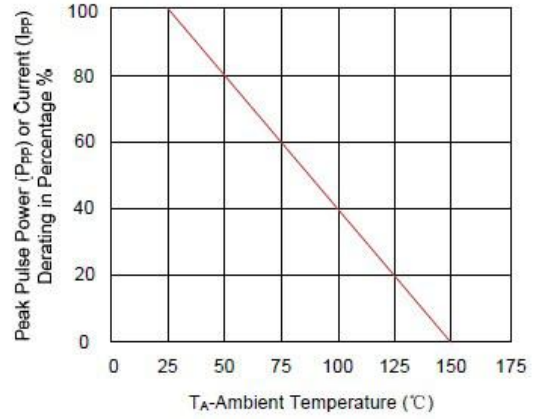


Figure 3. Pulse Waveform

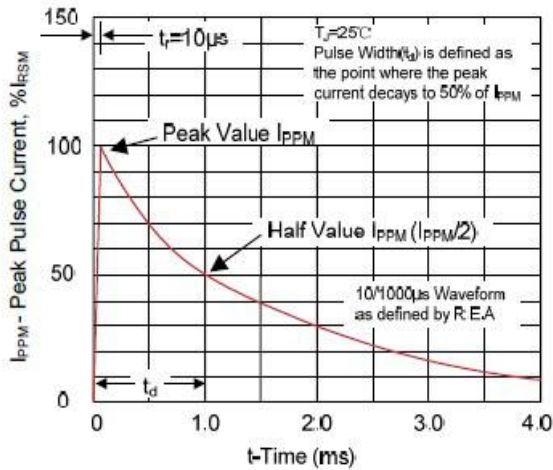


Figure 4. Typical Junction Capacitance

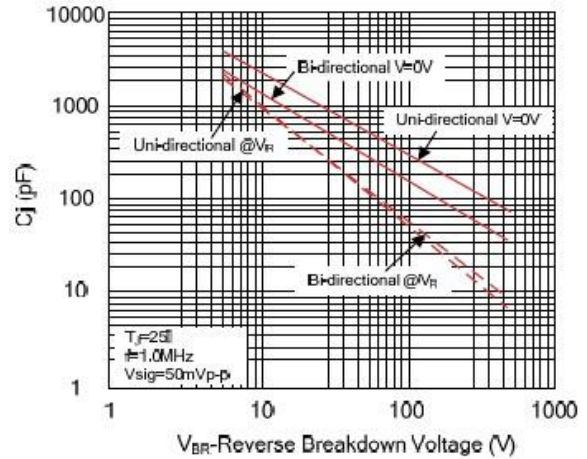


Figure 5. Steady State Power Dissipation Derating Curve

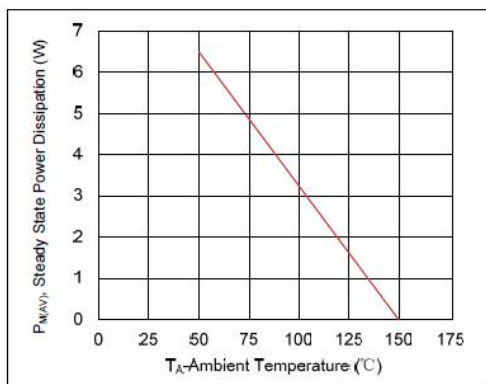
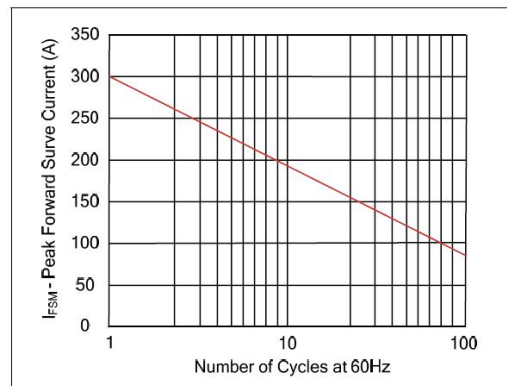


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



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