

5000W Transient Voltage Suppressors

TVS Diodes - 5000W > 5.0SMDJ Series



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

- 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	5000	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	300	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}	Certification	Delivery Time
Uni-Polar	Bi-polar	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	IR(μA)	UL	days
5.0SMDJ12A	5.0SMDJ12CA	12.0	13.3	14.7	10	19.9	252	800	√	15days
5.0SMDJ13A	5.0SMDJ13CA	13.0	14.4	15.9	10	21.5	233	500	√	15days
5.0SMDJ14A	5.0SMDJ14CA	14.0	15.6	17.2	10	23.2	216	200	√	15days
5.0SMDJ15A	5.0SMDJ15CA	15.0	16.7	18.5	1	24.4	205	100	√	15days
5.0SMDJ16A	5.0SMDJ16CA	16.0	17.8	19.7	1	26.0	193	50	√	15days
5.0SMDJ17A	5.0SMDJ17CA	17.0	18.9	20.9	1	27.6	181	20	√	15days
5.0SMDJ18A	5.0SMDJ18CA	18.0	20.0	22.1	1	29.2	172	10	√	15days
5.0SMDJ20A	5.0SMDJ20CA	20.0	22.2	24.5	1	32.4	155	5	√	15days
5.0SMDJ22A	5.0SMDJ22CA	22.0	24.4	26.9	1	35.5	141	5	√	15days
5.0SMDJ24A	5.0SMDJ24CA	24.0	26.7	29.5	1	38.9	129	2	√	15days
5.0SMDJ26A	5.0SMDJ26CA	26.0	28.9	31.9	1	42.1	119	2	√	15days
5.0SMDJ28A	5.0SMDJ28CA	28.0	31.1	34.4	1	45.4	110	2	√	15days
5.0SMDJ30A	5.0SMDJ30CA	30.0	33.3	36.8	1	48.4	103	2	√	15days
5.0SMDJ33A	5.0SMDJ33CA	33.0	36.7	40.6	1	53.3	93.9	2	√	15days
5.0SMDJ36A	5.0SMDJ36CA	36.0	40.0	44.2	1	58.1	86.1	2	√	15days
5.0SMDJ40A	5.0SMDJ40CA	40.0	44.4	49.1	1	64.5	77.6	2	√	15days
5.0SMDJ43A	5.0SMDJ43CA	43.0	47.8	52.8	1	69.4	72.1	2	√	15days
5.0SMDJ45A	5.0SMDJ45CA	45.0	50.0	55.3	1	72.7	68.8	2	√	15days
5.0SMDJ48A	5.0SMDJ48CA	48.0	53.3	58.9	1	77.4	64.7	2	√	15days
5.0SMDJ51A	5.0SMDJ51CA	51.0	56.7	62.7	1	82.4	60.7	2	√	15days
5.0SMDJ54A	5.0SMDJ54CA	54.0	60.0	66.3	1	87.1	57.5	2	√	15days
5.0SMDJ58A	5.0SMDJ58CA	58.0	64.4	71.2	1	93.6	53.5	2	√	15days
5.0SMDJ60A	5.0SMDJ60CA	60.0	66.7	73.7	1	96.8	51.7	2	√	15days

Electrical Characteristics (TA=25°C)

continued

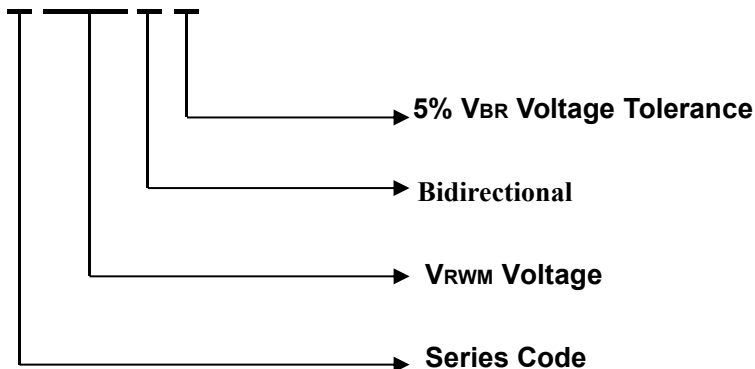


Part Number		Reverse Stand-Off Voltage	Breakdown Voltage V _{BR} (Volts)@I _T		Test Current	Maximum Clamping Voltage@I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}	Certification	Delivery Time
Uni-Polar	Bi-polar	V _{RWM} (V)	Min	Max	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (μA)	UL	days
5.0SMDJ64A	5.0SMDJ64CA	64.0	71.1	78.6	1	103.0	48.6	2	√	15days
5.0SMDJ70A	5.0SMDJ70CA	70.0	77.8	86.0	1	113.0	44.3	2	√	15days
5.0SMDJ75A	5.0SMDJ75CA	75.0	83.3	92.1	1	121.0	41.4	2	√	15days
5.0SMDJ78A	5.0SMDJ78CA	78.0	86.7	95.8	1	126.0	39.7	2	√	15days
5.0SMDJ85A	5.0SMDJ85CA	85.0	94.4	104	1	137.0	36.5	2	√	15days
5.0SMDJ90A	5.0SMDJ90CA	90.0	100	111	1	146.0	34.3	2	√	15days
5.0SMDJ100A	5.0SMDJ100CA	100.0	111	123	1	162.0	30.9	2	√	15days
5.0SMDJ110A	5.0SMDJ110CA	110.0	122	135	1	177.0	28.3	2	√	15days
5.0SMDJ120A	5.0SMDJ120CA	120.0	133	147	1	193.0	26.0	2	√	15days
5.0SMDJ130A	5.0SMDJ130CA	130.0	144	159	1	209.0	24.0	2	√	15days
5.0SMDJ150A	5.0SMDJ150CA	150.0	167	185	1	243.0	20.6	2	√	15days
5.0SMDJ160A	5.0SMDJ160CA	160.0	178	197	1	259.0	19.3	2	√	15days
5.0SMDJ170A	5.0SMDJ170CA	170.0	189	209	1	275.0	18.2	2	√	15days

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

Description of Part Number

5.0SMDJ XXX C A

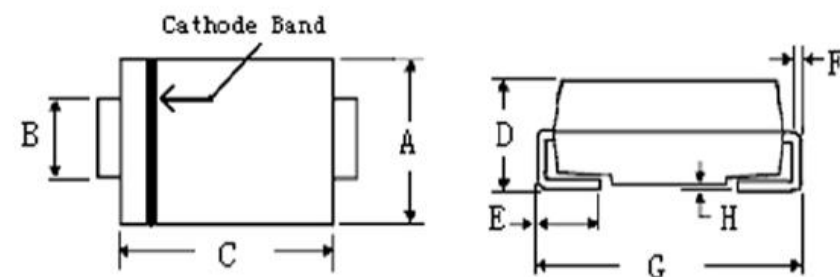


Packing Options

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

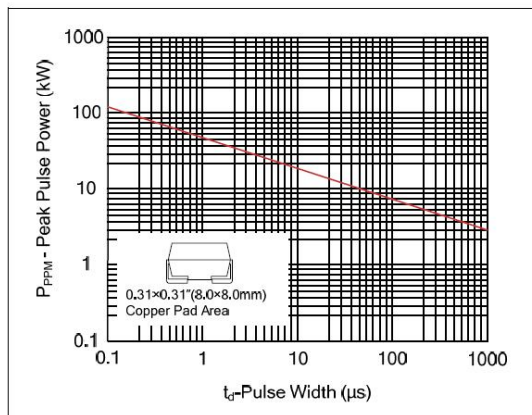


Figure 2. Pulse Derating Curve

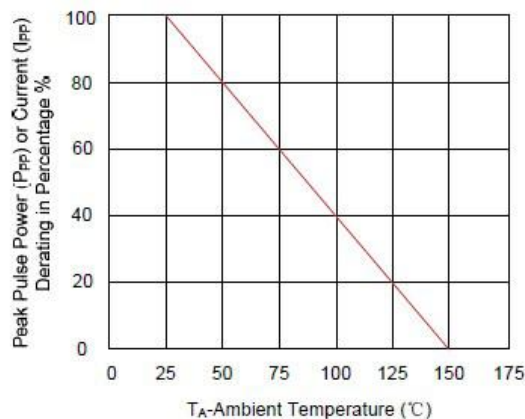


Figure 3. Pulse Waveform

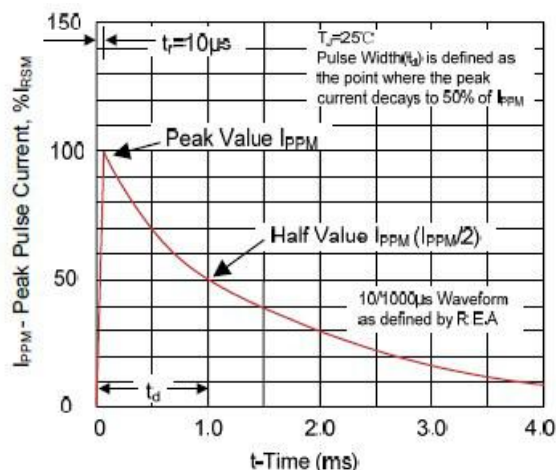


Figure 4. Typical Junction Capacitance

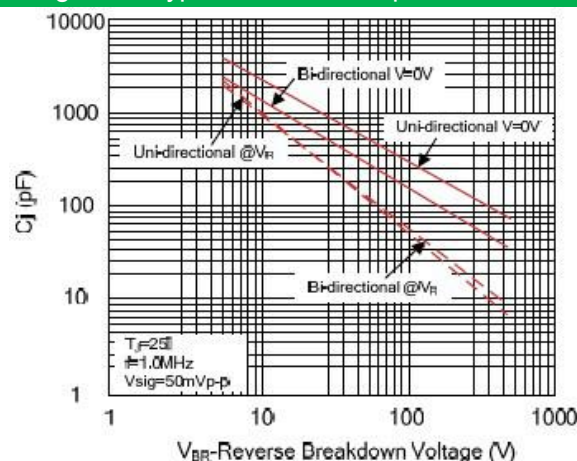


Figure 5. Steady State Power Dissipation Derating Curve

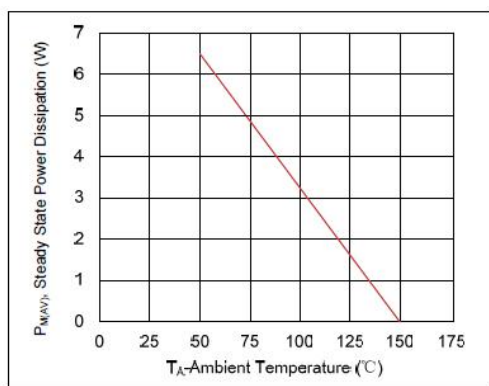


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

