

1500W Transient Voltage Suppressors

TVS Diodes - 1500W > 1.5SMBJ Series



Description

The 1.5SMBJ 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



Package: DO-214AA / SMB

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	1500	W
Power Dissipation on infinite heat sink at TA=50°C	PM(AV)	5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	IFSM	100	A
Operating Junction and Storage Temperature Range	TJ, TSTG	-55 to 150	°C
Typical Thermal Resistance Junction to Lead	RθJL	20	°C/W
Typical Thermal Resistance Junction to Ambient	RθJA	100	°C/W

- Notes:**
1. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig.2.
 2. Mounted on 5.0mm×5.0mm (0.03mm thick) 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 (TA=25°C)

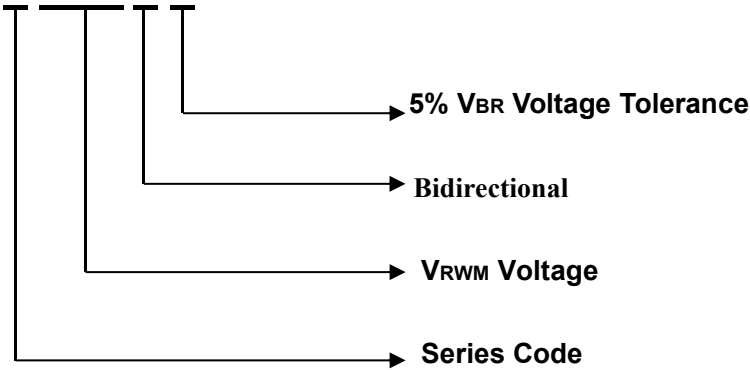


Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}(\text{Volts})@I_T$		Test Current	Maximum Clamping Voltage@I _{PP}	Peak Pulse Current	Reverse Leakage@ V_{RWM}	Delivery Time
Uni-Polar	Bi-polar	$V_{RWM}(V)$	Min	Max	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	days
1.5SMBJ6.8A	1.5SMBJ6.8CA	5.80	6.45	7.14	10	10.5	142.86	1000	12days
1.5SMBJ7.5A	1.5SMBJ7.5CA	6.40	7.13	7.88	10	11.3	132.74	500	12days
1.5SMBJ8.2A	1.5SMBJ8.2CA	7.02	7.79	8.61	10	12.1	123.97	200	12days
1.5SMBJ9.1A	1.5SMBJ9.1CA	7.78	8.65	9.55	1	13.4	111.94	50	12days
1.5SMBJ10A	1.5SMBJ10CA	8.55	9.50	10.5	1	14.5	103.45	10	12days
1.5SMBJ11A	1.5SMBJ11CA	9.40	10.5	11.6	1	15.6	96.15	5	12days
1.5SMBJ12A	1.5SMBJ12CA	10.2	11.4	12.6	1	16.7	89.82	5	12days
1.5SMBJ13A	1.5SMBJ13CA	11.1	12.4	13.7	1	18.2	82.42	1	12days
1.5SMBJ15A	1.5SMBJ15CA	12.8	14.3	15.8	1	21.2	70.75	1	12days
1.5SMBJ16A	1.5SMBJ16CA	13.6	15.2	16.8	1	22.5	66.67	1	12days
1.5SMBJ18A	1.5SMBJ18CA	15.3	17.1	18.9	1	25.2	59.52	1	12days
1.5SMBJ20A	1.5SMBJ20CA	17.1	19.0	21.0	1	27.7	54.15	1	12days
1.5SMBJ22A	1.5SMBJ22CA	18.8	20.9	23.1	1	30.6	49.02	1	12days
1.5SMBJ24A	1.5SMBJ24CA	20.5	22.8	25.2	1	33.2	45.18	1	12days
1.5SMBJ27A	1.5SMBJ27CA	23.1	25.7	28.4	1	37.5	40.00	1	12days
1.5SMBJ30A	1.5SMBJ30CA	25.6	28.5	31.5	1	41.4	36.23	1	12days
1.5SMBJ33A	1.5SMBJ33CA	28.2	31.4	34.7	1	45.7	32.82	1	12days
1.5SMBJ36A	1.5SMBJ36CA	30.8	34.2	37.8	1	49.9	30.06	1	12days
1.5SMBJ39A	1.5SMBJ39CA	33.3	37.1	41.0	1	53.9	27.83	1	12days
1.5SMBJ43A	1.5SMBJ43CA	36.8	40.9	45.2	1	59.3	25.30	1	12days
1.5SMBJ47A	1.5SMBJ47CA	40.2	44.7	49.4	1	64.8	23.15	1	12days
1.5SMBJ51A	1.5SMBJ51CA	43.6	48.5	53.6	1	70.1	21.40	1	12days
1.5SMBJ56A	1.5SMBJ56CA	47.8	53.2	58.8	1	77.0	19.48	1	12days
1.5SMBJ62A	1.5SMBJ62CA	53.0	58.9	65.1	1	85.0	17.65	1	12days


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

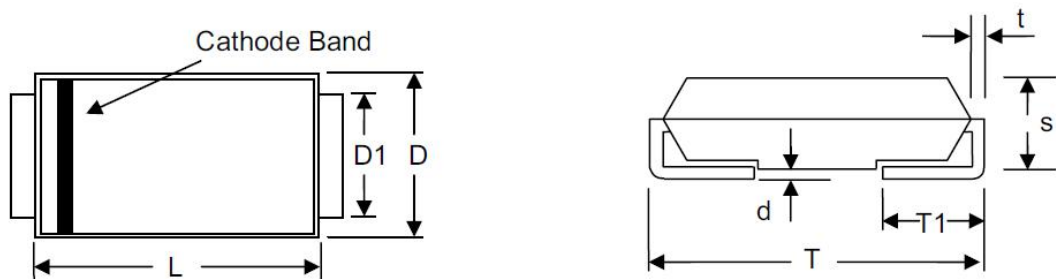
Description of Part Number

1.5SMBJ XXX C A



Packing Options

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



SMB/DO-214AA

Item	Millimeters		Inches	
	Min.	Max.	Min.	Max.
L	4.06	4.57	0.160	0.180
D	3.30	3.94	0.130	0.155
D1	1.95	2.20	0.077	0.086
T	5.21	5.59	0.205	0.220
T1	0.76	1.52	0.030	0.060
d	-	0.203	-	0.008
s	2.13	2.47	0.084	0.097
t	0.152	0.305	0.006	0.012

Ratings and Characteristics Curve

Figure 1. Peak Pulse Power Rating Curve

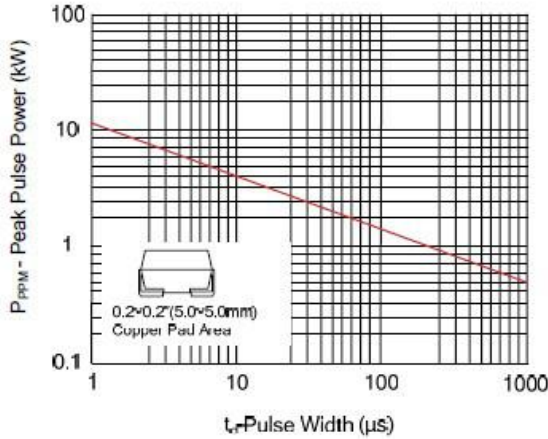


Figure 2. Pulse Derating Curve

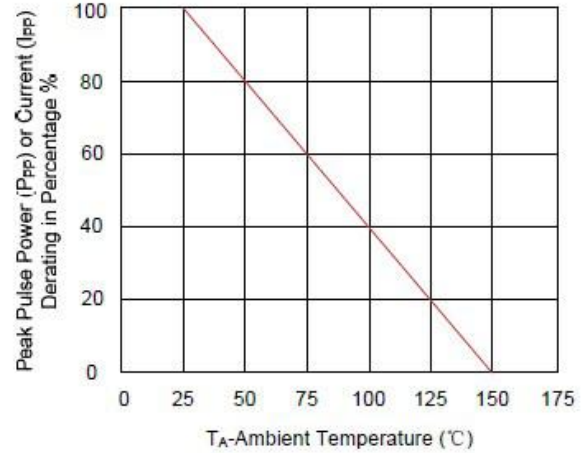


Figure 3. Pulse Waveform

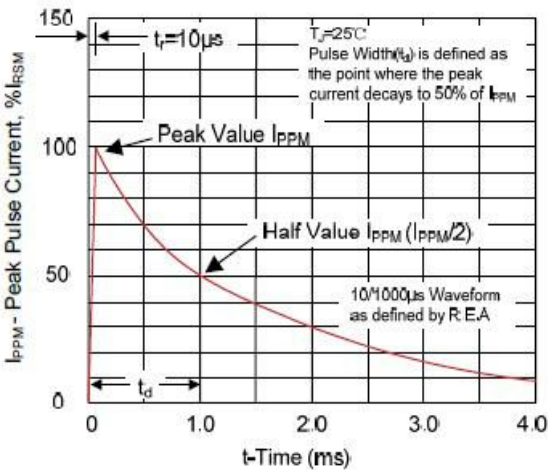


Figure 4. Typical Junction Capacitance

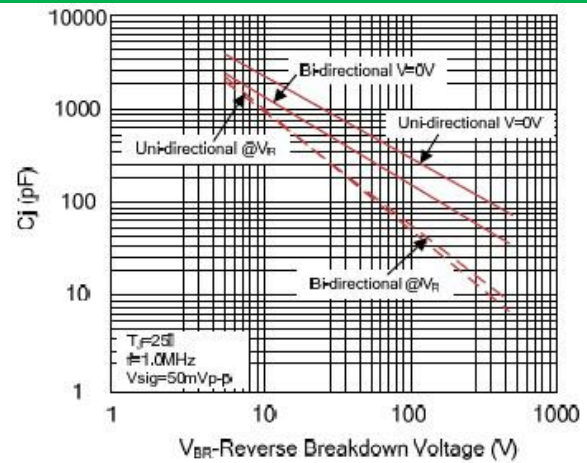


Figure 5. Steady State Power Dissipation Derating Curve

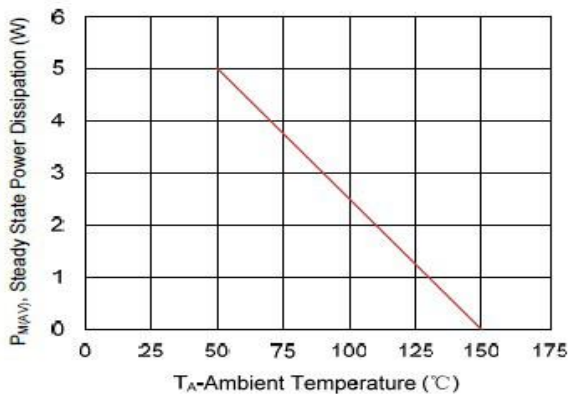


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

