

600W Transient Voltage Suppressors


TVS Diodes - 600W > SMBJ Series



Description

The SMBJ 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-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	600	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
Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 4)	VF	3.5V/5	V
Operating Junction and Storage Temperature Range	TJ, TSTG	-65 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 5.0x5.0mm copper pad to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only.
4. VF < 3.5V for VBR ≤ 200V and VF < 6.5V for VBR ≥ 201V.

Electrical Characteristics (TA=25°C)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage		Test Current	Maximum Clamping Voltage@IPP	Peak Pulse Current	Reverse Leakage @VRWM	Safety Certification	Delivery Time
Uni-Polar	Bi-polar	VRWM(V)	Min	Max	IT(mA)	VC(V)	IPP(A)	IR(μA)	UL	days
SMBJ3.3A	----	3.3	5.2	6.00	10	8.0	75.0	600	-	7days
SMBJ5.0A	SMBJ5.0CA	5.0	6.40	7.00	10	9.2	65.3	800	√	7days
SMBJ6.0A	SMBJ6.0CA	6.0	6.67	7.37	10	10.3	58.3	800	√	7days
SMBJ6.5A	SMBJ6.5CA	6.5	7.22	7.98	10	11.2	53.6	500	√	7days
SMBJ7.0A	SMBJ7.0CA	7.0	7.78	8.60	10	12.0	50.0	200	√	7days
SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.21	1	12.9	46.6	100	√	7days
SMBJ8.0A	SMBJ8.0CA	8.0	8.89	9.83	1	13.6	44.2	50	√	7days
SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.40	1	14.4	41.7	20	√	7days
SMBJ9.0A	SMBJ9.0CA	9.0	10.0	11.10	1	15.4	39.0	10	√	7days
SMBJ10A	SMBJ10CA	10	11.1	12.3	1	17.0	35.3	5	√	7days
SMBJ11A	SMBJ11CA	11	12.2	13.5	1	18.2	33.0	1	√	7days
SMBJ12A	SMBJ12CA	12	13.3	14.7	1	19.9	30.2	1	√	7days
SMBJ13A	SMBJ13CA	13	14.4	15.9	1	21.5	28.0	1	√	7days
SMBJ14A	SMBJ14CA	14	15.6	17.2	1	23.2	25.9	1	√	7days
SMBJ15A	SMBJ15CA	15	16.7	18.5	1	24.4	24.6	1	√	7days
SMBJ16A	SMBJ16CA	16	17.8	19.7	1	26.0	23.1	1	√	7days
SMBJ17A	SMBJ17CA	17	18.9	20.9	1	27.6	21.8	1	√	7days
SMBJ18A	SMBJ18CA	18	20.0	22.1	1	29.2	20.6	1	√	7days
SMBJ20A	SMBJ20CA	20	22.2	24.5	1	32.4	18.6	1	√	7days
SMBJ22A	SMBJ22CA	22	24.4	26.9	1	35.5	16.9	1	√	7days
SMBJ24A	SMBJ24CA	24	26.7	29.5	1	38.9	15.5	1	√	7days
SMBJ26A	SMBJ26CA	26	28.9	31.9	1	42.1	14.3	1	√	7days
SMBJ28A	SMBJ28CA	28	31.1	34.4	1	45.4	13.3	1	√	7days
SMBJ30A	SMBJ30CA	30	33.3	36.8	1	48.4	12.4	1	√	7days
SMBJ33A	SMBJ33CA	33	36.7	40.6	1	53.3	11.3	1	√	7days

Specifications are subject to change without notice

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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
SMBJ36A	SMBJ36CA	36.0	40.0	44.2	1	58.1	10.4	1	√	7days
SMBJ40A	SMBJ40CA	40.0	44.4	49.1	1	64.5	9.3	1	√	7days
SMBJ43A	SMBJ43CA	43.0	47.8	52.8	1	69.4	8.7	1	√	7days
SMBJ45A	SMBJ45CA	45.0	50.0	55.3	1	72.7	8.3	1	√	7days
SMBJ48A	SMBJ48CA	48.0	53.3	58.9	1	77.4	7.8	1	√	7days
SMBJ51A	SMBJ51CA	51.0	56.7	62.7	1	82.4	7.3	1	√	7days
SMBJ54A	SMBJ54CA	54.0	60.0	66.3	1	87.1	6.9	1	√	7days
SMBJ58A	SMBJ58CA	58.0	64.4	71.2	1	93.6	6.5	1	√	7days
SMBJ60A	SMBJ60CA	60.0	66.7	73.7	1	96.8	6.2	1	√	7days
SMBJ64A	SMBJ64CA	64.0	71.1	78.6	1	103.0	5.9	1	√	7days
SMBJ70A	SMBJ70CA	70.0	77.8	86.0	1	113.0	5.3	1	√	7days
SMBJ75A	SMBJ75CA	75.0	83.3	92.1	1	121.0	5.0	1	√	7days
SMBJ78A	SMBJ78CA	78.0	86.7	95.8	1	126.0	4.8	1	√	7days
SMBJ85A	SMBJ85CA	85.0	94.4	104.0	1	137.0	4.4	1	√	7days
SMBJ90A	SMBJ90CA	90.0	100.0	111.0	1	146.0	4.1	1	√	7days
SMBJ100A	SMBJ100CA	100.0	111.0	123.0	1	162.0	3.7	1	√	7days
SMBJ110A	SMBJ110CA	110.0	122.0	135.0	1	177.0	3.4	1	√	7days
SMBJ120A	SMBJ120CA	120.0	133.0	147.0	1	193.0	3.1	1	√	7days
SMBJ130A	SMBJ130CA	130.0	144.0	159.0	1	209.0	2.9	1	√	7days
SMBJ150A	SMBJ150CA	150.0	167.0	185.0	1	243.0	2.5	1	√	7days
SMBJ160A	SMBJ160CA	160.0	178.0	197.0	1	259.0	2.3	1	√	7days
SMBJ170A	SMBJ170CA	170.0	189.0	209.0	1	275.0	2.2	1	√	7days
SMBJ180A	SMBJ180CA	180.0	201.0	222.0	1	292.0	2.1	1	√	7days
SMBJ190A	SMBJ190CA	190.0	209.0	243.2	1	308.0	2.0	1	√	7days

Electrical Characteristics (TA=25°C)

continued

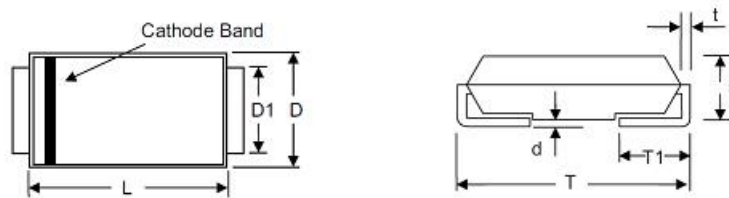
Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}(Volts)@I_T$		Test Current	Maximum Clamping Voltage@ I_{PP}	Peak Pulse Current	Reverse Leakage @ V_{RWM}	Certification	Delivery Time
Uni-Polar	Bi-polar	$V_{RWM}(V)$	Min	Max	$I_T(mA)$	$V_C(V)$	$I_{PP}(A)$	$I_R(\mu A)$	UL	days
SMBJ200A	SMBJ200CA	200.0	220.0	247.0	1	324.0	1.9	1	√	7days
SMBJ210A	SMBJ210CA	210.0	231.0	268.8	1	340.0	1.8	1	√	7days
SMBJ220A	SMBJ220CA	220.0	246.0	281.6	1	356.0	1.7	1	√	7days
SMBJ250A	SMBJ250CA	250.0	279.0	309.0	1	405.0	1.5	1	√	7days
SMBJ300A	SMBJ300CA	300.0	335.0	371.0	1	486.0	1.3	1	√	7days
SMBJ350A	SMBJ350CA	350.0	391.0	432.0	1	567.0	1.1	1	√	7days
SMBJ400A	SMBJ400CA	400.0	447.0	494.0	1	648.0	0.9	1	√	7days
SMBJ440A	SMBJ440CA	440.0	492.0	543.0	1	713.0	0.9	1	√	7days

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

Packing Options

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

Dimensions - DO-214AA



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