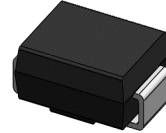


## 600W, 5 - 170V Transient Voltage Suppressors

### Features

- Very fast response time
- Glass passivated junction
- Moisture sensitivity: level 1, per J-STD-020
- Available in unidirectional and bidirectional
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21 definition
- 600 W peak pulse power capability with a 10/1000  $\mu$ s waveform



SMB (DO-214AA)

### Applications

- SMPS
- Adapters
- Monitor

### Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Peak power dissipation with a 10/1000 $\mu$ s waveform	P <sub>PPM</sub>	600	W
Peak pulse current with a 10/1000 $\mu$ s waveform	I <sub>PPM</sub>	See Next Table	A
Power dissipation, on infinite heat sink at T <sub>L</sub> =75°C	P <sub>D</sub>	3.75	W
Peak forward surge current, 8.3ms single half-sine wave	I <sub>FSM</sub>	100	A
Typical Thermal Resistance , Junction to Ambient	R <sub><math>\theta</math>JA</sub>	85	°C/W
Typical Thermal Resistance , Junction to Case	R <sub><math>\theta</math>JC</sub>	15	°C/W
Typical Thermal Resistance , Junction to Lead	R <sub><math>\theta</math>JL</sub>	20	°C/W
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

## Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking		Breakdown Voltage VBR (Volts)		Test Current IT (mA)	Stand off Voltage VWM (Volts)	Maximum reverse leakage at VWM ID (µA)	Maximum Peak Pulse Current IPPM (A)	Maximum Clamping Voltage at IPPM VC(Volts)
		UNI	BI	Min	Max					
SMBJ6.0AS	SMBJ6.0CAS	KGS	AGS	6.67	7.37	10	6.0	800	58.3	10.3
SMBJ6.5AS	SMBJ6.5CAS	KKS	AKS	7.22	7.98	10	6.5	500	53.6	11.2
SMBJ7.0AS	SMBJ7.0CAS	KMS	AMS	7.78	8.60	10	7.0	200	50.0	12.0
SMBJ7.5AS	SMBJ7.5CAS	KPS	APS	8.33	9.21	1.0	7.5	100	46.5	12.9
SMBJ8.0AS	SMBJ8.0CAS	KRS	ARS	8.89	9.83	1.0	8.0	50	44.1	13.6
SMBJ8.5AS	SMBJ8.5CAS	KTS	ATS	9.44	10.4	1.0	8.5	20	41.7	14.4
SMBJ9.0AS	SMBJ9.0CAS	KVS	AVS	10.0	11.1	1.0	9.0	10.0	39.0	15.4
SMBJ10AS	SMBJ10CAS	KXS	AXS	11.1	12.3	1.0	10.0	5.0	35.3	17.0
SMBJ11AS	SMBJ11CAS	KZS	AZS	12.2	13.5	1.0	11.0	5.0	33.0	18.2
SMBJ12AS	SMBJ12CAS	LES	BES	13.3	14.7	1.0	12.0	5.0	30.2	19.9
SMBJ13AS	SMBJ13CAS	LGS	BGS	14.4	15.9	1.0	13	1.0	27.9	21.5
SMBJ14AS	SMBJ14CAS	LKS	BKS	15.6	17.2	1.0	14	1.0	25.9	23.2
SMBJ15AS	SMBJ15CAS	LMS	BMS	16.7	18.5	1.0	15	1.0	24.6	24.4
SMBJ16AS	SMBJ16CAS	LPS	BPS	17.8	19.7	1.0	16	1.0	23.1	26.0
SMBJ17AS	SMBJ17CAS	LRS	BRS	18.9	20.9	1.0	17	1.0	21.7	27.6
SMBJ18AS	SMBJ18CAS	LTS	BTS	20.0	22.1	1.0	18	1.0	20.5	29.2
SMBJ20AS	SMBJ20CAS	LVS	BVS	22.2	24.5	1.0	20	1.0	18.5	32.4
SMBJ22AS	SMBJ22CAS	LXS	BXS	24.4	26.9	1.0	22	1.0	16.9	35.5
SMBJ24AS	SMBJ24CAS	LZS	BZS	26.7	29.5	1.0	24	1.0	15.4	38.9
SMBJ26AS	SMBJ26CAS	MES	CES	28.9	31.9	1.0	26	1.0	14.3	42.1
SMBJ28AS	SMBJ28CAS	MGS	CGS	31.1	34.4	1.0	28	1.0	13.2	45.4
SMBJ30AS	SMBJ30CAS	MKS	CKS	33.3	36.8	1.0	30	1.0	12.4	48.4
SMBJ33AS	SMBJ33CAS	MMS	CMS	36.7	40.6	1.0	33	1.0	11.3	53.3
SMBJ36AS	SMBJ36CAS	MPS	CPS	40.0	44.4	1.0	36	1.0	10.3	58.1
SMBJ40AS	SMBJ40CAS	MRS	CRS	44.4	49.1	1.0	40	1.0	9.3	64.5
SMBJ43AS	SMBJ43CAS	MTS	CTS	47.8	52.8	1.0	43	1.0	8.6	69.4
SMBJ45AS	SMBJ45CAS	MVS	CVS	50.0	55.3	1.0	45	1.0	8.3	72.7
SMBJ48AS	SMBJ48CAS	MXS	CXS	53.3	58.9	1.0	48	1.0	7.8	77.4
SMBJ51AS	SMBJ51CAS	MZS	CZS	56.7	62.7	1.0	51	1.0	7.3	82.4
SMBJ54AS	SMBJ54CAS	NES	DES	60.0	66.3	1.0	54	1.0	6.9	87.1
SMBJ58AS	SMBJ58CAS	NGS	DGS	64.4	71.2	1.0	58	1.0	6.4	93.6
SMBJ60AS	SMBJ60CAS	NKS	DKS	66.7	73.7	1.0	60	1.0	6.2	96.8
SMBJ64AS	SMBJ64CAS	NMS	DMS	71.1	78.6	1.0	64	1.0	5.8	103

## Electrical Characteristics (TA = 25 °C unless otherwise noted)

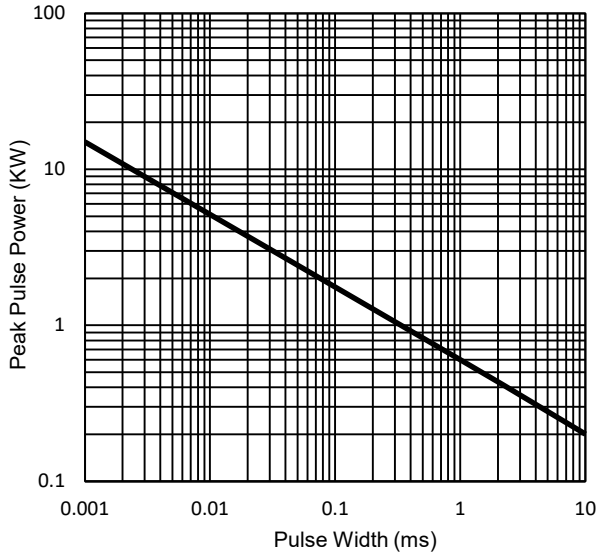
Part Number (Uni)	Part Number (Bi)	Marking		Breakdown Voltage VBR (Volts)		Test Current I <sub>T</sub> (mA)	Stand off Voltage V <sub>WM</sub> (Volts)	Maximum reverse leakage at V <sub>WM</sub> I <sub>D</sub> (μA)	Maximum Peak Pulse Current I <sub>PPM</sub> (A)	Maximum Clamping Voltage at I <sub>PPM</sub> V <sub>C</sub> (Volts)
		UNI	BI	Min	Max					
SMBJ75AS	SMBJ75CAS	NRS	DRS	83.3	92.1	1.0	75	1.0	5.0	121
SMBJ78AS	SMBJ78CAS	NTS	DTS	86.7	95.8	1.0	78	1.0	4.8	126
SMBJ85AS	SMBJ85CAS	NVS	DVS	94.4	104	1.0	85	1.0	4.4	137
SMBJ90AS	SMBJ90CAS	NXS	DXS	100	111	1.0	90	1.0	4.1	146
SMBJ100AS	SMBJ100CAS	NZS	DZS	111	123	1.0	100	1.0	3.7	162
SMBJ110AS	SMBJ110CAS	PES	FES	122	135	1.0	110	1.0	3.4	177
SMBJ120AS	SMBJ120CAS	PGS	FGS	133	147	1.0	120	1.0	3.1	193
SMBJ130AS	SMBJ130CAS	PKS	FKS	144	159	1.0	130	1.0	2.9	209
SMBJ150AS	SMBJ150CAS	PMS	FMS	167	185	1.0	150	1.0	2.5	243
SMBJ160AS	SMBJ160CAS	PPS	FPS	178	197	1.0	160	1.0	2.3	259
SMBJ170AS	SMBJ170CAS	PRS	FRS	189	209	1.0	170	1.0	2.2	275

Note:

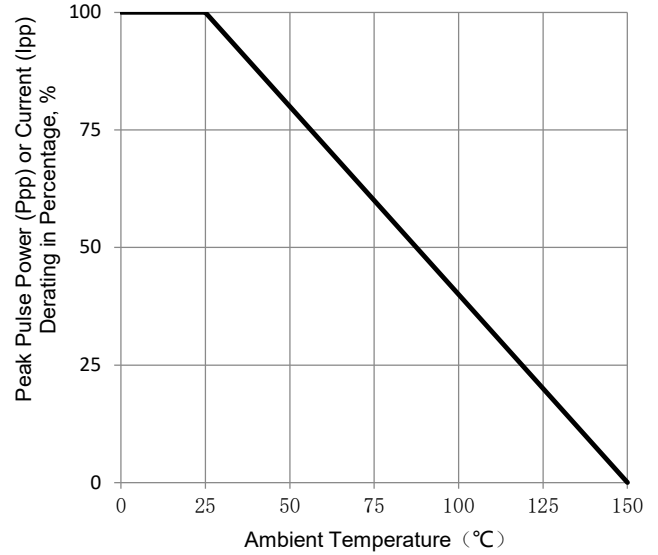
1. Mounted on copper pad area of 0.2x0.2" (5.0 x 5.0mm) to each terminal.

## Ratings and Characteristics Curves

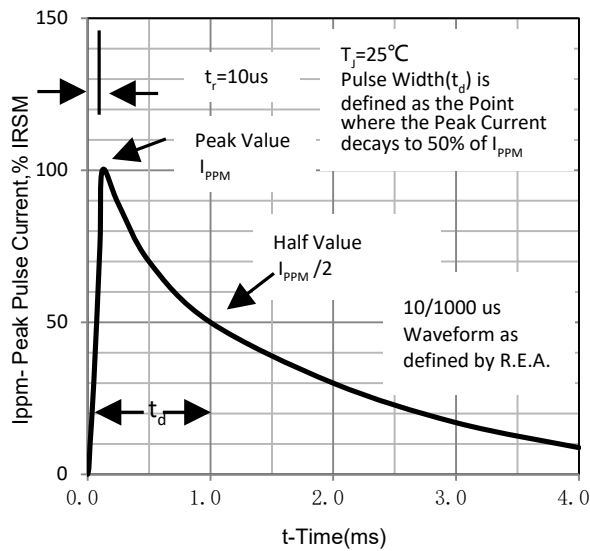
( $T_A = 25^\circ\text{C}$  unless otherwise noted)



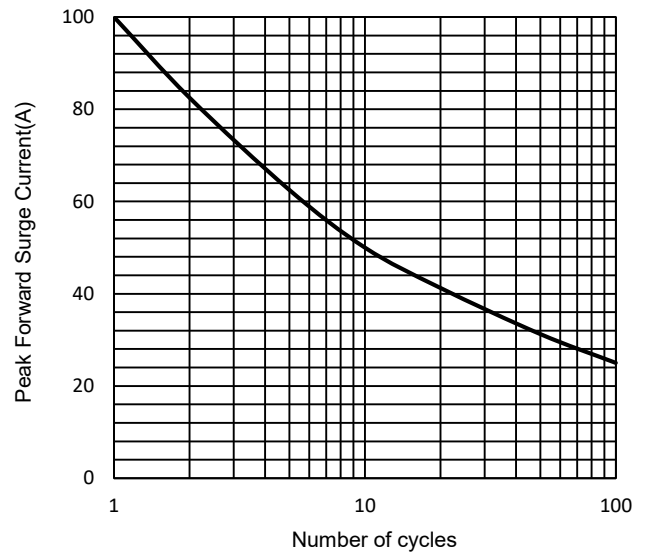
**Fig.1 - Peak Pulse Power Derating Curve**



**Fig.2 - Maximum Non-Repetitive Surge Current**



**Fig.3 - Typical Forward Voltage Characteristics**

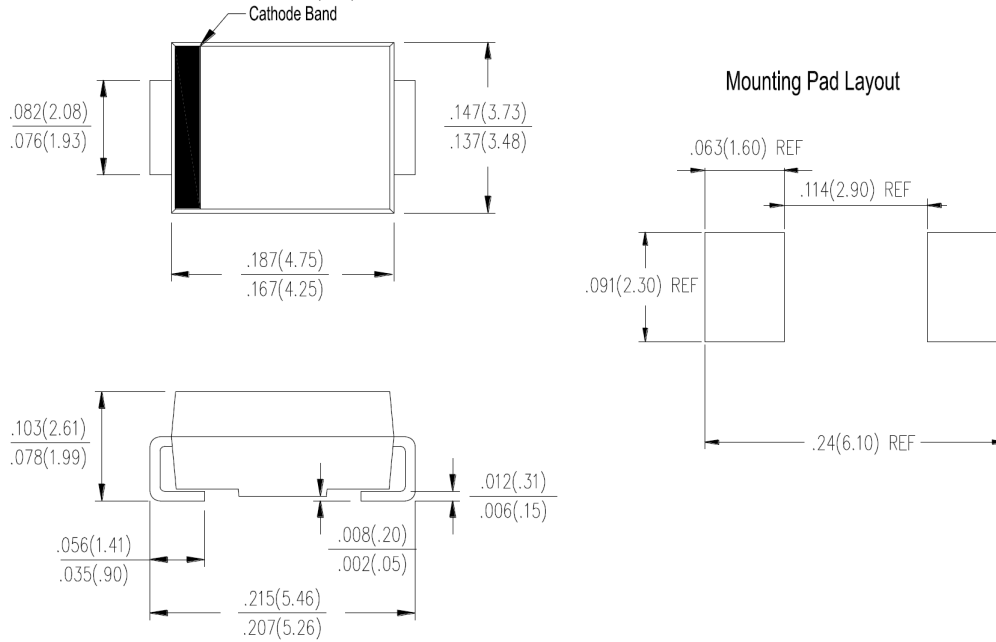


**Fig.4 - Typical Reverse Current Characteristics**

## Package Outline Dimensions

in inches (millimeters)

### SMB (DO-214AA)



## Revision History

Document Version	Date of release	Description of changes
Rev.A	2023.06.15	Released Datasheet
Rev.B	2023.10.20	Modify document format

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