

SMBJ Series

Surface Mount Voltage Suppressors

multicomp PRO

**RoHS
Compliant**



Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET.

Features

- For surface mounted applications in order to optimise board space
- Low profile package
- Glass passivated chip
- Excellent clamping capability
- Lead free
- Low inductance
- Typical IR less than 1 μ A above 10V

Specifications

Fast Response Time	: Typically less than 1ns for Uni-direction, less than 5ns fo Bi-direction, from 0 Volts to BV min
Reverse Voltage	: 5V to 30V
Power Dissipation	: 600 Watts

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Characteristics	Symbol	Value	Unit
Peak Power Dissipation at TA = 25°C TP = 1ms (Note 1)	PPK	600	W
Peak Forward Surge Current, 8.3mS Single Half Sine-Wave, Superimposed on Rated Load (JEDEC Method)	IFSM	100	W
Steady State Power Dissipation at TL = 75°C	PM(AV)	5	A
Maximum Instantaneous Forward Voltage at 50A for Unidirectional Devices Only (Note 3)	VF	3.5/5	V
Typical Junction Capacitance (Note 2)	CJ	2000	pF
Typical Thermal Resistance Junction to Lead	R θ JL	20	°C/W
Typical Thermal Resistance Junction to Ambient	R θ JA	100	°C/W
Operating Junction Temperature Range	TJ	-55 to + 150	°C
Storage Temperature Range	TSTG		°C

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above TA=25°C
2. Measured at 1 MHz and applied reverse voltage of 4V DC.
3. VF<3.5V for VBR \leq 200V and VF<6.5V for VBR \geq 201V
4. 8.3ms single half sine-wave duty cycle= 4 pulses per minutes maximum (uni-directional units only)

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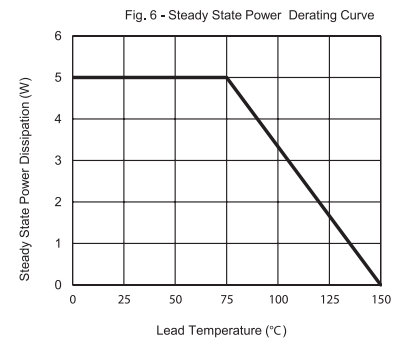
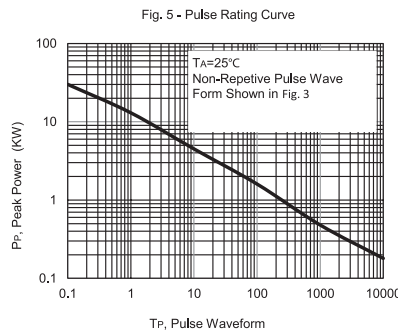
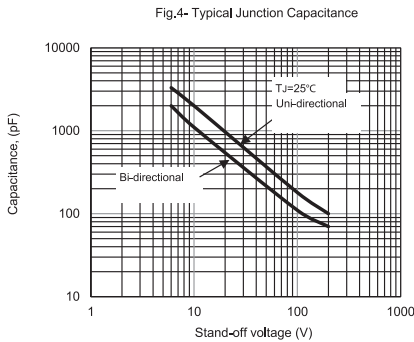
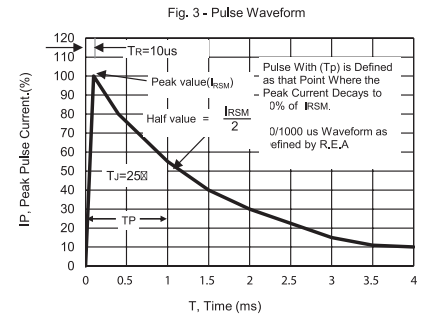
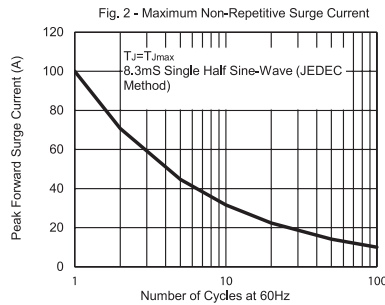
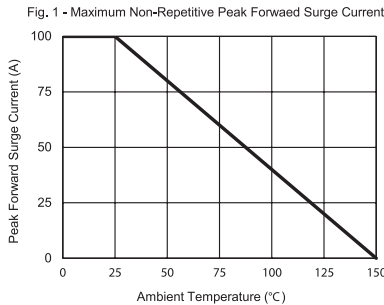
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Rating and Characteristic Curves



UNI-Directional

Reverse Stand off Voltage	Breakdown Voltage at I_T^2 V(BR) (V)		Test Current @ I_T (mA)	Max. Clamping Voltage at IPPM Vc (V)	Max. Peak Pulse Surge Current ⁽³⁾ IPP (A)	Max. Reverse Leakage at VR IR (μA)	Part Number	
	Min. (V)	Max. (V)					Uni	Bi
VR (V)	Min. (V)	Max. (V)	@ I_T (mA)	Vc (V)	IPP (A)	IR (μA)	Uni	Bi
5	6.4	7	10	9.2	65.3	800	SMBJ5.0A	SMBJ5.0CA
7.5	8.33	9.21	1	12.9	46.6	100	SMBJ7.5A	SMBJ7.5CA
12	13.3	14.7	1	19.9	30.2	1	SMBJ12A	SMBJ12CA
15	16.7	18.5	1	24.4	24.6	1	SMBJ15A	SMBJ15CA
24	26.7	29.5	1	38.9	15.5	1	SMBJ24A	SMBJ24CA
30	33.3	36.8	1	48.4	12.4	1	SMBJ30A	SMBJ30CA

Note:

For bidirectional type having VRWM of 10 volts and less, the IR limit is double.

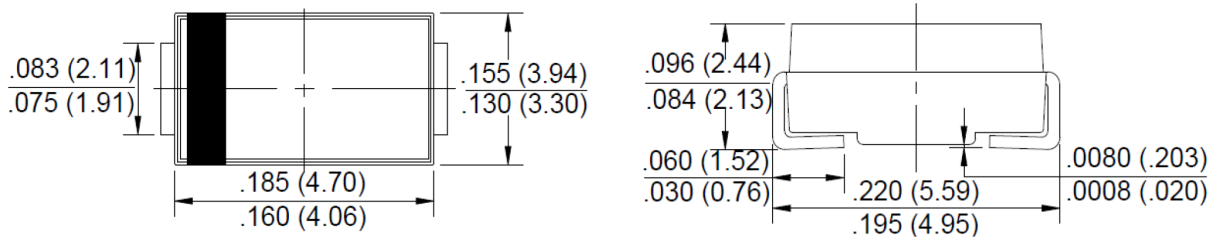
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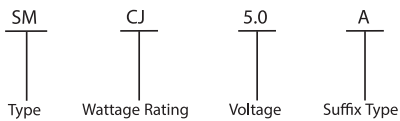
Diagram

SMB/DO-214AA



Dimensions : Inches (Millimetres)

Part Number Explanation



- Wattage Rating** : BJ = 600W and CJ = 1,500W
Voltage : 5, 7.5, 12, 15, 24 and 30 Volts
Suffix Type : A = Uni-directional and CA = Bi-directional

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