

## Surface Mount Glass Passivated Rectifier


**DO-214AA (SMB)**

### FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Low forward voltage drop
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer and telecommunication.

### MECHANICAL DATA

**Case:** DO-214AA (SMB)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-M3 - halogen-free, RoHS compliant, and commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 1A whisker test

**Polarity:** Color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
$V_{RRM}$	200 V to 1000 V
$I_{FSM}$	55 A
$I_R$	1.0 $\mu$ A
$V_F$ at $I_F = 2.0$ A	0.86 V
$T_J$ max.	150 °C
Package	DO-214AA (SMB)
Diode variations	Single die

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)							
PARAMETER	SYMBOL	SB2D	SB2G	SB2J	SB2K	SB2M	UNIT
Device marking code		B2D	B2G	B2J	B2K	B2M	
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	800	1000	V
Maximum DC forward current (fig. 1)	$I_F^{(1)}$	2.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	55					A
Operating and storage temperature range	$T_J, T_{STG}$	-55 to +150					°C

#### Note

<sup>(1)</sup> Mounted on 8 mm x 8 mm pad areas, 1 oz. FR4 PCB



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I <sub>F</sub> = 1.0 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> (1)	0.90	-	V
	I <sub>F</sub> = 2.0 A			0.96	1.15	
	I <sub>F</sub> = 1.0 A	T <sub>A</sub> = 125 °C		0.78	-	
	I <sub>F</sub> = 2.0 A			0.86	1.05	
Reverse current	Rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	I <sub>R</sub> (2)	0.15	1.0	μA
		T <sub>A</sub> = 125 °C		36	125	
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A		t <sub>rr</sub>	2.0		μs
Typical junction capacitance	Rated V <sub>R</sub> = 4.0 V, 1 MHz		C <sub>J</sub>	16		pF

**Notes**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width, ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SB2D	SB2G	SB2J	SB2K	SB2M	UNIT
Typical thermal resistance	R <sub>θJA</sub> (1)			70			°C/W
	R <sub>θJM</sub> (1)			10			

**Note**

- (1) Units mounted on PCB with 8.0 mm x 8.0 mm copper pad areas, 1 oz. FR4 PCB; R<sub>θJA</sub> - junction to ambient R<sub>θJM</sub> - junction to mount

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SB2J-M3/52T	0.096	52T	750	7" diameter plastic tape and reel
SB2J-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

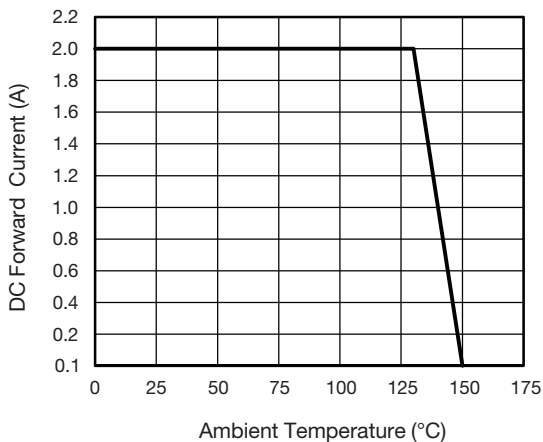


Fig. 1 - Maximum Forward Current Derating Curve

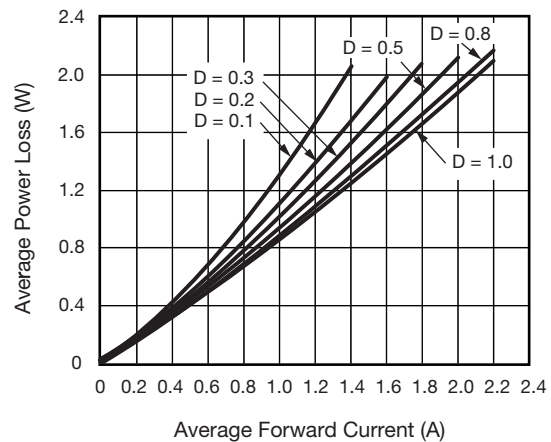


Fig. 2 - Forward Power Loss Characteristics

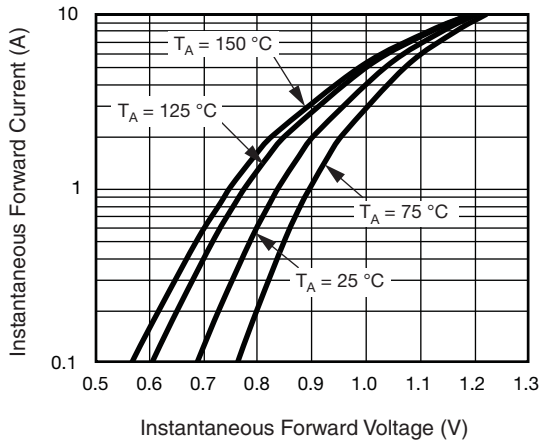


Fig. 3 - Typical Instantaneous Forward Characteristics

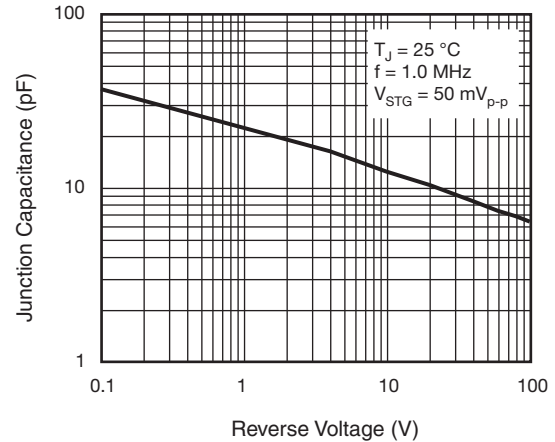


Fig. 5 - Typical Junction Capacitance

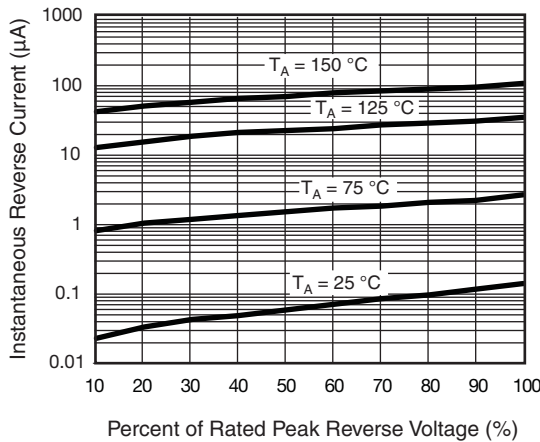


Fig. 4 - Typical Reverse Characteristics

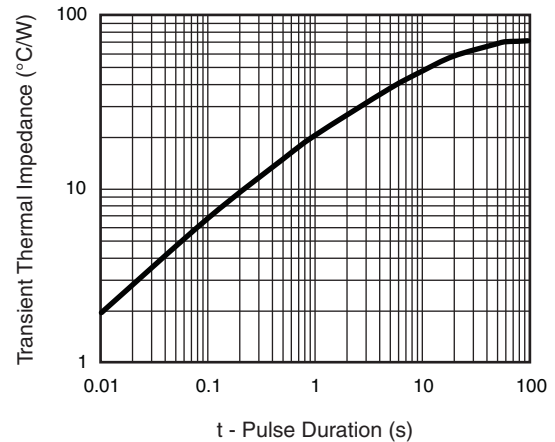
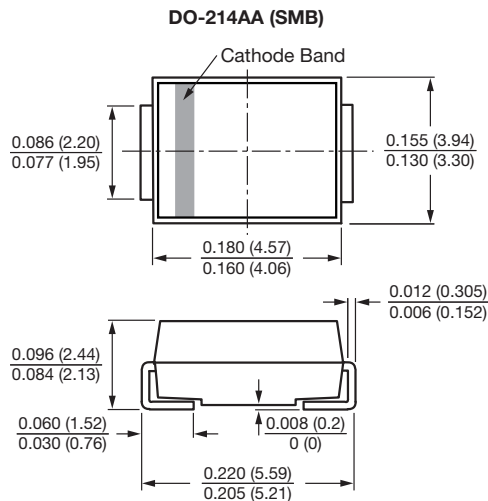


Fig. 6 - Typical Transient Thermal Impedance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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