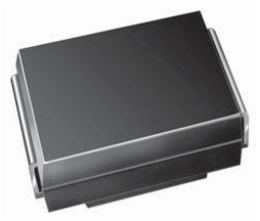
Surface Mount Glass Passivated Rectifier



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

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 µA
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

(1) Mounted on 8 mm x 8 mm pad areas, 1 oz. FR4 PCB

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**TYP.**	**MAX.**	**UNIT**
Instantaneous forward voltage	I_F = 1.0 A	T_A = 25 °C	V_F (1)	0.90	-	V
	I_F = 2.0 A			0.96	1.15	
	I_F = 1.0 A	T_A = 125 °C		0.78	-	
	I_F = 2.0 A			0.86	1.05	
Reverse current	Rated V_R	T_A = 25 °C	I_R (2)	0.15	1.0	µA
		T_A = 125 °C		36	125	
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	2.0		µs
Typical junction capacitance	Rated V_R = 4.0 V, 1 MHz		C_J	16		pF

Notes

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width, ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	**SYMBOL**	**SB2D**	**SB2G**	**SB2J**	**SB2K**	**SB2M**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ (1)	70					°C/W
	$R_{\theta JM}$ (1)	10					

Note

(1) Units mounted on PCB with 8.0 mm x 8.0 mm copper pad areas, 1 oz. FR4 PCB; $R_{\theta JA}$ - junction to ambient $R_{\theta JM}$ - 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_A = 25 °C unless otherwise noted)

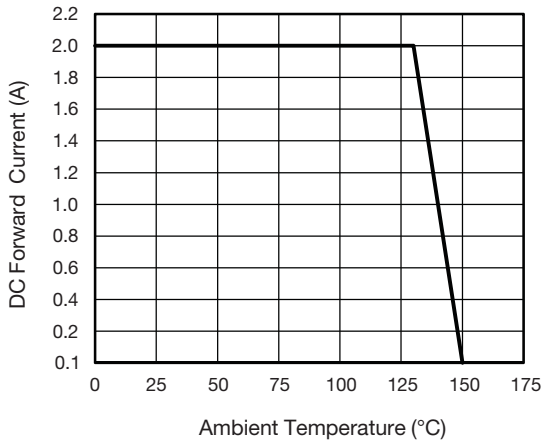


Fig. 1 - Maximum Forward Current Derating Curve

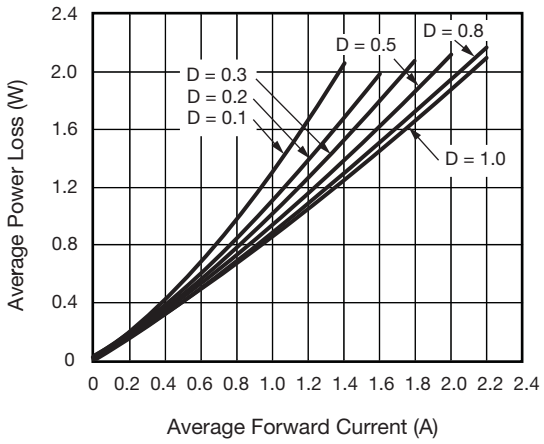


Fig. 2 - Forward Power Loss Characteristics

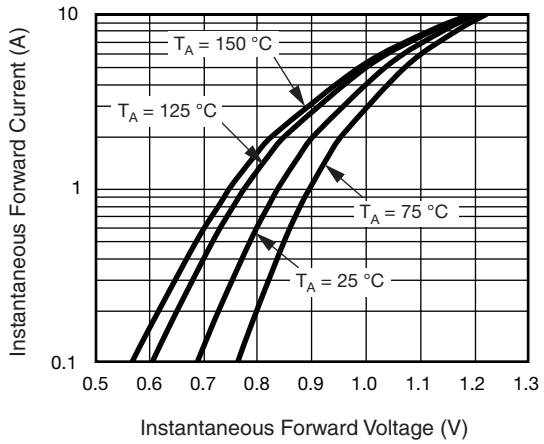


Fig. 3 - Typical Instantaneous Forward Characteristics

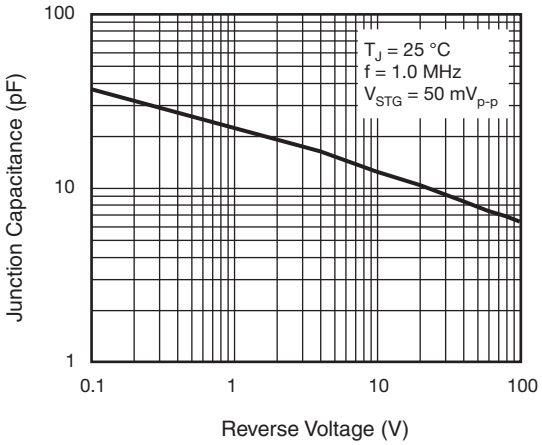


Fig. 5 - Typical Junction Capacitance

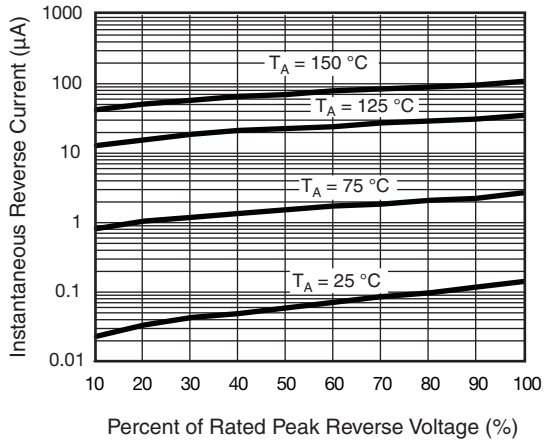


Fig. 4 - Typical Reverse Characteristics

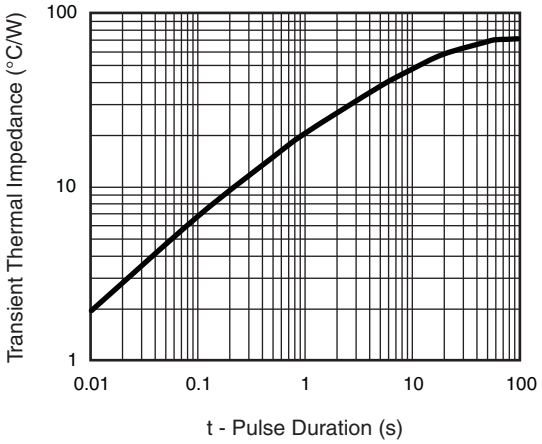
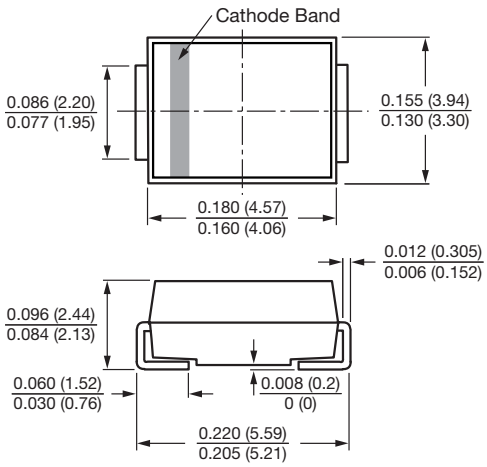


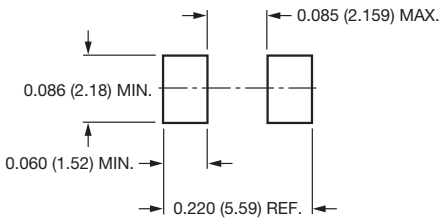
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout



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