

Surface-Mount Glass Passivated Rectifier


SMB (DO-214AA)

Cathode  Anode

ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	200 V, 400 V, 600 V, 800 V, 1000 V
I_{FSM}	55 A
I_R	1.0 μ A
V_F at $I_F = 2.0$ A	0.86 V
T_J max.	150 °C
Package	SMB (DO-214AA)
Circuit configuration	Single

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: SMB (DO-214AA)

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

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

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

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: Pulse width, $\leq 40\text{ ms}$ **THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ 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

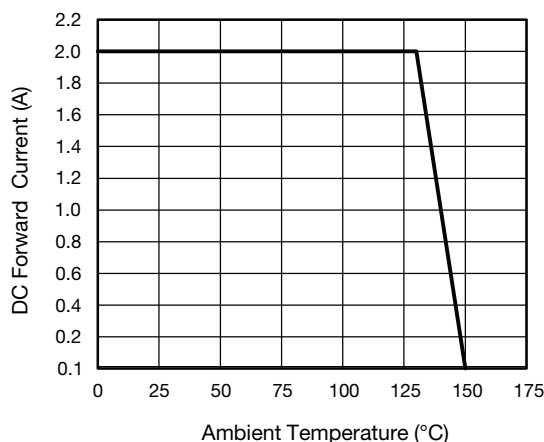
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Fig. 1 - Maximum Forward Current Derating Curve

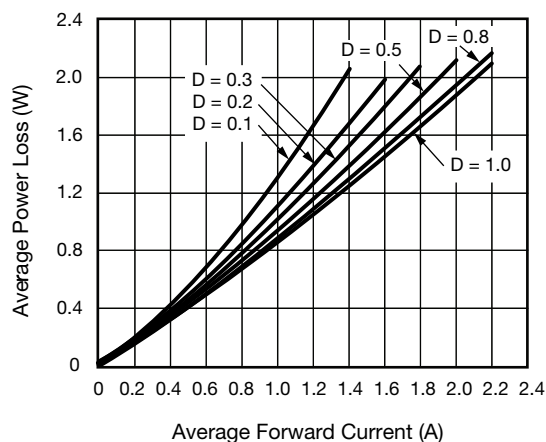


Fig. 2 - Forward Power Loss Characteristics

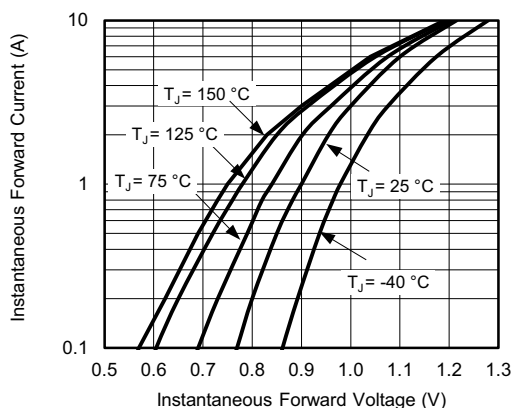


Fig. 3 - Typical Instantaneous Forward Characteristics

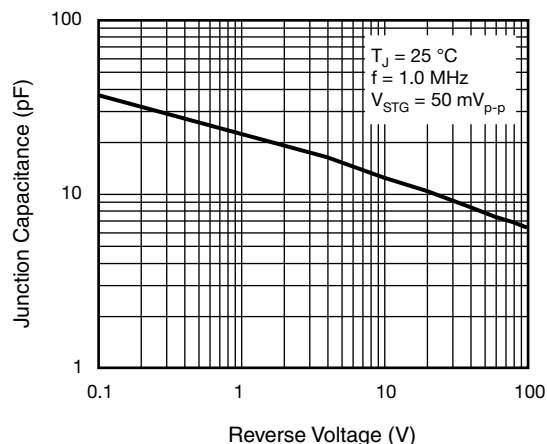


Fig. 5 - Typical Junction Capacitance

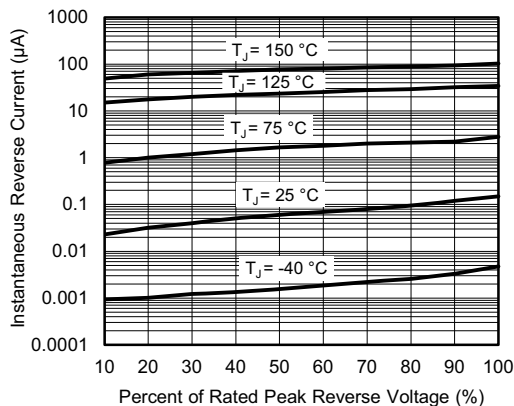


Fig. 4 - Typical Reverse Characteristics

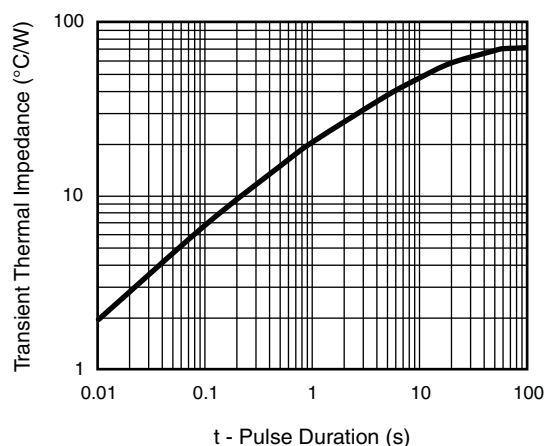
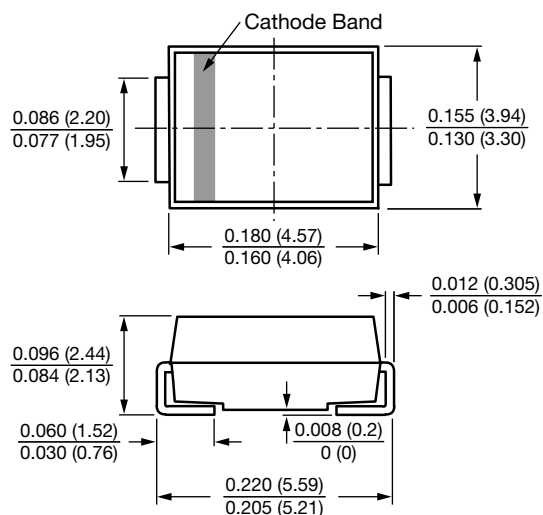


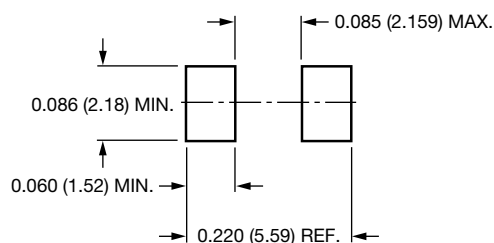
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMB (DO-214AA)



Mounting Pad Layout





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