

Vishay General Semiconductor

High-Current Density Surface Mount Schottky Rectifier



DO-214AA (SMB)

MAJOR RATINGS AND CHARACTERISTICS						
I _{F(AV)}	4.0 A					
V_{RRM}	30 V, 40 V					
I _{FSM}	100 A					
V _F	0.38 V, 0.42 V					
T _j max.	150 °C					

FEATURES

- · Low profile package
- · Ideal for automated placement
- · Guardring for overvoltage protection
- · Low power losses, high efficiency
- · Very low forward voltage drop
- · High surge capability
- Meets MSL level 1, per J-STD-020C, LF max peak of 260 °C
- Solder Dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-214AA (SMB)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high

reliability grade (AEC Q101 qualified)

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	SSB43L	SSB44	UNIT		
Device marking code		43L	S44			
Maximum repetitive peak reverse voltage	V _{RRM}	30 40		V		
Maximum RMS voltage	V _{RMS}	21	28	V		
Maximum DC blocking voltage	V _{DC}	30	40	V		
Max. average forward rectified current at T_L (see Fig. 1)	I _{F(AV)}	4.0		Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100		А		
Voltage rate of change (rated V _R)	dv/dt	10000		V/µs		
Operating junction temperature range	T _J	- 65 to + 150		°C		
Storage temperature range	T _{STG}	- 65 to	С			

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage (1)	at 4.0 A	T _j = 25 °C T _j = 125 °C	V _F	0.43 0.33	0.45 0.38	0.45 0.37	0.49 0.42	V
Maximum DC reverse current at rated DC blocking voltage (1)		$T_j = 25 ^{\circ}\text{C}$ $T_j = 125 ^{\circ}\text{C}$	I _R	- 35	0.6 45	- 25	0.4 40	mA

Note:

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL	SSB43L	SSB44	UNIT	
Typical thermal resistance ⁽¹⁾	$R_{ hetaJA} \ R_{ hetaJL}$	70 23		°C/W	

Note:

(1) Aluminum substrate mounted

ORDERING INFORMATION						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SSB43L-E3/52T	0.096	52T	750	7" Diameter Plastic Tape & Reel		
SSB43L-E3/5BT	0.096	5BT	3200	13" Diameter Plastic Tape & Reel		

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

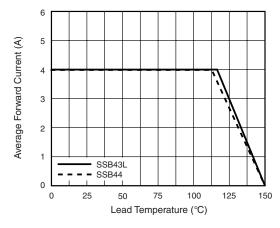


Figure 1. Forward Current Derating Curve

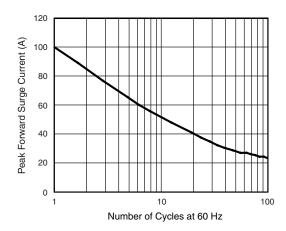


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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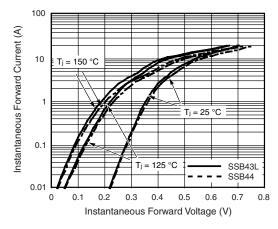


Figure 3. Typical Instantaneous Forward Characteristics

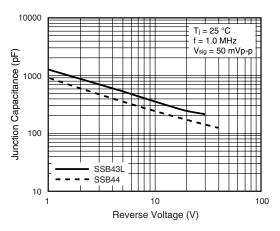


Figure 5. Typical Junction Capacitance

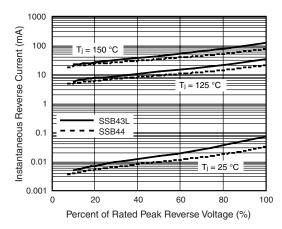
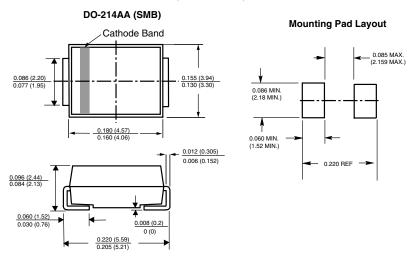


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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