

High-current Density Surface Mount Schottky Rectifier

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
$T_j \text{ max.}$	150 °C



DO-214AA (SMB)

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
- Solder Dip 260 °C, 40 seconds



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

Typical Applications

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

Maximum Ratings

$T_A = 25\text{ °C}$ unless otherwise specified

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		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100		A
Voltage rate of change (rated V_R)	dv/dt	10000		V/ μ s
Operating junction temperature range	T_J	- 65 to + 150		°C
Storage temperature range	T_{STG}	- 65 to + 150		C

Electrical Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Test condition	Symbol	Typ.	Max.	Typ.	Max.	Unit
Maximum instantaneous forward voltage	at 4.0 A ⁽¹⁾	V _F	T _J = 25 °C	0.43	0.45	0.45	0.49
			T _J = 125 °C	0.33	0.38	0.37	0.42
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾		I _R	T _J = 25 °C	-	0.6	-	0.4
			T _J = 125 °C	35	45	25	40

Notes:

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

Thermal Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Symbol	SSB43L	SSB44	Unit
Typical thermal resistance ⁽¹⁾	R _{θJA}	70		°C/W
	R _{θJL}	23		

Notes:

(1) Aluminum substrate mounted

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

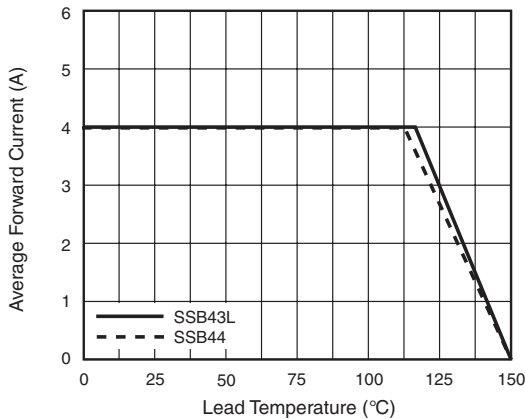


Figure 1. Forward Current Derating Curve

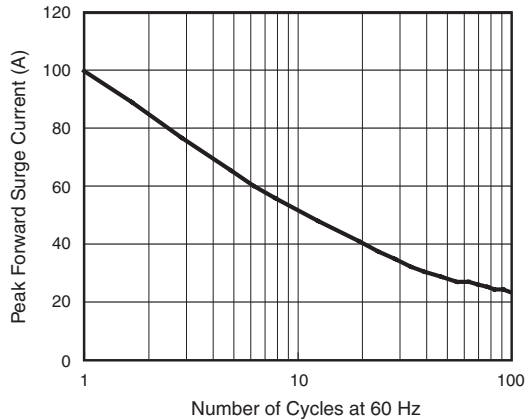


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

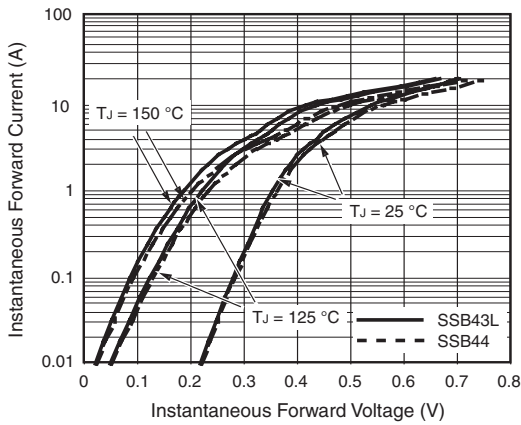


Figure 3. Typical Instantaneous Forward Characteristics

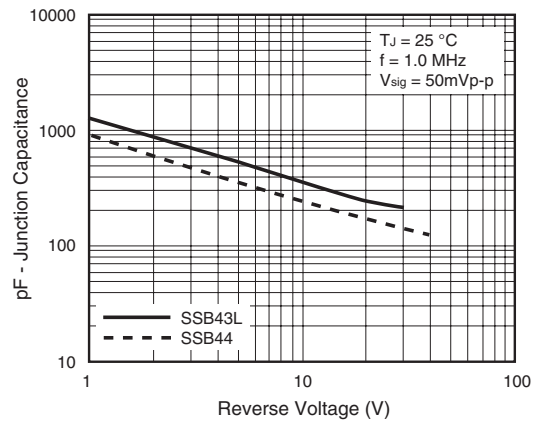


Figure 5. Typical Junction Capacitance

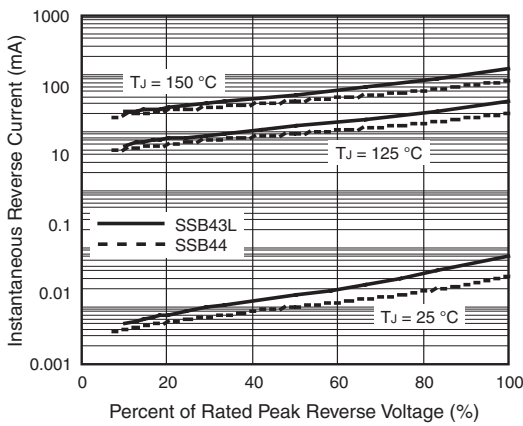
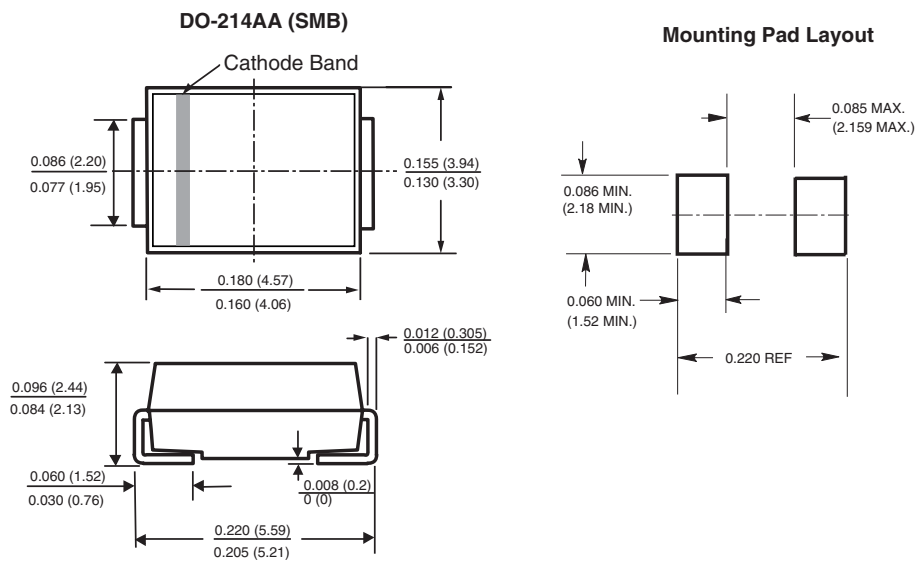


Figure 4. Typical Reverse Characteristics

Package outline dimensions in inches (millimeters)





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