

High-Current Density Surface Mount Schottky Rectifier



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, 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



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

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, free-wheeling, 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 JEESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes the cathode end

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

PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	at 4.0 A $T_j = 25\text{ }^{\circ}\text{C}$ $T_j = 125\text{ }^{\circ}\text{C}$	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⁾	$T_j = 25\text{ }^{\circ}\text{C}$ $T_j = 125\text{ }^{\circ}\text{C}$	I_R	- 35	0.6 45	- 25	0.4 40	mA

Note:(1) Pulse test: 300 μs pulse width, 1 % duty cycle**THERMAL CHARACTERISTICS** ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	SSB43L	SSB44	UNIT
Typical thermal resistance ⁽¹⁾	$R_{\theta JA}$ $R_{\theta JL}$	70 23		$^{\circ}\text{C/W}$

Note:

(1) Aluminum substrate mounted

ORDERING INFORMATION (Example)

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
SSB43LHE3/52T ⁽¹⁾	0.096	52T	750	7" Diameter Plastic Tape & Reel
SSB43LHE3/5BT ⁽¹⁾	0.096	5BT	3200	13" Diameter Plastic Tape & Reel

Note:

(1) Automotive grade AEC Q101 qualified

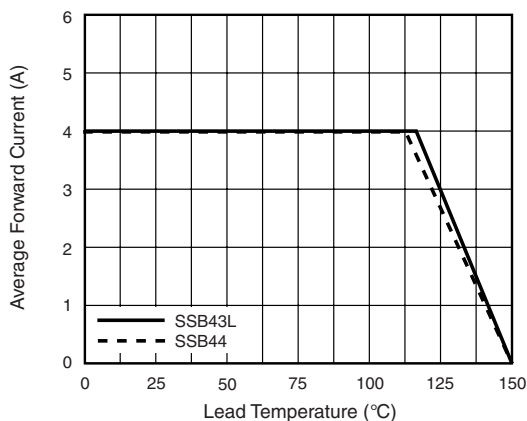
RATINGS AND CHARACTERISTICS CURVES($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Forward Current Derating Curve

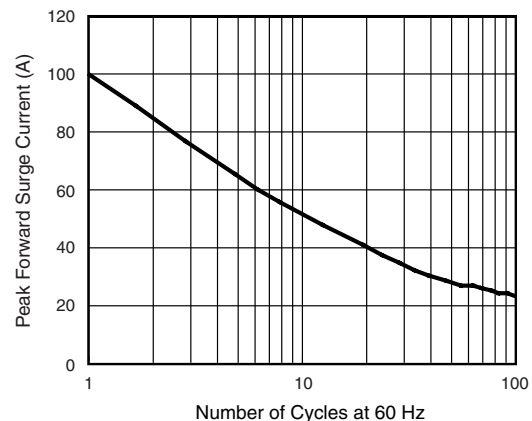


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

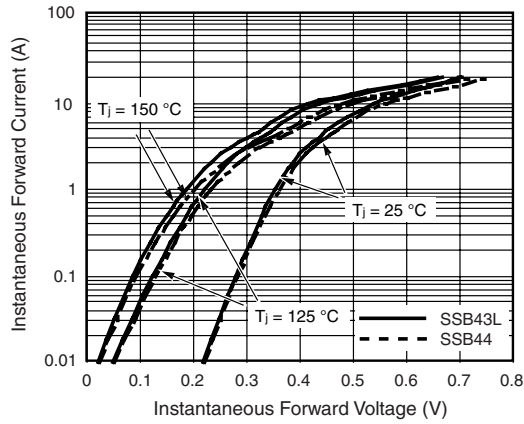


Figure 3. Typical Instantaneous Forward Characteristics

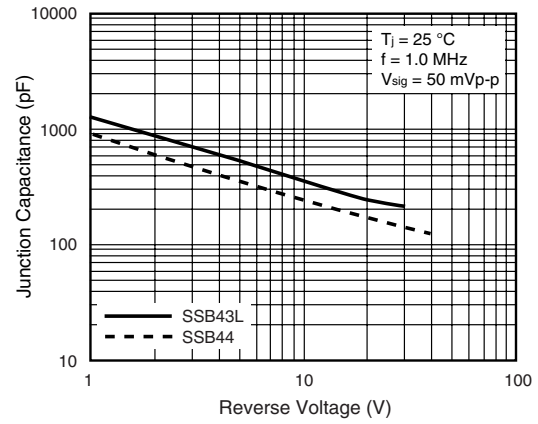


Figure 5. Typical Junction Capacitance

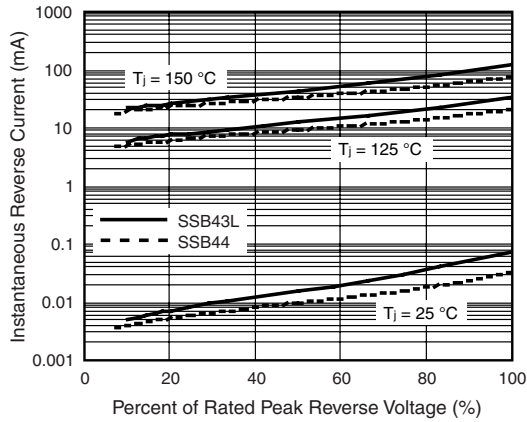
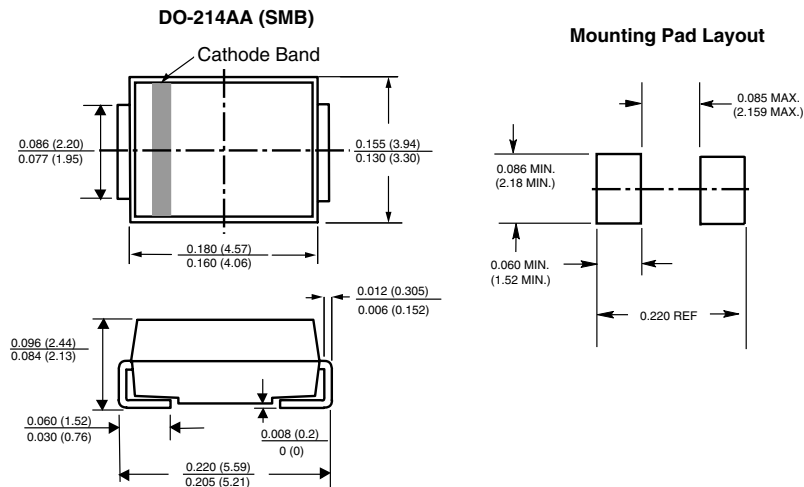


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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