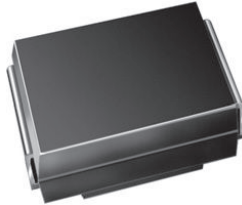


# High Current Density Surface Mount Schottky Rectifier


**SMB (DO-214AA)**

**RoHS**  
 COMPLIANT  
 HALOGEN  
**FREE**  
 Available

**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-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
  - Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

**TYPICAL APPLICATIONS**

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

**MECHANICAL DATA**

**Case:** SMB (DO-214AA)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Base P/NHE3\_X - RoHS-compliant and AEC-Q101 qualified

Base P/NHM3\_X - halogen-free, RoHS-compliant, and AEC-Q101 qualified

("\_X" denotes revision code e.g. A, B, ....)

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

**Polarity:** color band denotes cathode end

PRIMARY 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
Package	SMB (DO-214AA)
Diode variations	Single

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 $T_L$ (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	10 000		V/ $\mu$ s
Operating junction temperature range	$T_J$	-65 to +150		°C
Storage temperature range	$T_{STG}$	-65 to +150		°C



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	SSB43L		SSB44		UNIT
				TYP.	MAX.	TYP.	MAX.	
Maximum instantaneous forward voltage <sup>(1)</sup>	4.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.43	0.45	0.45	0.49	V
		T <sub>J</sub> = 125 °C		0.33	0.38	0.37	0.42	
Maximum reverse current at rated V <sub>R</sub> <sup>(2)</sup>		T <sub>J</sub> = 25 °C	I <sub>R</sub>	-	0.6	-	0.4	mA
		T <sub>J</sub> = 125 °C		35	45	25	40	

**Notes**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SSB43L	SSB44	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	70		°C/W
	R <sub>θJL</sub>	23		

**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 and reel
SSB43L-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SSB43LHE3_A/H <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel
SSB43LHE3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel
SSB43L-M3/52T	0.096	52T	750	7" diameter plastic tape and reel
SSB43L-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SSB43LHM3_A/H <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel
SSB43LHM3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel

**Note**

- (1) AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

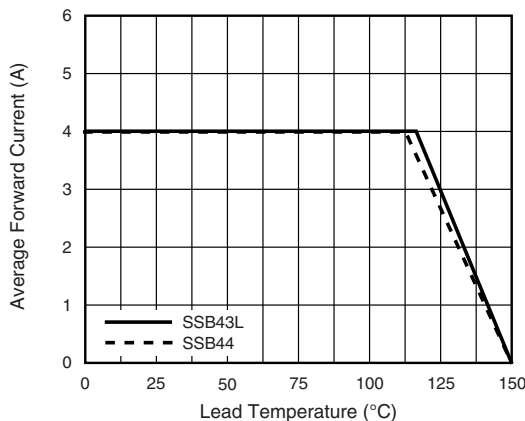


Fig. 1 - Forward Current Derating Curve

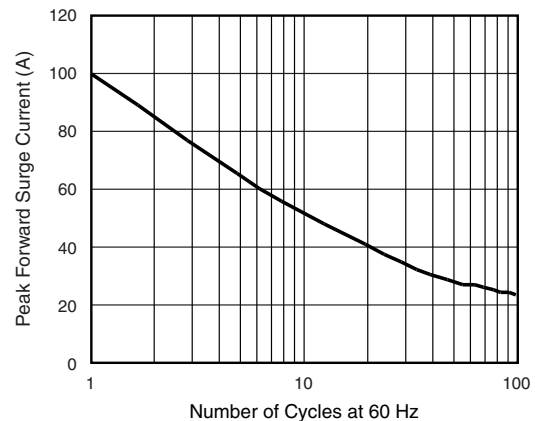


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

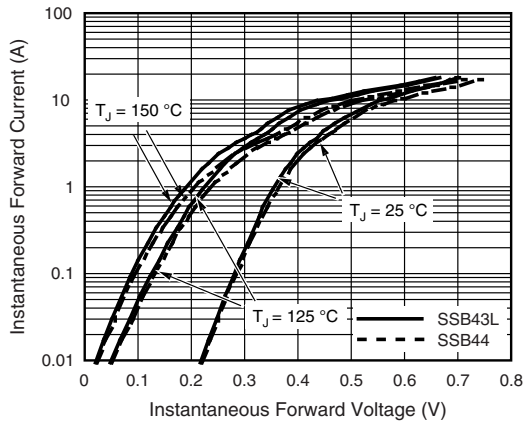


Fig. 3 - Typical Instantaneous Forward Characteristics

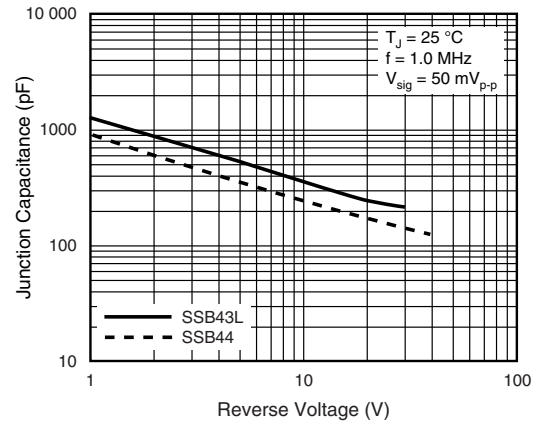


Fig. 5 - Typical Junction Capacitance

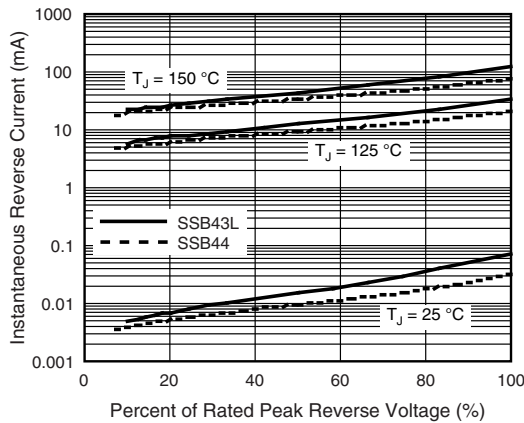
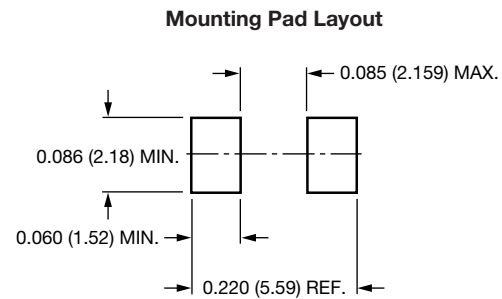
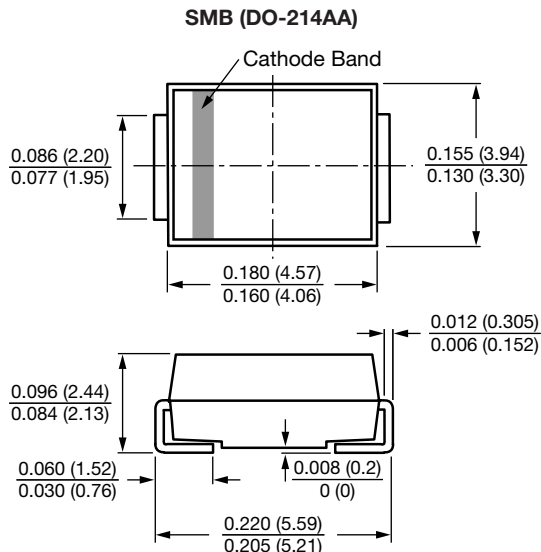


Fig. 4 - Typical Reverse Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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