AUTOMOTIVE GRADE

RoHS

COMPLIANT

HALOGEN FREE



Vishay General Semiconductor

High Current Density Surface-Mount Schottky Rectifier



SMB (DO-214AA)



LINKS TO ADDITIONAL RESOURCES



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 max.	150 °C				
Package	SMB (DO-214AA)				
Circuit configuration	Single				

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 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

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

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		А
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	10 000		V/µs
Operating junction temperature range	TJ	-65 to +150		°C
Storage temperature range	T _{STG}	-65 to +150		



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	SSB43L		SSB44		UNIT
PARAMETER				TYP.	MAX.	TYP.	MAX.	UNII
Maximum instantaneous forward voltage (1)	4.0 A	T _J = 25 °C	· //-	0.43	0.45	0.45	0.49	V
	4.0 A	T _J = 125 °C		0.33	0.38	0.37	0.42	
Maximum reverse current at rated V _B (2)		T _J = 25 °C		-	0.6	-	0.4	А
waximum reverse current at rated $v_R \sim$	T,	T _J = 125 °C	I _R	35	45	25	40	mA

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 $\,\%$ duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)					
PARAMETER SYMBOL SSB			SSB44	UNIT	
Typical thermal resistance (1)	$R_{\theta JA}$	70		°C/W	
Typical thermal resistance (*)	$R_{\theta JL}$	2	3	C/VV	

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 (1)	0.096	Н	750	7" diameter plastic tape and reel		
SSB43LHE3_A/I (1)	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 (1)	0.096	Н	750	7" diameter plastic tape and reel		
SSB43LHM3_A/I (1)	0.096	I	3200	13" diameter plastic tape and reel		

Note

(1) AEC-Q101 qualified



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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

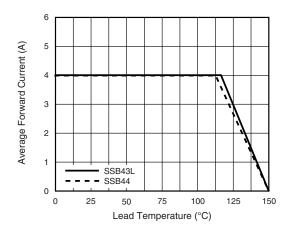
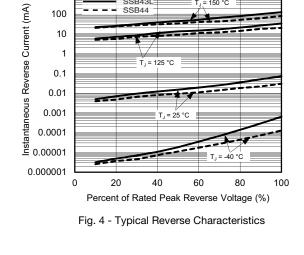


Fig. 1 - Forward Current Derating Curve



SSB43

1000

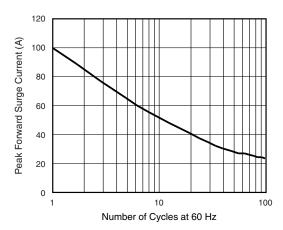


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

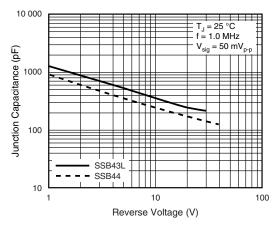


Fig. 5 - Typical Junction Capacitance

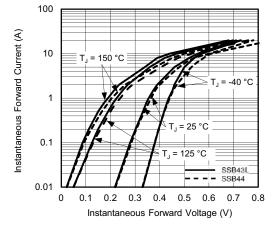


Fig. 3 - Typical Instantaneous Forward Characteristics

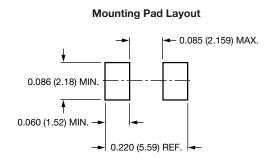


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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

0.086 (2.20) 0.077 (1.95) 0.180 (4.57) 0.160 (4.06) 0.096 (2.44) 0.084 (2.13) 0.060 (1.52) 0.030 (0.76) 0.220 (5.59)

0.205 (5.21)





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