AUTOMOTIVE GRADE

RoHS

COMPLIANT

HALOGEN FREE



Vishay General Semiconductor

Surface-Mount Schottky Barrier Rectifier



SMC (DO-214AB)



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS						
I _{F(AV)}	4.0 A					
V_{RRM}	20 V, 30 V, 40 V					
I _{FSM}	150 A					
V _F	0.31 V, 0.35 V					
T _J max.	125 °C					
Package	SMC (DO-214AB)					
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 of 260 °C
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: SMC (DO-214AB)

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 the cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	SL42	SL43	SL44	UNIT	
Device marking code		SL2	SL3	SL4		
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	V	
Maximum RMS voltage	V _{RMS}	14	21	28	V	
Maximum DC blocking voltage	V_{DC}	20	30	40	V	
Maximum average forward rectified current ⁽¹⁾ at T _L (fig. 1)	1		Α			
	I _{F(AV)}					
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	150			А	
Operating junction temperature range	TJ	-55 to +125			°C	
Storage temperature range	T _{STG}	-55 to +150				

Note

⁽¹⁾ PCB mounted 0.55" x 0.55" (14 mm x 14 mm) copper pad areas, $T_L = 90$ °C



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	SL42	SL43	SL44	UNIT
Maximum instantaneous forward voltage at (1)	I _F = 4.0 A	T _A = 125 °C T _A = 25 °C	V _F	0.31		0.35	
		T _A = 25 °C		0.42		0.44	
	I _F = 8.0 A	T _A = 125 °C T _A = 25 °C		0.	37	0.41) v
		T _A = 25 °C		0.47 0.50	0.50		
Maximum DC reverse current at rated DC	T _A = 25 °C		1	0.5		mA	
blocking voltage (1)		T _A = 100 °C	IR	35			IIIA

Note

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	SL42	SL43	SL44	UNIT	
Typical thermal resistance (1)	$R_{\theta JA}$	50		°C/W		
Typical thermal resistance (*)	$R_{\theta JL}$		14		C/VV	

Note

 $^{(1)}\,$ PCB mounted 0.55" x 0.55" (14 mm x 14 mm) copper pad areas, T_L = 90 °C

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
SL44-E3/57T	0.235	57T	850	7" diameter plastic tape and reel			
SL44-E3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel			
SL44HE3_B/H ⁽¹⁾	0.235	Н	850	7" diameter plastic tape and reel			
SL44HE3_B/I (1)	0.235	I	3500	13" diameter plastic tape and reel			
SL44-M3/57T	0.235	57T	850	7" diameter plastic tape and reel			
SL44-M3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel			
SL44HM3_A/H ⁽¹⁾	0.235	Н	850	7" diameter plastic tape and reel			
SL44HM3_A/I (1)	0.235	I	3500	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)

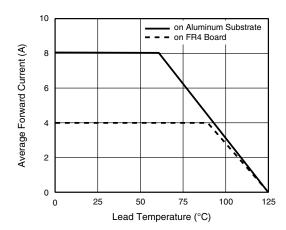


Fig. 1 - Forward Current Derating Curve

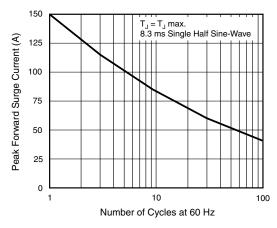


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

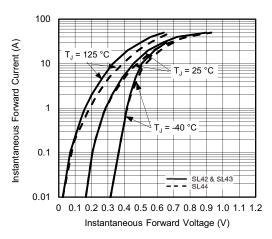


Fig. 3 - Typical Instantaneous Forward Characteristics

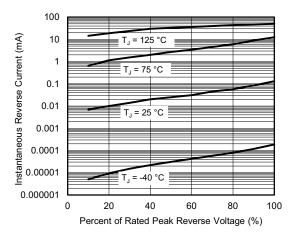


Fig. 4 - Typical Reverse Characteristics

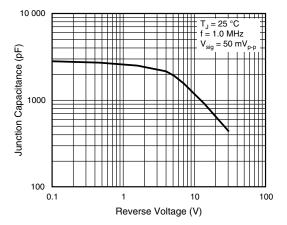


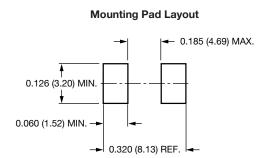
Fig. 5 - Typical Junction Capacitance



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

O.126 (3.20) 0.114 (2.90) 0.103 (2.62) 0.006 (1.52) 0.030 (0.76) 0.320 (8.13) 0.320 (8.13) 0.320 (8.13) 0.305 (7.75)







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