HALOGEN

FREE



## Vishay General Semiconductor

# **Surface Mount Schottky Barrier Rectifier**



**SMC (DO-214AB)** 

PRIMARY CHARACTERISTICS						
$I_{F(AV)}$	4.0 A					
$V_{RRM}$	20 V, 30 V, 40 V					
I <sub>FSM</sub>	150 A					
V <sub>F</sub>	0.31 V, 0.35 V					
T <sub>J</sub> 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
  - 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: 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

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 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 <sup>(1)</sup> at T <sub>L</sub> (fig. 1)	I <sub>F(AV)</sub>	4.0			Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	150			А	
Operating junction temperature range	TJ	-55 to +125			°C	
Storage temperature range	T <sub>STG</sub>	-55 to +150			°C	

#### Note

ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishav.com/doc?91000

<sup>&</sup>lt;sup>(1)</sup> PCB mounted 0.55" x 0.55" (14 mm x 14 mm) copper pad areas,  $T_L = 90$  °C



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	SL42	SL43	SL44	UNIT
Maximum instantaneous forward voltage at (1)	I <sub>F</sub> = 4.0 A	T <sub>A</sub> = 125 °C		0.31		0.35	V
		T <sub>A</sub> = 25 °C	V <sub>F</sub>	0.42		0.44	
	I <sub>F</sub> = 8.0 A	T <sub>A</sub> = 125 °C T <sub>A</sub> = 25 °C		0.3	37	0.41	V
		T <sub>A</sub> = 25 °C		0.4	47	0.50	
Maximum DC reverse current at rated DC	T <sub>A</sub> = 25 °C		_	0.5		A	
blocking voltage (1)		T <sub>A</sub> = 100 °C	I <sub>R</sub>	35			mA

#### Note

 $<sup>^{(1)}\,</sup>$  Pulse test: 300  $\mu s$  pulse width, 1 % duty cycle

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

### Note

 $<sup>^{(1)}\,</sup>$  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 <sup>(1)</sup>	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 <sup>(1)</sup>	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

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

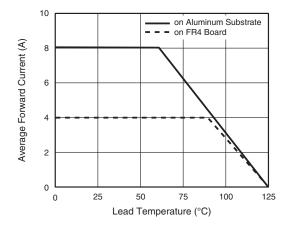


Fig. 1 - Forward Current Derating Curve

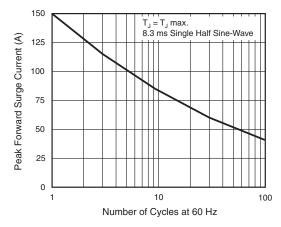


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

<sup>(1)</sup> AEC-Q101 qualified



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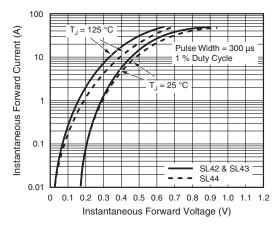


Fig. 3 - Typical Instantaneous Forward Characteristics

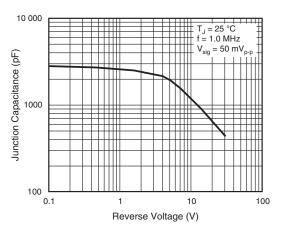


Fig. 5 - Typical Junction Capacitance

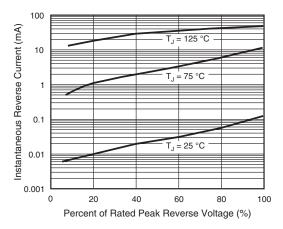
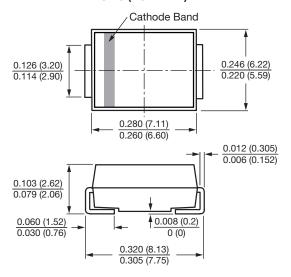


Fig. 4 - Typical Reverse Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

## SMC (DO-214AB)



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