

## Vishay General Semiconductor

# **High-Current Density Surface Mount Schottky Rectifier**



DO-214AB (SMC)

PRIMARY CHARACTERISTICS					
I <sub>F(AV)</sub>	5.0 A				
$V_{RRM}$	30 V, 40 V				
I <sub>FSM</sub>	175 A				
$V_{F}$	0.38 V, 0.42 V				
T <sub>J</sub> max.	150 °C				

#### **FEATURES**

· Low profile package



- · 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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

#### **TYPICAL APPLICATIONS**

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

### **MECHANICAL DATA**

Case: DO-214AB (SMC)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade

(AEC Q101 qualified), meets

Polarity: Color band denotes the cathode end

PARAMETER	SYMBOL	SSC53L	SSC54	UNIT
Device marking code		53L	S54	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	30 40		V
Maximum RMS voltage	V <sub>RMS</sub>	21	28	V
Maximum DC blocking voltage	V <sub>DC</sub>	30	40	V
Maximum average forward rectified current at T <sub>L</sub> (Fig. 1)	I <sub>F(AV)</sub>	5.0		А
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	175		А
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000		V/µs
Operating junction temperature range	TJ	- 65 to + 150		°C
Storage temperature range	T <sub>STG</sub>	- 65 to + 150		

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS SYMBOL		CVMBOL	SSC53L		SSC54		UNIT
PARAMETER			STIMBUL	TYP.	MAX.	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage (1)	5.0 A	T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	V <sub>F</sub>	0.42 0.33	0.45 0.38	0.45 0.36	0.49 0.42	V
Maximum reverse current at rated V <sub>R</sub> <sup>(2)</sup>		T <sub>J</sub> = 25 °C T <sub>J</sub> = 125 °C	I <sub>R</sub>	- 45	0.7 65	- 40	0.5 60	mA

#### 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 SSC53L SSC54			UNIT	
Typical thermal resistance <sup>(1)</sup>	$egin{array}{l} R_{ hetaJA} \ R_{ hetaJL} \end{array}$	60 20		°C/W	

#### Note:

(1) Aluminum substrate mounted

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SSC53L-E3/57T	0.235	57T	850	7" diameter plastic tape and reel		
SSC53L-E3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel		
SSC53LHE3/57T (1)	0.235	57T	850	7" diameter plastic tape and reel		
SSC53LHE3/9AT (1)	0.235	9AT	3500	13" diameter plastic tape and reel		

## Note:

(1) Automotive grade AEC Q101 qualified

### **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

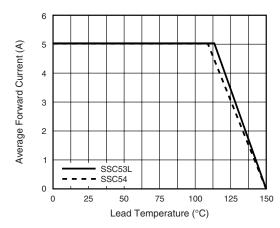


Figure 1. Forward Current Derating Curve

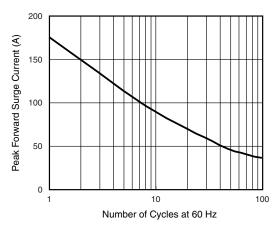


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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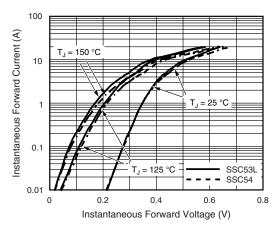


Figure 3. Typical Instantaneous Forward Characteristics

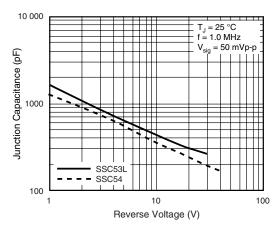


Figure 5. Typical Junction Capacitance

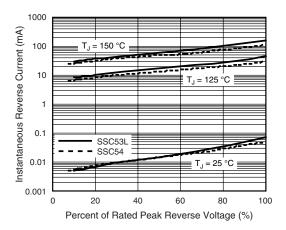
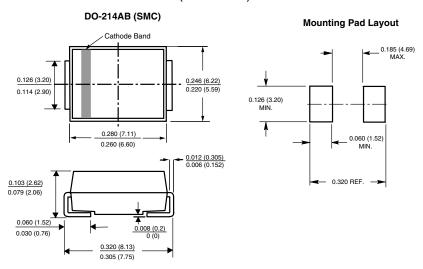


Figure 4. Typical Reverse Characteristics

### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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