COMPLIANT

HALOGEN

FREE



Vishay General Semiconductor

High-Current Density Surface Mount Schottky Rectifier



DO-214AB (SMC)

PRIMARY CHARACTERISTICS					
Package	DO-214AB (SMC)				
I _{F(AV)}	5.0 A				
V _{RRM}	30 V, 40 V				
I _{FSM}	175 A				
V _F	0.38 V, 0.42 V				
T _J max.	150 °C				
Diode variations	Single die				

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
- 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: DO-214AB (SMC)

Molding compound meets UL 94 V-0 flammability rating Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

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

J-51D-002 and JESD 22-B102

M3 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	SSC53L	SSC54	UNIT	
Device marking code		53L	S54		
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	
Maximum average forward rectified current at T _L (fig. 1)	I _{F(AV)}	5.0		А	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	175		А	
Voltage rate of change (rated V _R)	dV/dt	10 000		V/µs	
Operating junction temperature range	T _J	-65 to +150		°C	
Storage temperature range	T _{STG}	-65 to	°C		



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS		SYMBOL	SSC53L		SSC54		UNIT
PARAMETER				TYP.	MAX.	TYP.	MAX.	UNII
Maximum instantaneous forward voltage (1)	5.0 A	T _J = 25 °C	V _F	0.42	0.45	0.45	0.49	V
		T _J = 125 °C		0.33	0.38	0.36	0.42	
Maximum reverse current at rated V _R ⁽²⁾		T _J = 25 °C		-	0.7	-	0.5	mA
		T _J = 125 °C	IR	45	65	40	60	IIIA

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 SSC53L SSC54		SSC54	UNIT	
Typical thermal resistance (1)	$R_{\theta JA}$	60		°C/W	
Typical thermal resistance w	$R_{\theta JL}$	20			

Note

(1) Aluminum substrate mounted

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
SSC53L-M3/57T	0.235	57T	850	7" diameter plastic tape and reel			
SSC53L-M3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel			

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

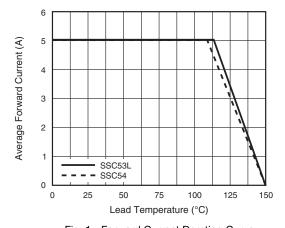


Fig. 1 - Forward Current Derating Curve

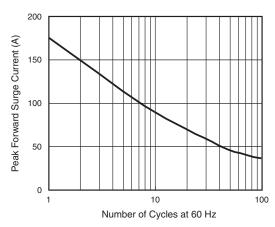


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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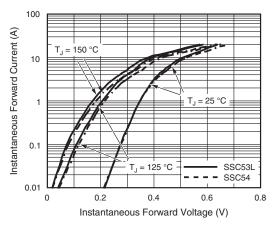


Fig. 3 - Typical Instantaneous Forward Characteristics

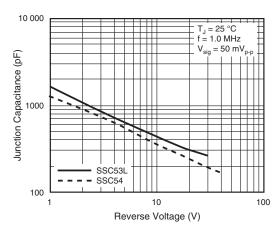


Fig. 5 - Typical Junction Capacitance

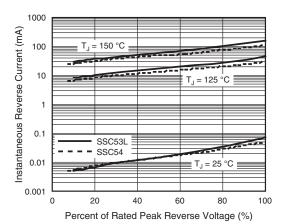
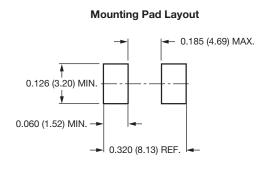


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

0.126 (3.20) 0.114 (2.90) 0.103 (2.62) 0.006 (1.52) 0.000 (1.52) 0.000 (0.76) 0.000 (0.76) 0.000 (0.75) 0.000 (0.152)





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