AUTOMOTIVE GRADE

RoHS

COMPLIANT



Vishay General Semiconductor

High Current Density Surface-Mount Schottky Rectifier



SMC (DO-214AB)



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS					
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				
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
- 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/NHE3_X - 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 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

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
PANAMETEN				TYP.	MAX.	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage (1)	5.0 A	T _J = 25 °C	V _F	0.42	0.45	0.45	0.49	V
	5.0 A	T _J = 125 °C		0.33	0.38	0.36	0.42	V
Maximum rayaraa aurrant at rated V (2)		T _J = 25 °C	I _R	-	0.7	-	0.5	mA
Maximum reverse current at rated V _R ⁽²⁾		T _J = 125 °C		45	65	40	60	

Notes

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

(2) Pulse test: Pulse width \leq 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	SSC53L	SSC54	UNIT		
Typical thermal resistance (1)	$R_{\theta JA}$	60		°C/W		
Typical trieffial resistance (*)	$R_{\theta JL}$	2	0	C/VV		

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_A/H (1)	0.235	Н	850	7" diameter plastic tape and reel			
SSC53LHE3_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)

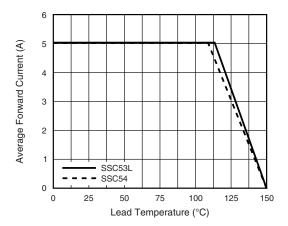


Fig. 1 - Forward Current Derating Curve

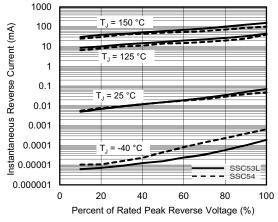


Fig. 4 - Typical Reverse Characteristics

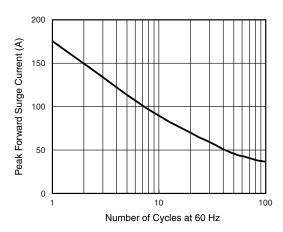


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

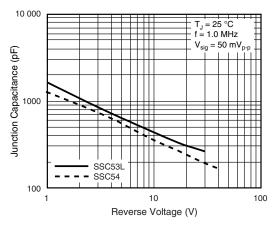


Fig. 5 - Typical Junction Capacitance

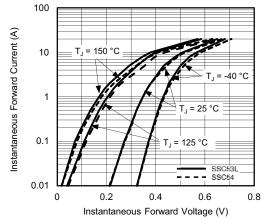


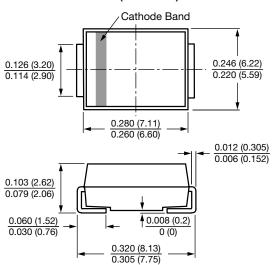
Fig. 3 - Typical Instantaneous Forward Characteristics



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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMC (DO-214AB)



→ 0.320 (8.13) REF. -



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