RoHS



Vishay General Semiconductor

High Current Density Surface Mount Schottky Rectifier



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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	DO-214AB (SMC)				
Diode variations	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
- Material categorization: For definitions of compliance please see <u>www.vishav.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-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		Α
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 +150		°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.	ONIT
Maximum instantaneous forward voltage (1)	5.0 A	T _J = 25 °C	V _F	0.42	0.45	0.45	0.49	V
Maximum instantaneous forward voltage (*)		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
iviaximum reverse current at rated $v_R \leftarrow$	<u> </u>	T _J = 125 °C		45	65	40	60	

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

Note

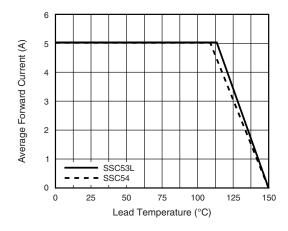
(1) Aluminum substrate mounted

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

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





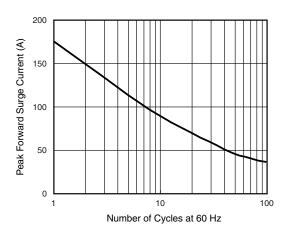


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current



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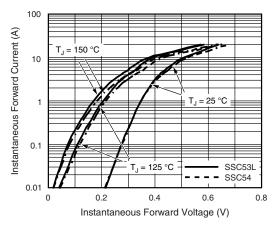


Fig. 3 - Typical Instantaneous Forward Characteristics

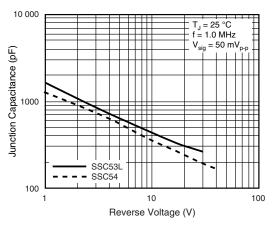


Fig. 5 - Typical Junction Capacitance

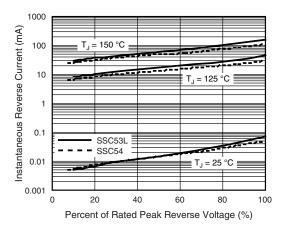
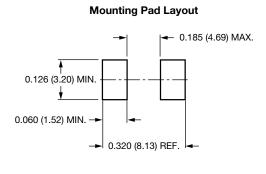


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

0.126 (3.20) 0.114 (2.90) 0.103 (2.62) 0.006 (1.52) 0.006 (1.52) 0.008 (0.2) 0.008 (0.2) 0.008 (0.2) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06) 0.009 (2.06)





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