SSC53L & SSC54

New Product **Vishay General Semiconductor**

High-current Density Surface Mount Schottky Rectifier

Major Ratings and 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

DO-214AB (SMC)

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-020C
- Solder Dip 260 °C, 40 seconds

Typical Applications

For use in low voltage high frequency inverters, free wheeling, 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-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes the cathode end

Maximum Ratings

T_A = 25 °C unless otherwise specified

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 (See Fig. 1)	$I_{F(AV)}$	5.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	175		A
Voltage rate of change (rated V_R)	dv/dt	10000		V/µs
Operating junction temperature range	T_J	- 65 to + 150		°C
Storage temperature range	T_{STG}	- 65 to + 150		°C

Electrical Characteristics

T_A = 25 °C unless otherwise specified#

Parameter	Test condition		Symbol	Typ.	Max.	Typ.	Max.	Unit
Maximum instantaneous Forward voltage	at 5.0 A (1)	T_J = 25 °C T_J = 125 °C	V_F	0.42 0.33	0.45 0.38	0.45 0.36	0.49 0.42	V
Maximum DC reverse current at rated DC blocking voltage(1)		T_J = 25 °C T_J = 125 °C	I_R	- 45	0.7 65	- 40	0.5 60	mA

Notes:
(1) Pulse test: 300 µs pulse width, 1 % duty cycle

Thermal Characteristics

T_A = 25 °C unless otherwise specified

Parameter	Symbol	SSC53L	SSC54	Unit
Typical thermal resistance(1)	$R\theta_{JA}$ $R\theta_{JL}$	60 20		°C/W

Notes:

(1) Aluminum substrate mounted

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

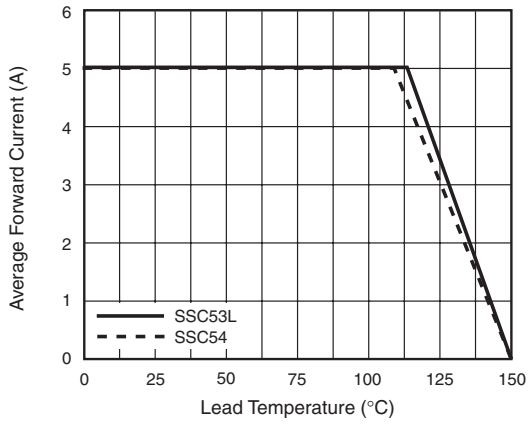


Figure 1. Forward Current Derating Curve

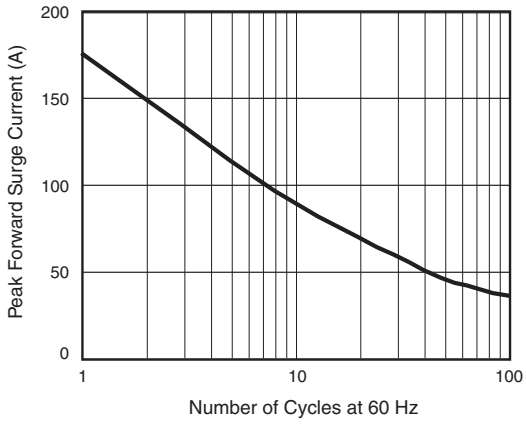


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

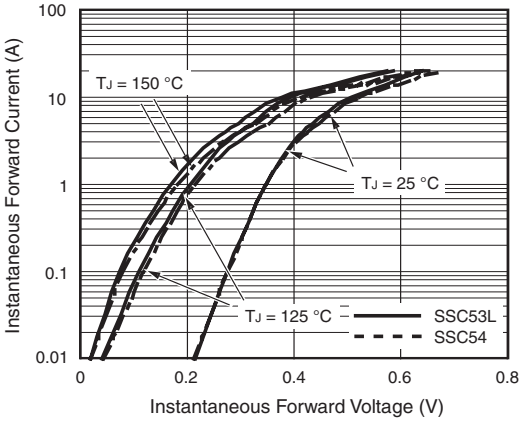


Figure 3. Typical Instantaneous Forward Characteristics

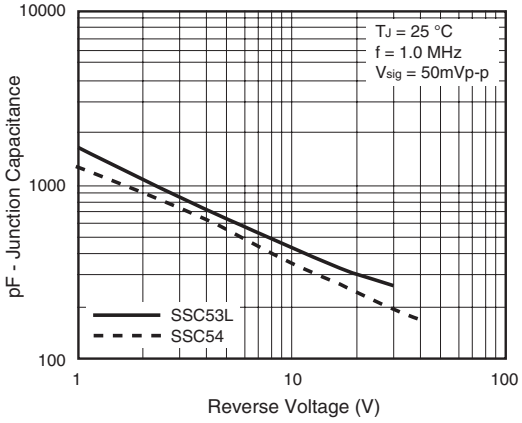


Figure 5. Typical Junction Capacitance

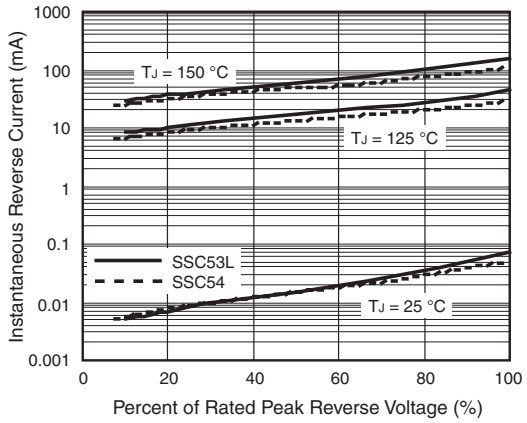
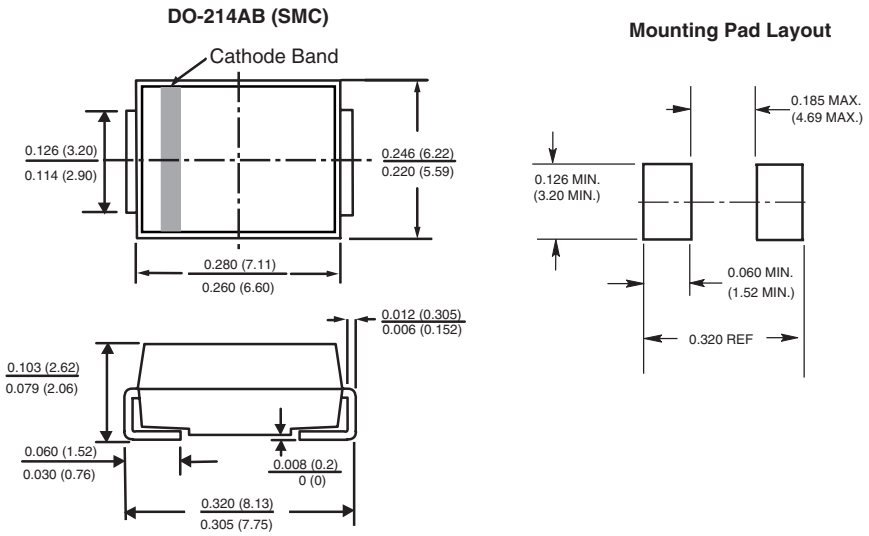


Figure 4. Typical Reverse Characteristics

Package outline dimensions in inches (millimeters)



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