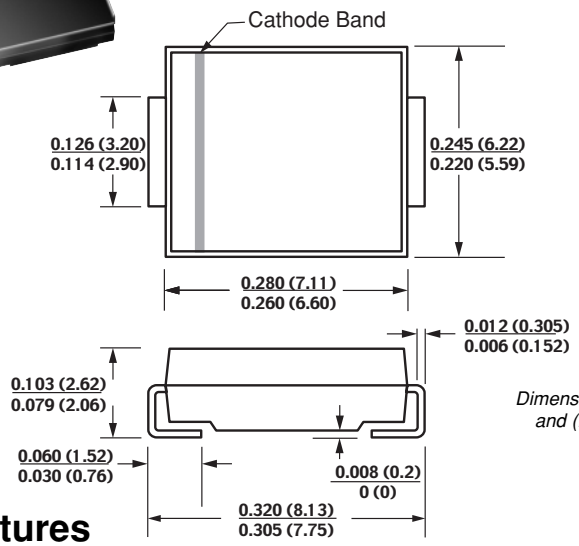
High-Current Density Surface Mount Schottky Rectifier

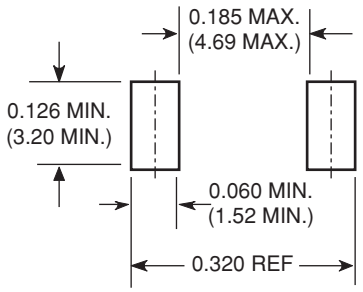
DO-214AB (SMC)



Dimensions in inches and (millimeters)

Reverse Voltage 30 & 40V
Forward Current 5.0A

Mounting Pad Layout



Features

- Low power loss, high efficiency
- Low profile surface mount package
- Built-in strain relief
- For use in low voltage high frequency inverters, free wheeling, and polarity protection applications
- Guardring for overvoltage protection
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0

Mechanical Data

Case: JEDEC DO-214AB molded plastic body
Terminals: Solder plated, solderable per MIL-STD750, Method 2026
High temperature soldering guaranteed: 250°C/10 seconds at terminals
Polarity: Color band denotes cathode end
Weight: 0.007 oz., 0.25 g

Maximum Ratings and Thermal Characteristics (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 (See Fig. 1)	$I_{F(AV)}$	5.0		A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	175		A
Typical thermal resistance(2)	$R_{\Theta JA}$ $R_{\Theta JL}$	60 20		°C/W
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

Electrical Characteristics (T_A = 25°C unless otherwise noted)

Parameter		Symbol	Typ.	Max.	Typ.	Max.	Unit
Maximum instantaneous Forward voltage at 5.0A (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: 300µs pulse width, 1% duty cycle
(2) Aluminum substrate mounted

Ratings and Characteristic Curves (T_A = 25°C unless otherwise noted)

Fig. 1 – Forward Current Derating Curve

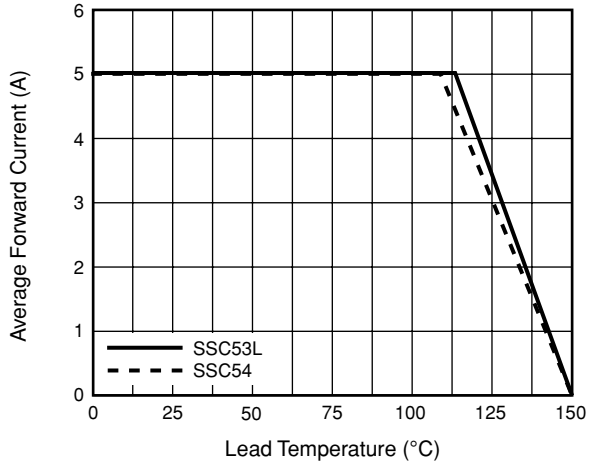


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

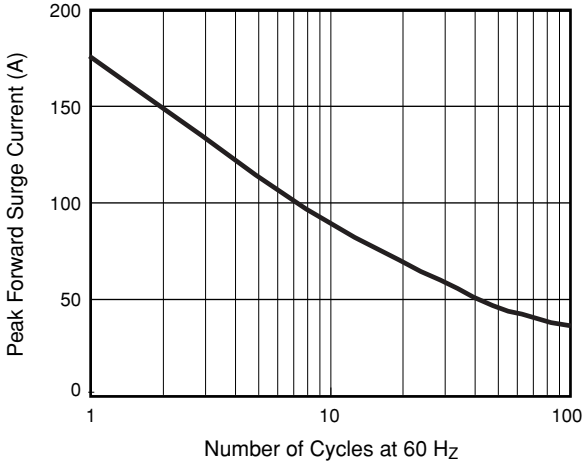


Fig. 3 – Typical Instantaneous Forward Characteristics

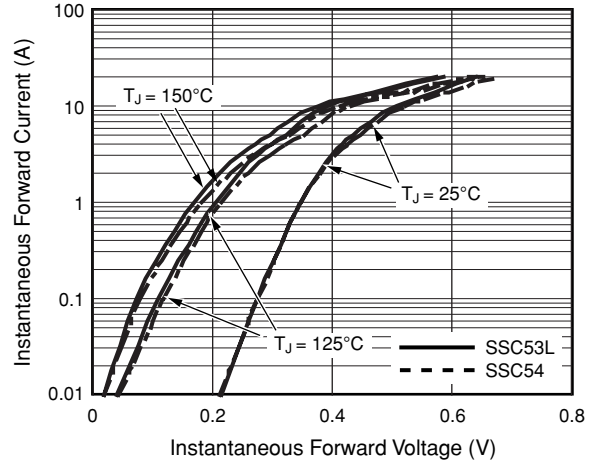


Fig. 4 – Typical Reverse Characteristics

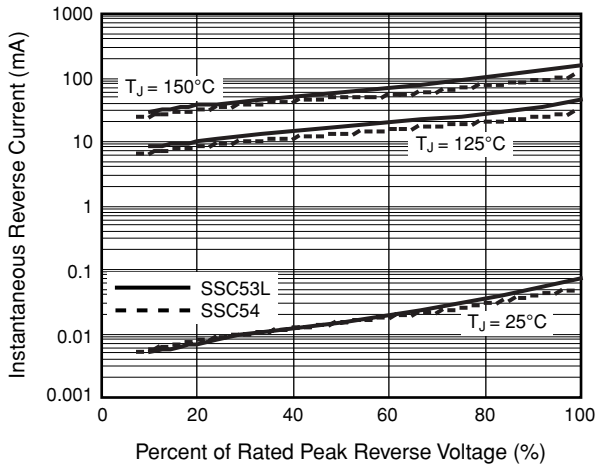


Fig. 5 – Typical Junction Capacitance