Surface Mount Schottky Barrier Rectifier

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-020, LF maximum peak of 260 °C
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, 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-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	4.0 A
V_{RRM}	20 V to 40 V
I_{FSM}	150 A
V_F	0.31 V, 0.35 V
T_J max.	125 °C

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER	SYMBOL	SL42	SL43	SL44	UNIT
Device marking code		SL2	SL3	SL4	
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	V
Maximum RMS voltage	V_{RMS}	14	21	28	V
Maximum DC blocking voltage	V_{DC}	20	30	40	V
Maximum average forward rectified current (1) at T_L (Fig. 1)	$I_{F(AV)}$	4.0 8.0			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	150			A
Operating junction temperature range	T_J	- 55 to + 125			°C
Storage temperature range	T_{STG}	- 55 to + 150			°C

Note:

(1) P.C.B. mounted 0.55 x 0.55" (14 x 14 mm) copper pad areas, T_L = 90 °C

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	SL42	SL43	SL44	UNIT
Maximum instantaneous forward voltage at (1)	I_F = 4.0 A I_F = 4.0 A I_F = 8.0 A I_F = 8.0 A	T_A = 125 °C T_A = 25 °C T_A = 125 °C T_A = 25 °C	V_F	0.31 0.42 0.37 0.47		0.35 0.44 0.41 0.50	V
Maximum DC reverse current at rated DC blocking voltage (1)		T_A = 25 °C T_A = 100 °C	I_R	0.5 35			mA

Note:

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	SL42	SL43	SL44	UNIT
Typical thermal resistance (1)	$R_{\theta JA}$ $R_{\theta JL}$	50 14			°C/W

Note:

(1) P.C.B. mounted 0.55 x 0.55" (14 x 14 mm) copper pad areas, T_L = 90 °C

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SL43-E3/57T	0.235	57T	850	7" diameter plastic tape and reel
SL43-E3/9AT	0.235	9AT	3500	13" diameter plastic tape and reel
SL43HE3/57T (1)	0.235	57T	850	7" diameter plastic tape and reel
SL43HE3/9AT (1)	0.235	9AT	3500	13" diameter plastic tape and reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

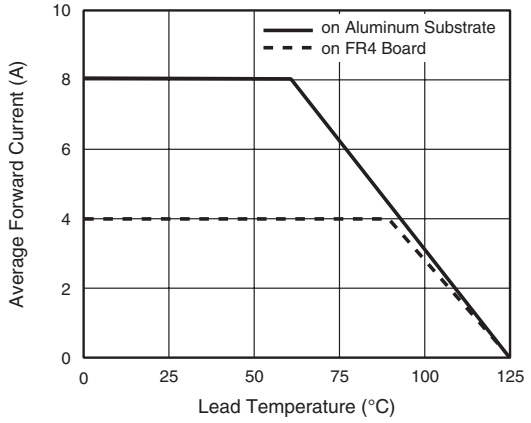

Figure 1. Forward Current Derating Curve

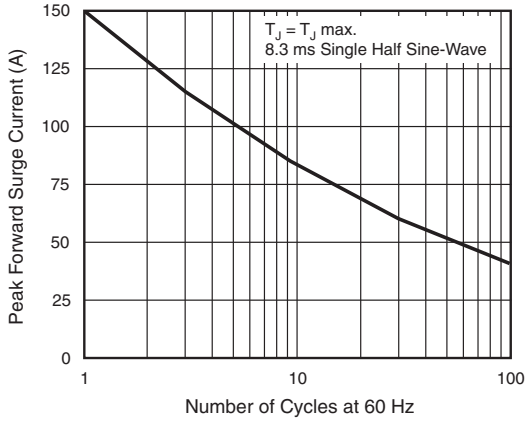

Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

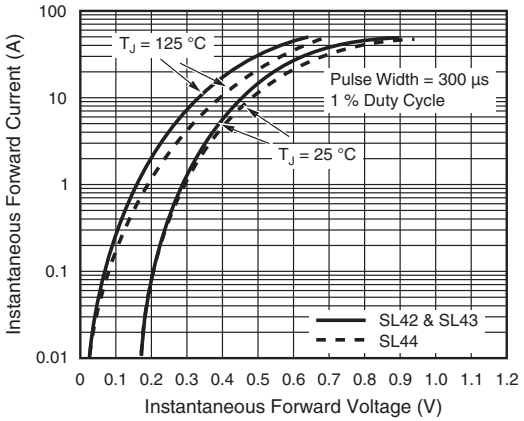

Figure 3. Typical Instantaneous Forward Characteristics

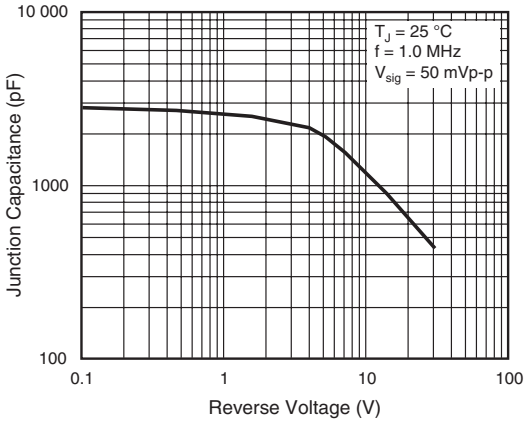

Figure 5. Typical Junction Capacitance

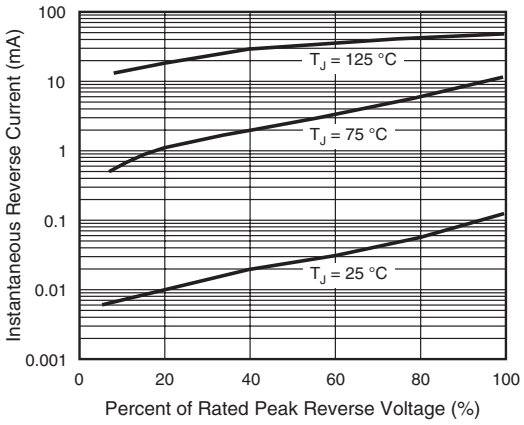

Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)