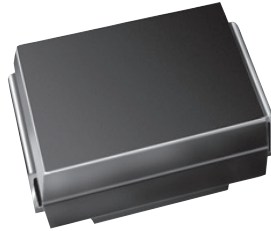


Surface Mount Schottky Barrier Rectifier



DO-214AA (SMB)

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-214AA (SMB)

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	
$I_{F(AV)}$	2.0 A
V_{RRM}	20 V to 30 V
I_{FSM}	100 A
V_F	0.32 V
$T_J \text{ max.}$	125 °C

MAXIMUM RATINGS ($T_A = 25\text{ °C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SL22	SL23	UNIT
Device marking code		SL2	SL3	
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	V
Maximum RMS voltage	V_{RMS}	14	21	V
Maximum DC blocking voltage	V_{DC}	20	30	V
Maximum average forward rectified current at T_L (Fig.1)	$I_{F(AV)}$	2.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100		A
Voltage rate of change (rated V_R)	dV/dt	10 000		V/ μ s
Operating junction temperature range	T_J	- 55 to + 125		°C
Storage temperature range	T_{STG}	- 55 to + 150		°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SL22	SL23	UNIT
Maximum instantaneous forward voltage at ⁽¹⁾	$I_F = 1.0\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$	V_F	0.280	0.395	V
	$I_F = 1.0\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$				
	$I_F = 2.0\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$				
	$I_F = 2.0\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$				
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾			I_R	0.4	10	mA

Note:

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

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SL22	SL23	UNIT
Maximum thermal resistance ⁽¹⁾	$R_{\theta JA}$	75		$^\circ\text{C/W}$
	$R_{\theta JL}$	17		

Note:

(1) P.C.B. mounted 0.55 x 0.55" (14 x 14 mm) copper pad areas, $T_L = 90\text{ }^\circ\text{C}$

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SL23-E3/52T	0.096	52T	750	7" diameter plastic tape and reel
SL23-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SL23HE3/52T ⁽¹⁾	0.096	52T	750	7" diameter plastic tape and reel
SL23HE3/5BT ⁽¹⁾	0.096	5BT	3200	13" diameter plastic tape and reel

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

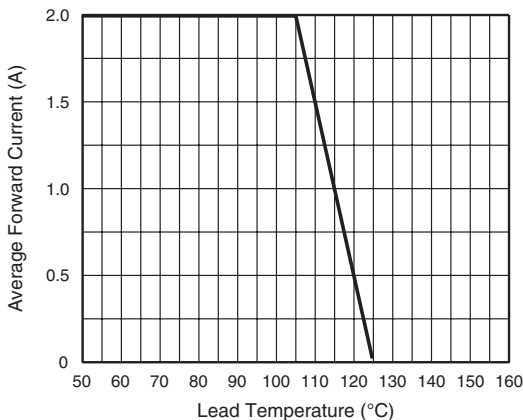


Figure 1. Forward Derating Curve

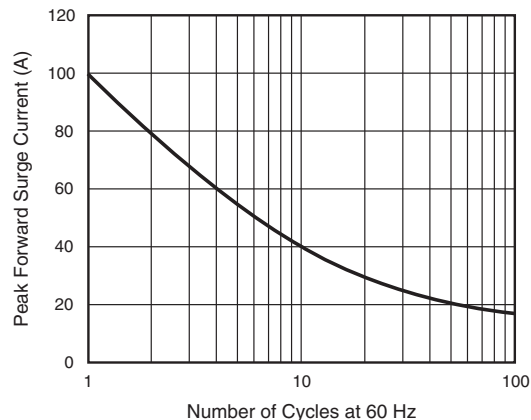


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

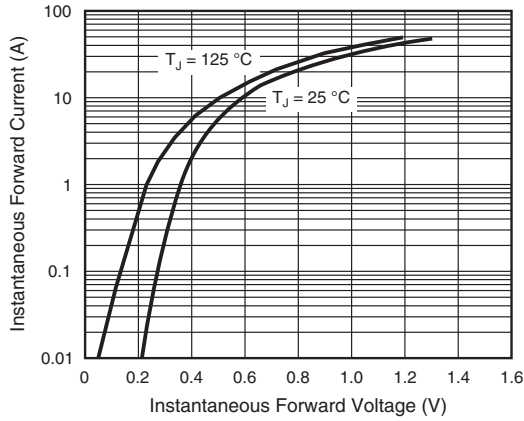


Figure 3. Typical Instantaneous Forward Characteristics

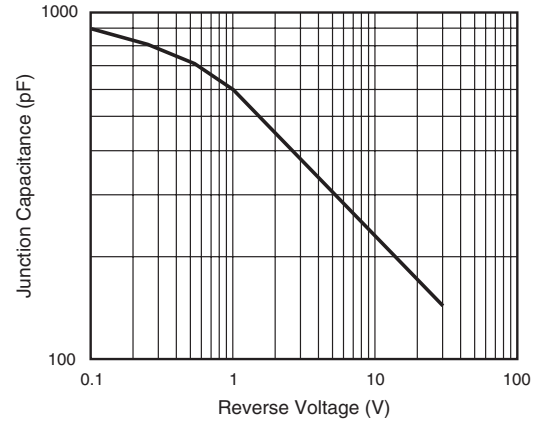


Figure 5. Typical Junction Capacitance

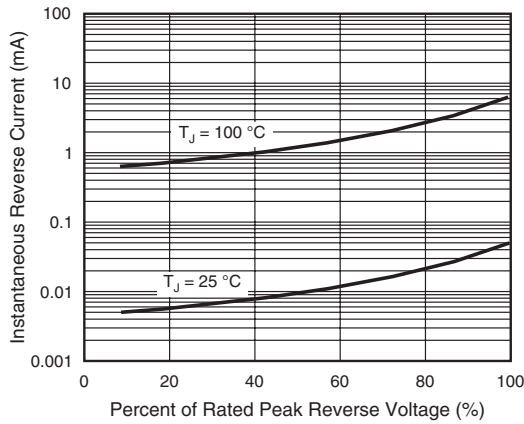
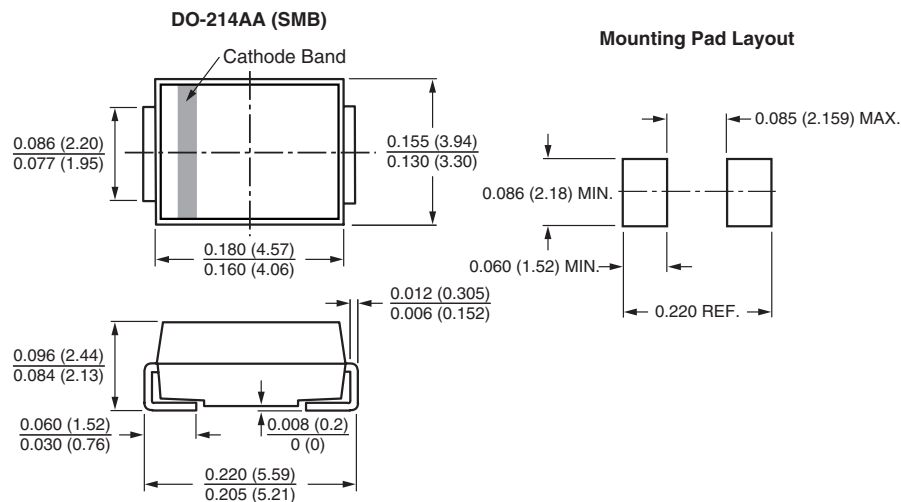


Figure 4. Typical Reverse Current Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)




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