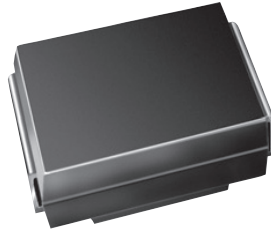


## Surface Mount Schottky Barrier Rectifier



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/ $\mu$ s
Operating junction temperature range	$T_J$	- 55 to + 125		°C
Storage temperature range	$T_{STG}$	- 55 to + 150		°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SL22	SL23	UNIT
Maximum instantaneous forward voltage at <sup>(1)</sup>	$I_F = 1.0\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$	$V_F$	0.280		V
	$I_F = 1.0\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$		0.395		
	$I_F = 2.0\text{ A}$	$T_A = 125\text{ }^\circ\text{C}$		0.320		
	$I_F = 2.0\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$		0.440		
Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup>			$I_R$	0.4		mA
				$T_A = 100\text{ }^\circ\text{C}$	10	

**Note:**

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	SL22	SL23	UNIT
Maximum thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	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,  $T_L = 90\text{ }^\circ\text{C}$

<b>ORDERING INFORMATION</b> (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 <sup>(1)</sup>	0.096	52T	750	7" diameter plastic tape and reel
SL23HE3/5BT <sup>(1)</sup>	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)

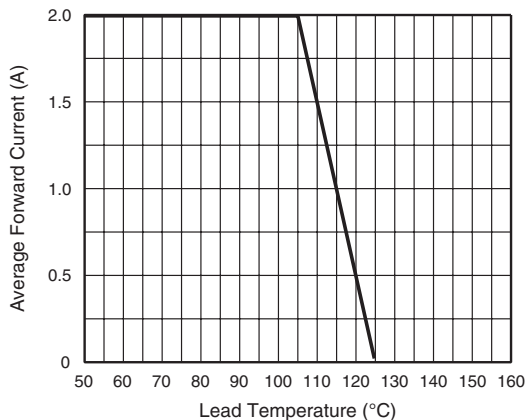


Figure 1. Forward Derating Curve

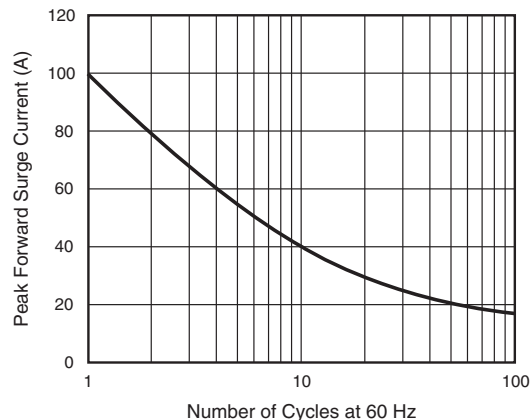


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

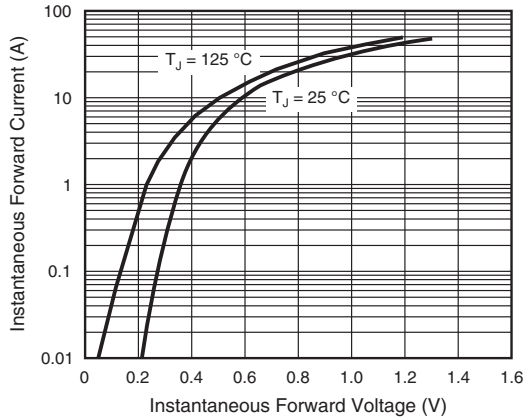


Figure 3. Typical Instantaneous Forward Characteristics

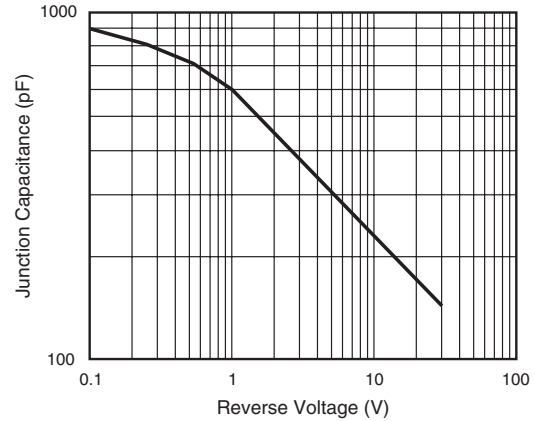


Figure 5. Typical Junction Capacitance

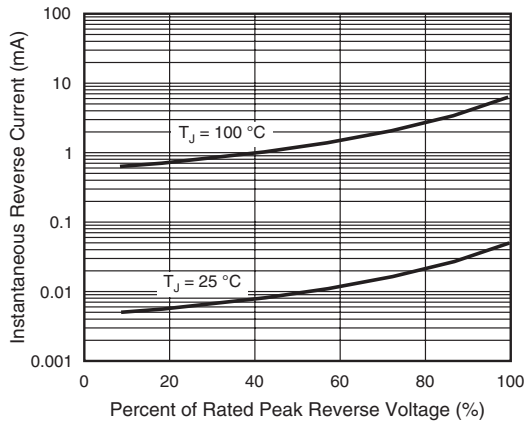
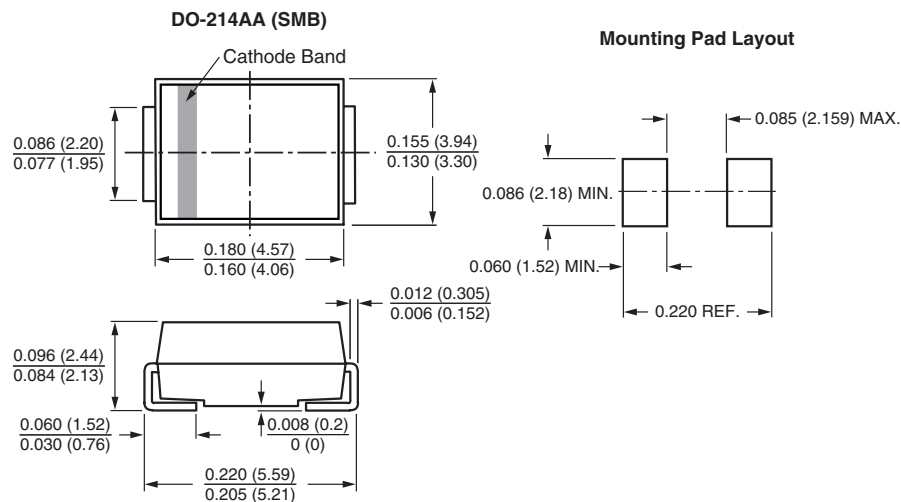


Figure 4. Typical Reverse Current Characteristics

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)




## Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.