

# High Voltage Surface-Mount Schottky Rectifier


**SMB (DO-214AA)**

 Cathode  Anode

## LINKS TO ADDITIONAL RESOURCES


[3D Models](#)

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	1.5 A
$V_{RRM}$	90 V, 100 V
$I_{FSM}$	75 A
$V_F$	0.71 V
$T_J$ max.	150 °C
Package	SMB (DO-214AA)
Circuit configuration	Single

## FEATURES

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available  
- Automotive ordering code: base P/NHE3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications.

## MECHANICAL DATA

### Case: SMB (DO-214AA)

Molding compound meets UL 94 V-0 flammability rating  
Base P/N-E3 - RoHS-compliant, commercial grade  
Base P/NHE3\_X - RoHS-compliant, AEC-Q101 qualified ("\_X" denotes revision code e.g. A, B,.....)

**Terminals:** matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** color band denotes the cathode end

### MAXIMUM RATINGS ( $T_A = 25\text{ °C}$ unless otherwise noted)

PARAMETER	SYMBOL	SS29	SS210	UNIT
Device marking code		S9	S10	
Maximum repetitive peak reverse voltage	$V_{RRM}$	90	100	V
Maximum RMS voltage	$V_{RMS}$	63	70	V
Maximum DC blocking voltage	$V_{DC}$	90	100	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	1.5		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	75		A
Peak repetitive reverse surge current at $t_p = 2\ \mu\text{s}$ , 1 kHz	$I_{RRM}$	1.0		A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000		V/ $\mu\text{s}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150		°C



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SS29	SS210	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	$I_F = 0.1\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	$V_F$	0.43	V	
	$I_F = 1.0\text{ A}$			0.75		
	$I_F = 3.0\text{ A}$			0.95		
	$I_F = 1.5\text{ A}$	$T_A = 100\text{ }^\circ\text{C}$		0.71		
	$I_F = 3.0\text{ A}$			0.85		
Maximum DC reverse current at rated $V_R$ <sup>(1)</sup>			$I_R$	30	$\mu\text{A}$	
				5	mA	

**Note**

<sup>(1)</sup> 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	SS29	SS210	UNIT
Maximum thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	85	25	$^\circ\text{C}/\text{W}$
	$R_{\theta JL}$			

**Note**

<sup>(1)</sup> PCB mounted with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS210-E3/52T	0.096	52T	750	7" diameter plastic tape and reel
SS210-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SS210HE3_A/H <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel
SS210HE3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel

**Note**

<sup>(1)</sup> AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

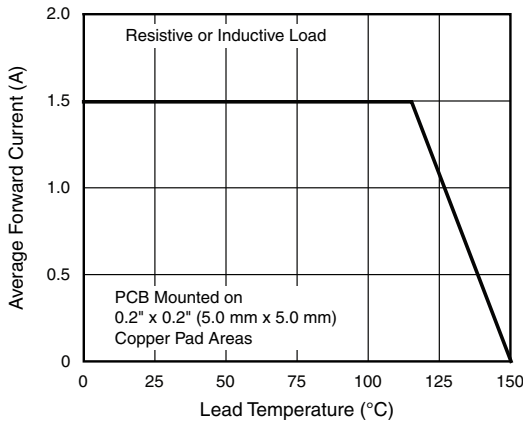


Fig. 1 - Forward Current Derating Curve

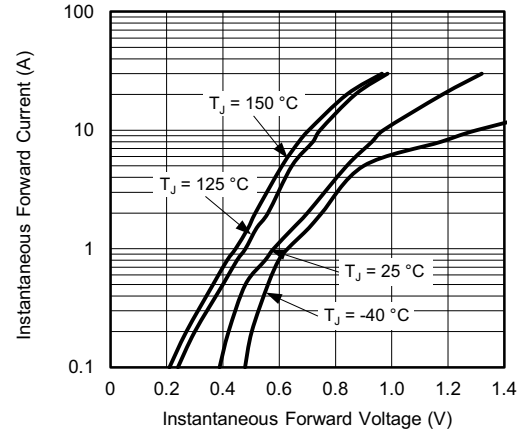


Fig. 4 - Typical Instantaneous Forward Characteristics

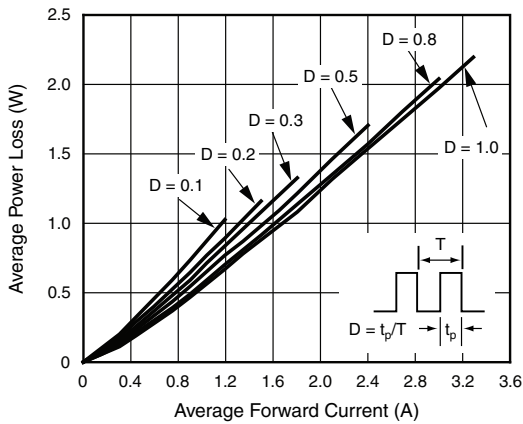


Fig. 2 - Forward Power Loss Characteristics

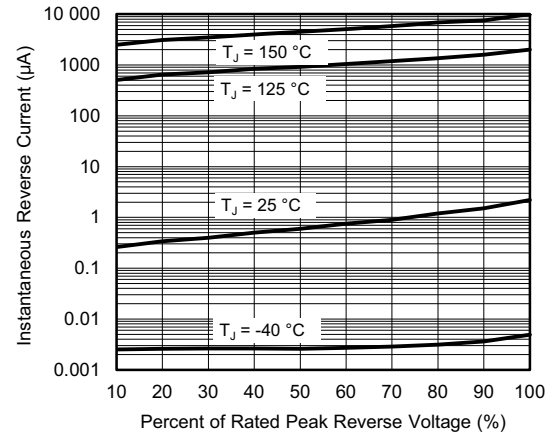


Fig. 5 - Typical Reverse Leakage Characteristics

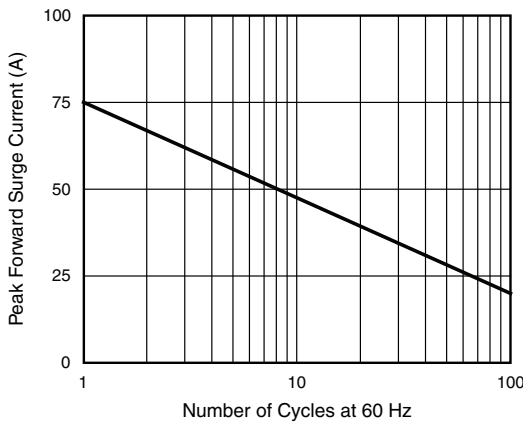


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

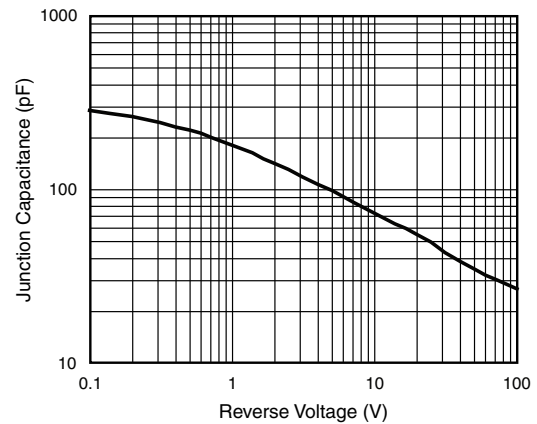
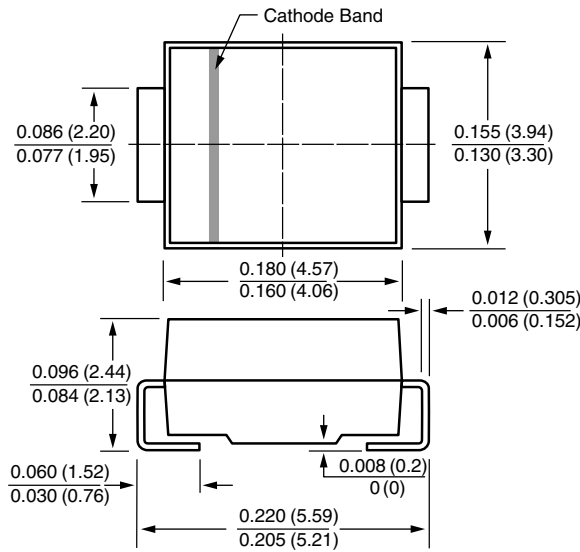


Fig. 6 - Typical Junction Capacitance

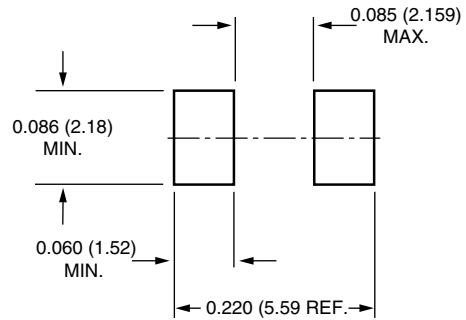


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMB (DO-214AA)



Mounting Pad Layout





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