

## High Voltage Surface Mount Schottky Rectifier


**DO-214AA (SMB)**

### 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

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	DO-214AA (SMB)
Diode variations	Single

### TYPICAL APPLICATIONS

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

### MECHANICAL DATA

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

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

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 ( $T_A = 25$ °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 $t_p = 2$ µs, 1 kHz	$I_{RRM}$	1.0		A
Voltage rate of change (rated $V_R$ )	$dV/dt$	10 000		V/µs
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150		°C

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

**Note**

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

THERMAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	SS29	SS210	UNIT	
Maximum thermal resistance <sup>(1)</sup>	$R_{\theta JA}$	85	25	$^\circ\text{C/W}$	
	$R_{\theta JL}$	25	85		

**Note**

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

ORDERING INFORMATION (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
SS210HE3/52T <sup>(1)</sup>	0.096	52T	750	7" diameter plastic tape and reel
SS210HE3/5BT <sup>(1)</sup>	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

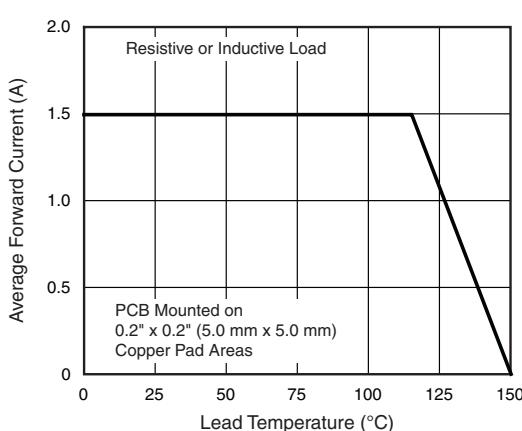
**RATINGS AND CHARACTERISTICS CURVES ( $T_A = 25^\circ\text{C}$  unless otherwise noted)**


Fig. 1 - Forward Current Derating Curve

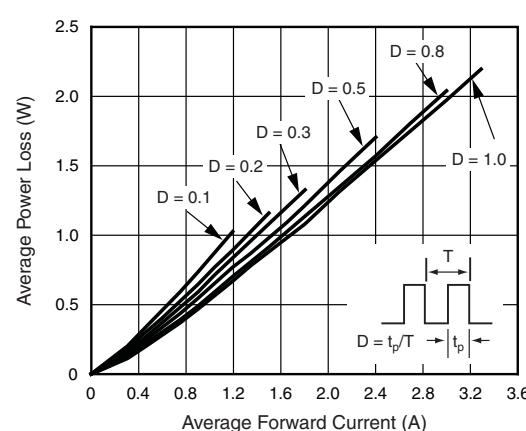


Fig. 2 - Forward Power Loss Characteristics

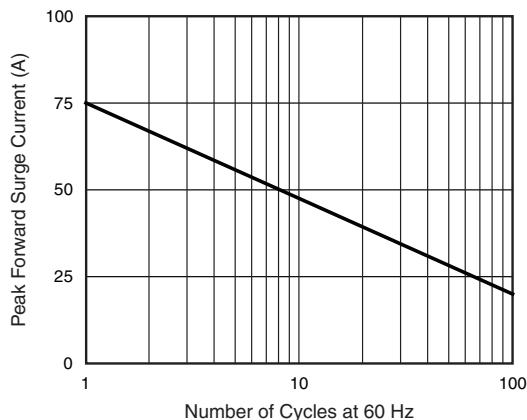


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

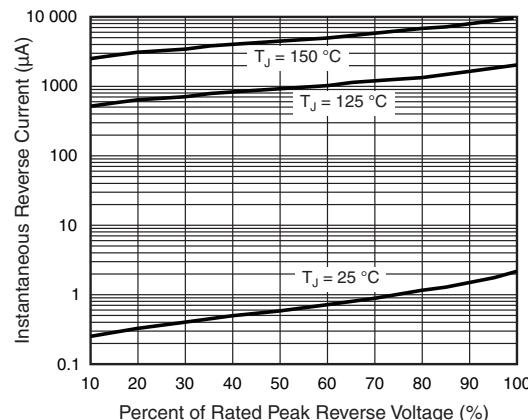


Fig. 5 - Typical Reverse Leakage Characteristics

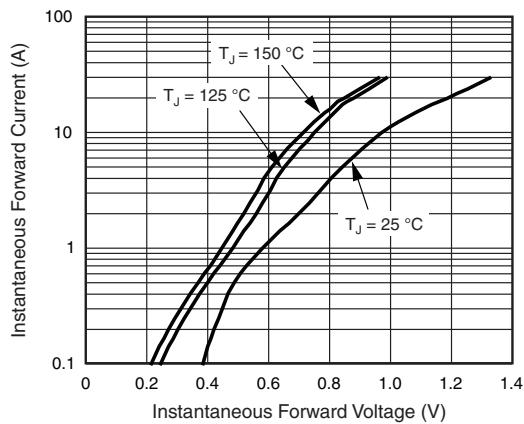


Fig. 4 - Typical Instantaneous Forward Characteristics

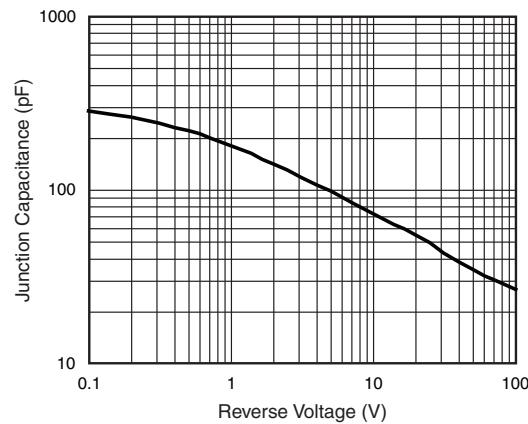
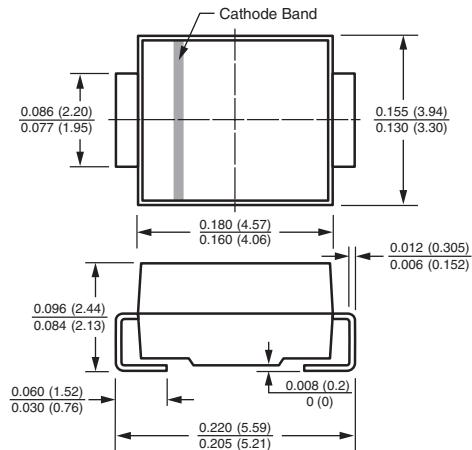


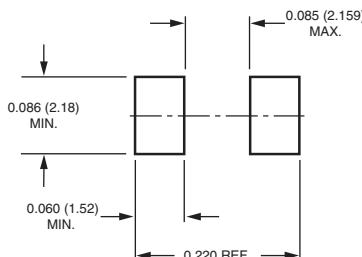
Fig. 6 - Typical Junction Capacitance

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout



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