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## Vishay General Semiconductor

AUTOMOTIVE GRADE

RoHS

HALOGEN

FREE

## **Surface-Mount Schottky Barrier Rectifier**



**SMB (DO-214AA)** 



#### **LINKS TO ADDITIONAL RESOURCES**



PRIMARY CHARACTERISTICS						
I <sub>F(AV)</sub>	2.0 A					
$V_{RRM}$	20 V, 30 V, 40 V, 50 V, 60 V					
I <sub>FSM</sub>	75 A					
V <sub>F</sub>	0.50 V, 0.70 V					
T <sub>J</sub> 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 or P/NHM3
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

#### **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/N-M3 - halogen-free, RoHS-compliant, commercial

grade

Base P/NHE3\_X - RoHS-compliant and AEC-Q101 qualified Base P/NHM3\_X - halogen-free, RoHS-compliant, and 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, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT
Device marking code		S2	S3	S4	S5	S6	
Maximum repetitive peak reverse voltage	$V_{RRM}$	20	30	40	50	60	V
Maximum RMS voltage	$V_{RMS}$	14	21	28	35	42	V
Maximum DC blocking voltage	$V_{DC}$	20	30	40	50	60	V
Max. average forward rectified current at T <sub>L</sub> (fig. 1)	I <sub>F(AV)</sub>	2.0					Α
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	75					А
Non-repetitive avalanche energy at $T_A = 25$ °C, $I_{AS} = 2.0$ A, $L = 10$ mH	E <sub>AS</sub>	20					mJ
Electrostatic discharge capacitor voltage Human body model: C = 100 pF, R = 1.5 k $\Omega$	V <sub>C</sub>	8.0					kV
Voltage rate of change (rated V <sub>R</sub> )	dV/dt	10 000					V/µs
Operating junction temperature range	TJ	-65 to +150				°C	
Storage temperature range	T <sub>STG</sub>	-65 to +150				°C	

# SS22, SS23, SS24, SS25, SS26

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT
Maximum instantaneous forward voltage (1)	2.0 A	$V_{F}$	0.5		0.7		V	
Maximum DC reverse current at rated DC	T <sub>A</sub> = 25 °C		0.4		0.4		mA	
blocking voltage (1)	T <sub>A</sub> = 100 °C	IR	10					] IIIA

#### Note

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

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL SS22 SS23 SS24 SS25 SS26 U					UNIT	
Typical thermal resistance (1)	$R_{\theta JA}$	75					°C/W
Typical trieffial resistance (*)		17					C/VV

#### Note

 $^{(1)}\,$  PCB mounted with 0.55" x 0.55" (14 mm x 14 mm) copper pad areas

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
SS26-E3/52T	0.096	52T	750	7" diameter plastic tape and reel			
SS26-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel			
SS26HE3_A/H (1)	0.096	Н	750	7" diameter plastic tape and reel			
SS26HE3_A/I (1)	0.096	I	3200	13" diameter plastic tape and reel			
SS26-M3/52T	0.096	52T	750	7" diameter plastic tape and reel			
SS26-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel			
SS26HM3_A/H (1)	0.096	Н	750	7" diameter plastic tape and reel			
SS26HM3_A/I (1)	0.096	I	3200	13" diameter plastic tape and reel			

### Note

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

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### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

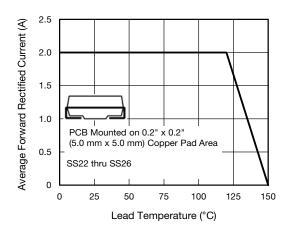


Fig. 1 - Forward Current Derating Curve

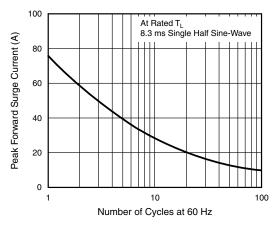


Fig. 2 - Maximum Non-Repetitive Surge Current

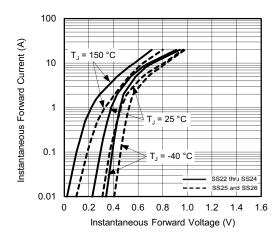


Fig. 3 - Typical Instantaneous Forward Characteristics

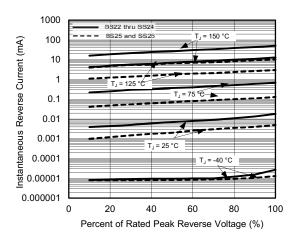


Fig. 4 - Typical Reverse Current Characteristics

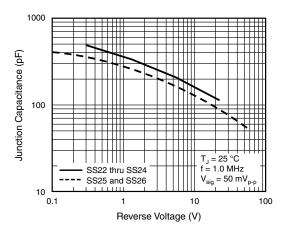


Fig. 5 - Typical Junction Capacitance

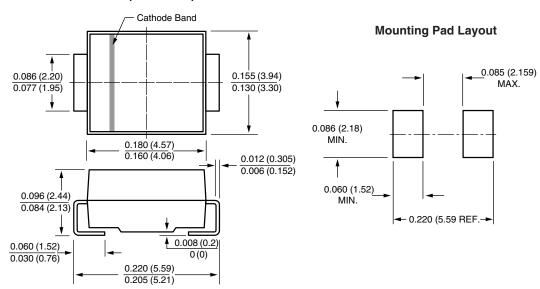


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### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

### **SMB (DO-214AA)**





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