

## Surface Mount Schottky Barrier Rectifier


**DO-214AA (SMB)**

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2.0 A
$V_{RRM}$	20 V to 60 V
$I_{FSM}$	75 A
$V_F$	0.50 V, 0.70 V
$T_J$ max.	125 °C, 150 °C

### TYPICAL APPLICATIONS

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

### 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
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

### 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

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

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

**Polarity:** Color band denotes cathode end

### MAXIMUM RATINGS ( $T_A = 25$ °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 <sub>RRM</sub>	20	30	40	50	60	V
Maximum RMS voltage	V <sub>RMS</sub>	14	21	28	35	42	V
Maximum DC blocking voltage	V <sub>DC</sub>	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					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	75					A
Non-repetitive avalanche energy at T <sub>A</sub> = 25 °C, I <sub>AS</sub> = 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 kΩ	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	T <sub>J</sub>	- 65 to + 125			- 65 to + 150		°C
Storage temperature range	T <sub>STG</sub>	- 65 to + 150					°C

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

PARAMETER	TEST CONDITIONS	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	2.0 A	V <sub>F</sub>	0.5			0.7		V
Maximum DC reverse current at rated DC blocking voltage <sup>(1)</sup>	T <sub>A</sub> = 25 °C	I <sub>R</sub>	0.4					mA
	T <sub>A</sub> = 100 °C		10					

**Note**

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

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

PARAMETER	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	75					°C/W
	R <sub>θJL</sub>	17					

**Note**

<sup>(1)</sup> P.C.B. 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
SS24-E3/52T	0.096	52T	750	7" diameter plastic tape and reel
SS24-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SS24HE3/52T <sup>(1)</sup>	0.096	52T	750	7" diameter plastic tape and reel
SS24HE3/5BT <sup>(1)</sup>	0.096	5BT	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)

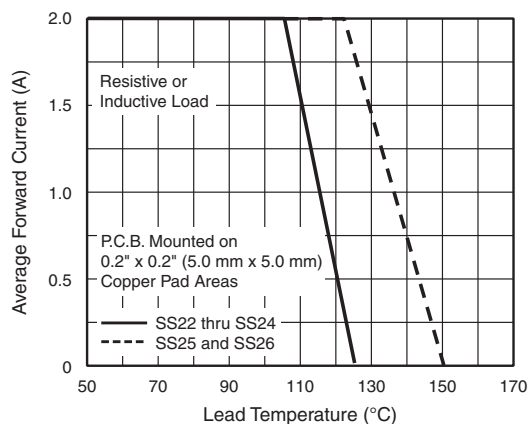


Fig. 1 - Forward Current Derating Curve

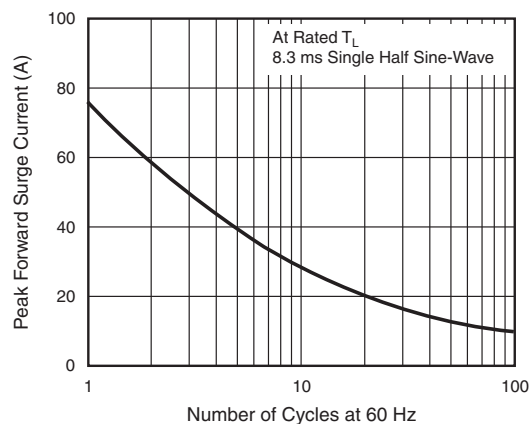


Fig. 2 - Maximum Non-Repetitive Surge Current

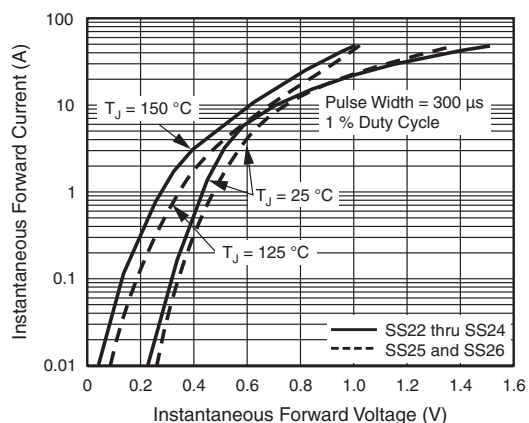


Fig. 3 - Typical Instantaneous Forward Characteristics

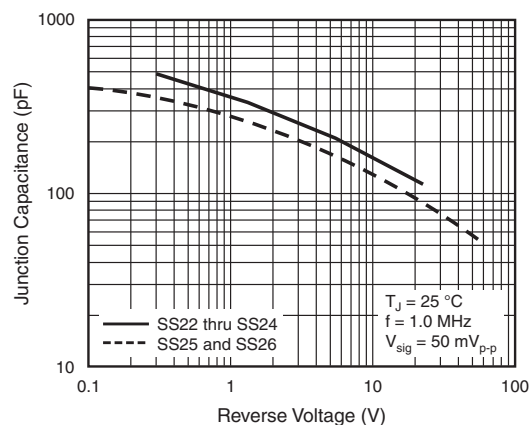


Fig. 5 - Typical Junction Capacitance

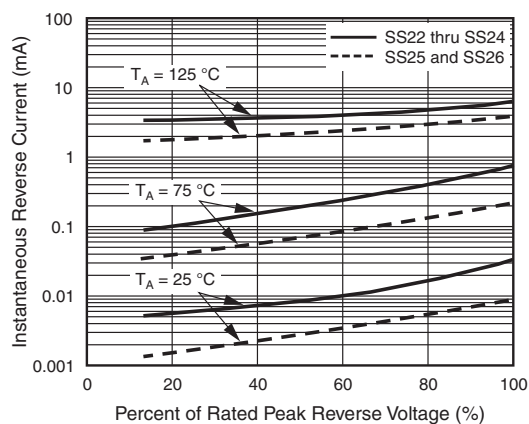
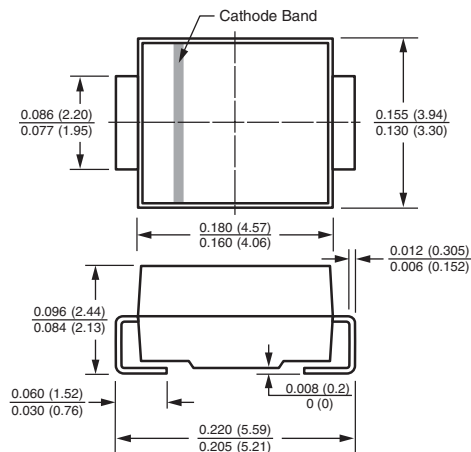


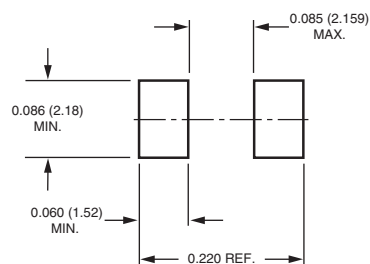
Fig. 4 - Typical Reverse Current Characteristics

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-214AA (SMB)



### Mounting Pad Layout





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