

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


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 _{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 _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}	75					A
Non-repetitive avalanche energy at T _A = 25 °C, I _{AS} = 2.0 A, L = 10 mH	E _{AS}	20					mJ
Electrostatic discharge capacitor voltage Human body model: C = 100 pF, R = 1.5 kΩ	V _C	8.0					kV
Voltage rate of change (rated V _R)	dV/dt	10 000					V/μs
Operating junction temperature range	T _J	- 65 to + 125			- 65 to + 150		°C
Storage temperature range	T _{STG}	- 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 ⁽¹⁾	2.0 A	V _F	0.5			0.7		V
Maximum DC reverse current at rated DC blocking voltage ⁽¹⁾	T _A = 25 °C	I _R	0.4					mA
	T _A = 100 °C		10					

Note

⁽¹⁾ Pulse test: 300 μs 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 ⁽¹⁾	R _{θJA}	75					°C/W
	R _{θJL}	17					

Note

⁽¹⁾ 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 ⁽¹⁾	0.096	52T	750	7" diameter plastic tape and reel
SS24HE3/5BT ⁽¹⁾	0.096	5BT	3200	13" diameter plastic tape and reel

Note

⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

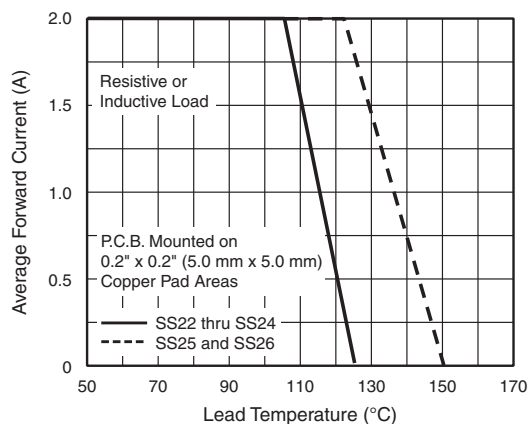


Fig. 1 - Forward Current Derating Curve

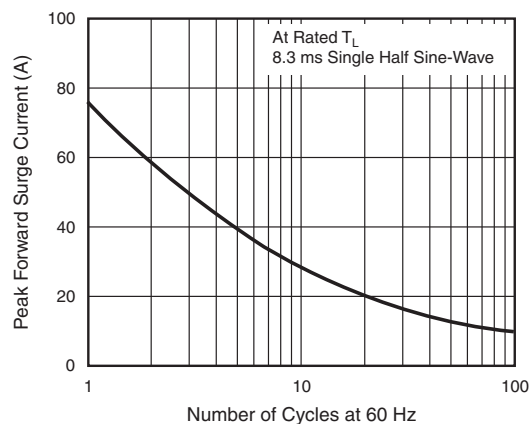


Fig. 2 - Maximum Non-Repetitive Surge Current

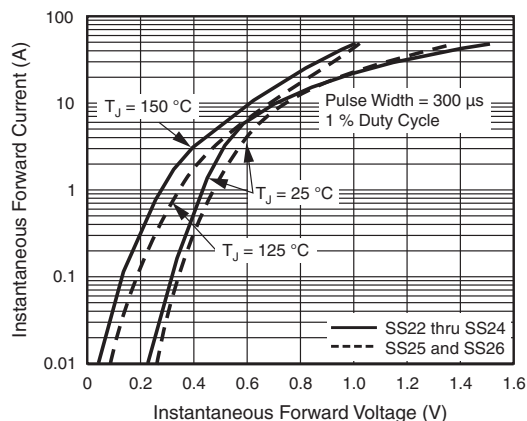


Fig. 3 - Typical Instantaneous Forward Characteristics

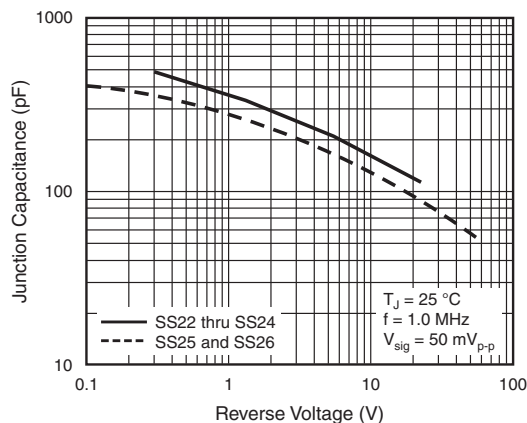


Fig. 5 - Typical Junction Capacitance

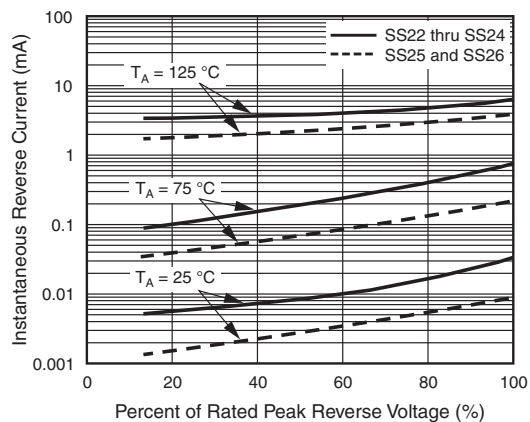
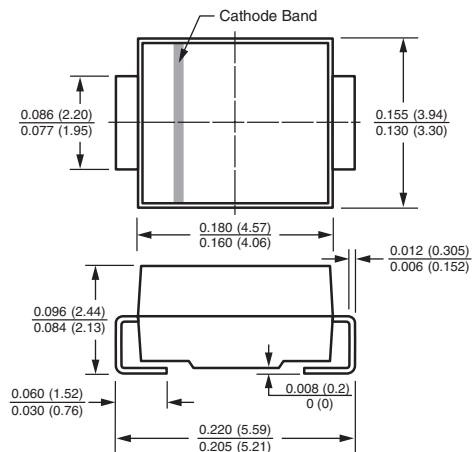


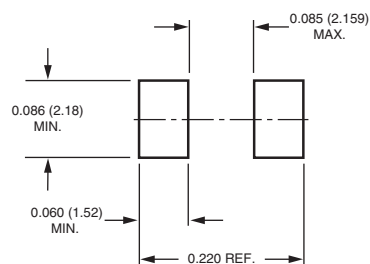
Fig. 4 - Typical Reverse Current Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout





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