

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
- Material categorization: For definitions of compliance please see 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: 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 the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.5 A
V_{RRM}	90 V, 100 V
I_{FSM}	75 A
V_F	0.71 V
$T_J \text{ max.}$	150 °C

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 $t_p = 2\text{ }\mu\text{s}$, 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 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SS29	SS210	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	I _F = 0.1 A	T _A = 25 °C	V _F	0.43		V
	I _F = 1.0 A			0.75		
	I _F = 3.0 A			0.95		
	I _F = 1.5 A	T _A = 100 °C		0.71		
	I _F = 3.0 A			0.85		
Maximum DC reverse current at rated V _R ⁽¹⁾		T _A = 25 °C	I _R	30		μA
		T _A = 100 °C		5		mA

Note
⁽¹⁾ Pulse test: 300 μs pulse width, 1 % duty cycle

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS29	SS210	UNIT
Maximum thermal resistance ⁽¹⁾	R _{θJA}	85		°C/W
	R _{θJL}	25		

Note
⁽¹⁾ P.C.B. 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 ⁽¹⁾	0.096	52T	750	7" diameter plastic tape and reel
SS210HE3/5BT ⁽¹⁾	0.096	5BT	3200	13" diameter plastic tape and reel

Note
⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

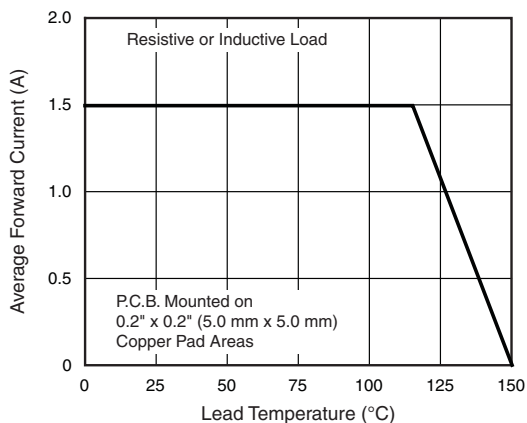
($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Forward Current Derating Curve

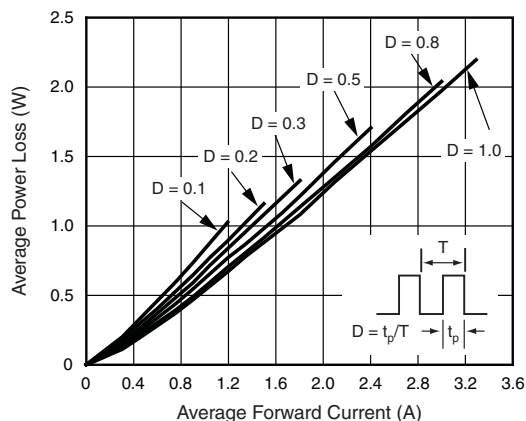


Fig. 2 - Forward Power Loss Characteristics

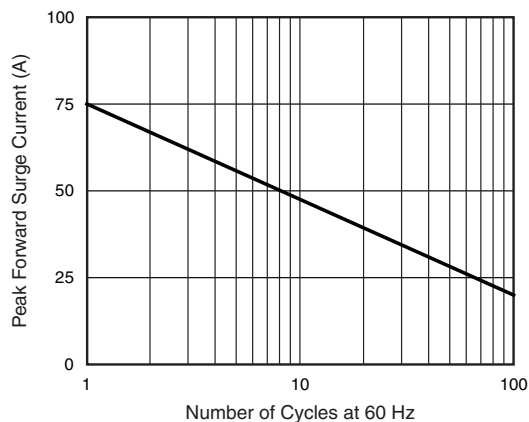


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

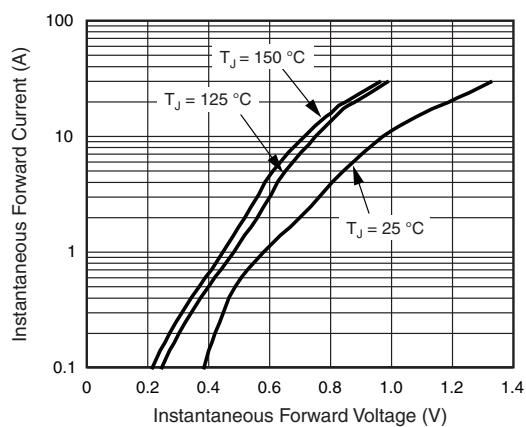


Fig. 4 - Typical Instantaneous Forward Characteristics

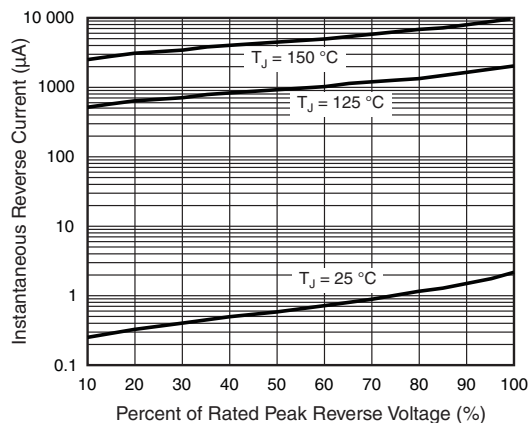


Fig. 5 - Typical Reverse Leakage Characteristics

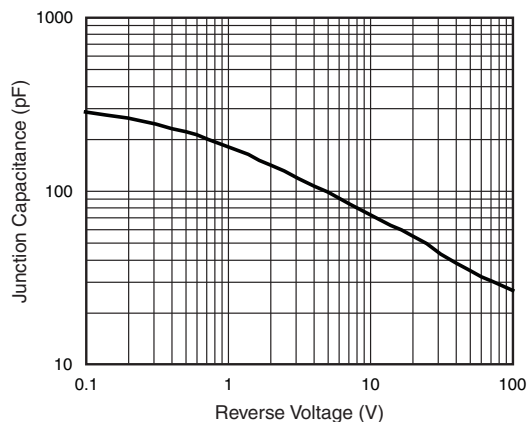
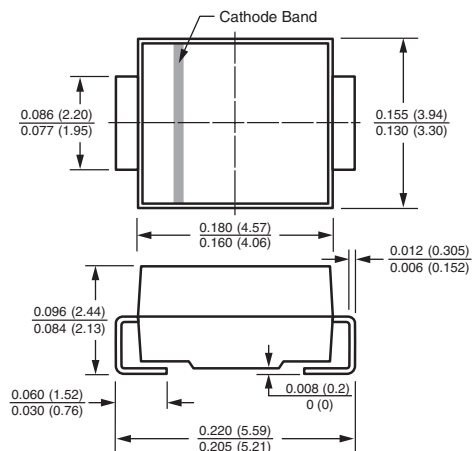


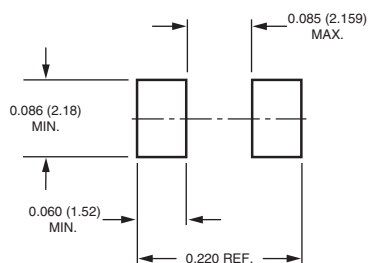
Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout





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Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9