

High Voltage Surface Mount Schottky Rectifier


DO-214AA (SMB)

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

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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters, and polarity protection applications.

MECHANICAL DATA

Case: DO-214AA (SMB)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

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	T _A = 25 °C		0.75		
	I _F = 3.0 A	T _A = 25 °C		0.95		
	I _F = 1.5 A	T _A = 100 °C		0.71		
	I _F = 3.0 A	T _A = 100 °C		0.85		
Maximum DC reverse current at rated V _R ⁽¹⁾		T _A = 25 °C T _A = 100 °C	I _R	30 5		μA 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} R _{θJL}	85 25		°C/W

Note:

(1) P.C.B. mounted with 0.2 x 0.2" (5.0 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) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

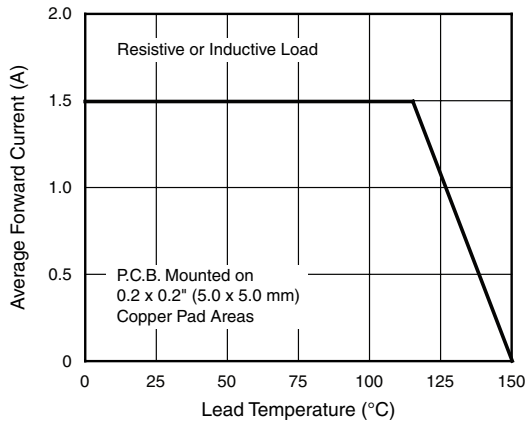


Figure 1. Forward Current Derating Curve

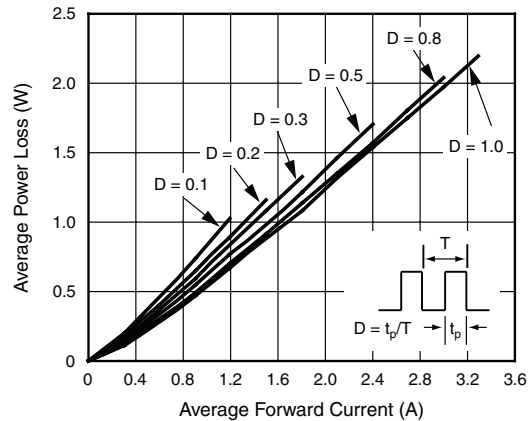


Figure 2. Forward Power Loss Characteristics

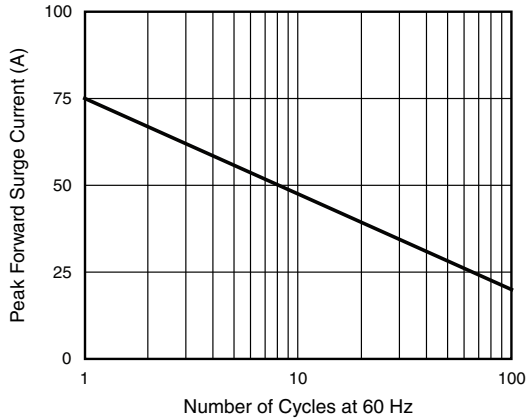


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

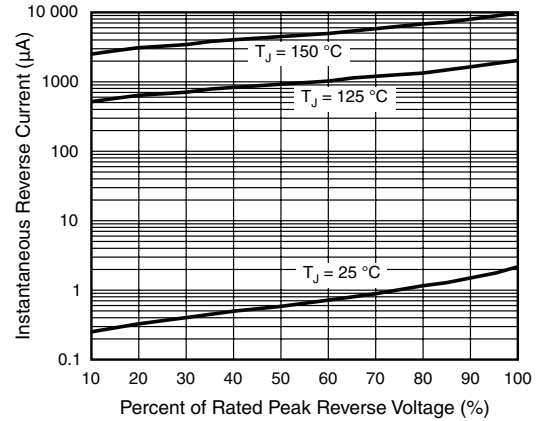


Figure 5. Typical Reverse Leakage Characteristics

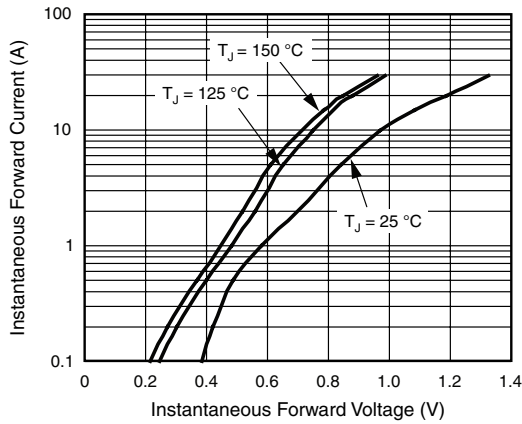


Figure 4. Typical Instantaneous Forward Characteristics

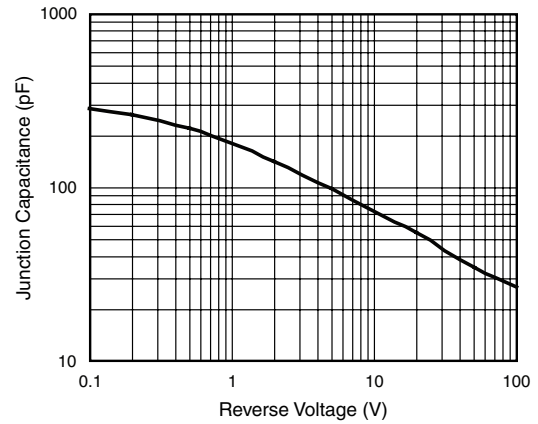
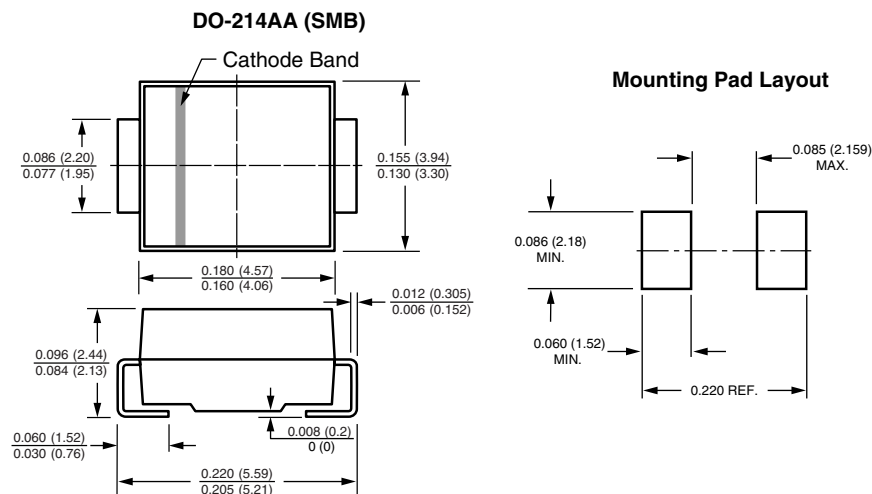


Figure 6. Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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