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Vishay Semiconductor/Diodes Division
SS210-E3/5BT

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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 available
  - Automotive ordering code: base P/NHE3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

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 max.	150 °C
Package	DO-214AA (SMB)
Diode variations	Single

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
Base P/NHE3_X - RoHS-compliant, 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 suffix meets JESD 201 class 2 whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes the cathode end

MAXIMUM RATINGS (T_A = 25 °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 µs, 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)	$R_{\theta JA}$	85		°C/W
	$R_{\theta JL}$	25		

Note
(1) PCB 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
SS210HE3_A/H (1)	0.096	H	750	7" diameter plastic tape and reel
SS210HE3_A/I (1)	0.096	I	3200	13" diameter plastic tape and reel

Note
(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

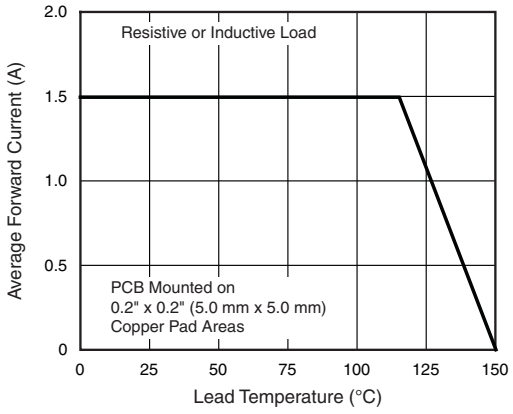


Fig. 1 - Forward Current Derating Curve

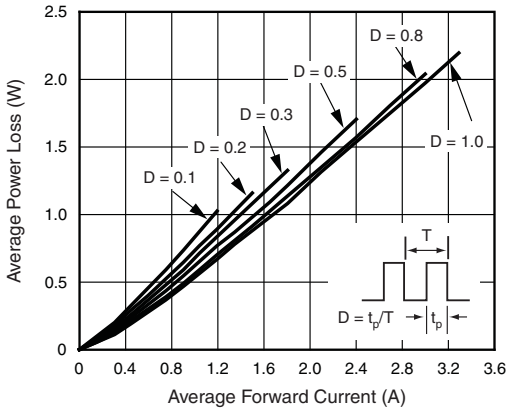


Fig. 2 - Forward Power Loss Characteristics

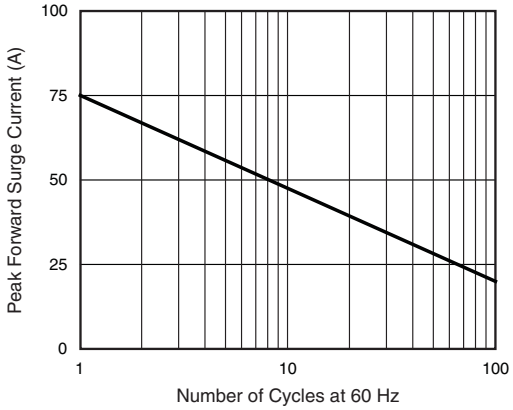


Fig. 3 - Maximum Non-Repetitive Peak Forward Surge Current

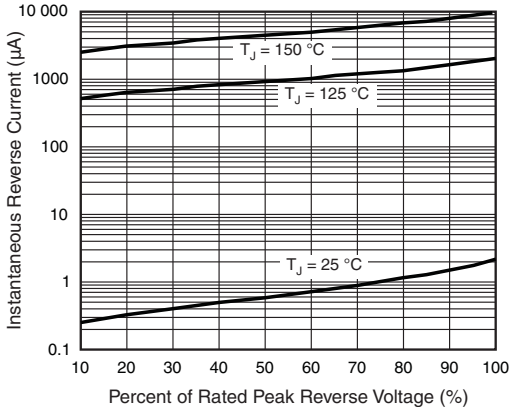


Fig. 5 - Typical Reverse Leakage Characteristics

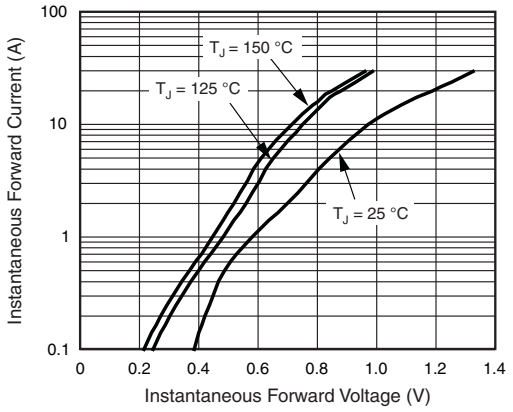


Fig. 4 - Typical Instantaneous Forward Characteristics

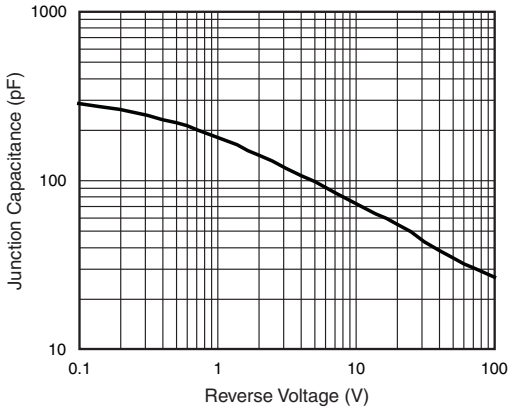
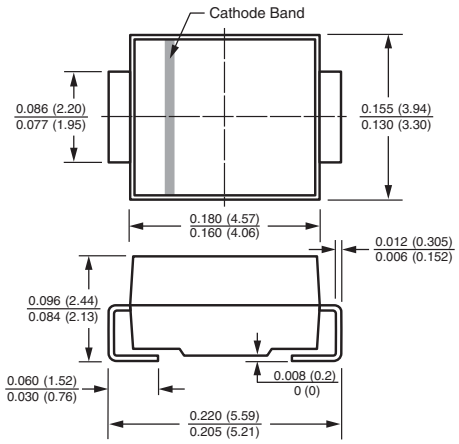


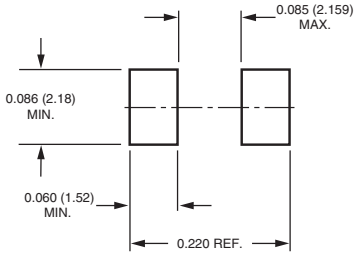
Fig. 6 - Typical Junction Capacitance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout



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