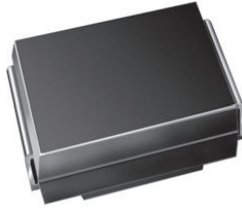


# High Voltage Surface Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



**SMB (DO-214AA)**



**RoHS**  
COMPLIANT  
**HALOGEN**  
**FREE**  
Available

## FEATURES

- Low profile package
- Guardring for overvoltage protection
- Ideal for automated placement
- Low power losses, high efficiency
- Low forward voltage drop
- Low leakage current
- 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 or P/NHM3
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

## TYPICAL APPLICATIONS

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

## MECHANICAL DATA

**Case:** SMB (DO-214AA)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/N-M3 - halogen-free, RoHS-compliant, commercial grade

Base P/NHE3\_X - RoHS-compliant and AEC-Q101 qualified

Base P/NHM3\_X - halogen-free, RoHS-compliant, and 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, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

**Polarity:** color band denotes the cathode end

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
$V_{RRM}$	90 V, 100 V
$I_{FSM}$	75 A
$V_F$	0.65 V
$I_R$	10 $\mu$ A
$T_J$ max.	175 °C
Package	SMB (DO-214AA)
Diode variations	Single

MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	SS2H9	SS2H10	UNIT
Device marking code		MS9	MS10	
Maximum repetitive peak reverse voltage	$V_{RRM}$	90	100	V
Working peak reverse voltage	$V_{RWM}$	90	100	V
Maximum DC blocking voltage	$V_{DC}$	90	100	V
Maximum average forward rectified current at: $T_L = 130$ °C	$I_{F(AV)}$	2.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	75		A
Peak repetitive reverse surge current at $t_p = 2.0$ $\mu$ s, 1 kHz	$I_{RRM}$	1.0		A
Voltage rate of change (rated $V_R$ )	dV/dt	10 000		V/ $\mu$ s
Operating junction and storage temperature range	$T_J, T_{STG}$	-65 to +175		°C



ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	SS2H9	SS2H10	UNIT
Maximum instantaneous forward voltage <sup>(1)</sup>	I <sub>F</sub> = 2.0 A	T <sub>J</sub> = 25 °C	V <sub>F</sub>	0.79		V
		T <sub>J</sub> = 125 °C		0.65		
Maximum reverse current at rated V <sub>R</sub> <sup>(2)</sup>		T <sub>J</sub> = 25 °C	I <sub>R</sub>	10		μA
		T <sub>J</sub> = 125 °C		4		mA

**Notes**

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
- (2) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS2H9	SS2H10	UNIT
Maximum thermal resistance junction to lead T <sub>L</sub> = 25 °C <sup>(1)</sup>	R <sub>θJA</sub>	80		°C/W
	R <sub>θJL</sub>	25		

**Note**

- (1) Units mounted on PCB 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
SS2H10-E3/52T	0.096	52T	750	7" diameter plastic tape and reel
SS2H10-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SS2H10HE3_A/H <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel
SS2H10HE3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel
SS2H10-M3/52T	0.096	52T	750	7" diameter plastic tape and reel
SS2H10-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SS2H10HM3_A/H <sup>(1)</sup>	0.096	H	750	7" diameter plastic tape and reel
SS2H10HM3_A/I <sup>(1)</sup>	0.096	I	3200	13" diameter plastic tape and reel

**Note**

- (1) AEC-Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)**

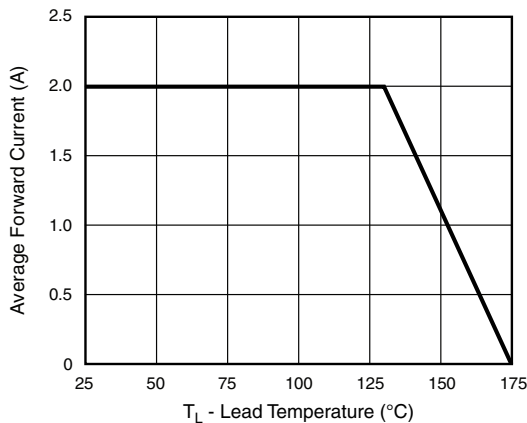


Fig. 1 - Forward Current Derating Curve

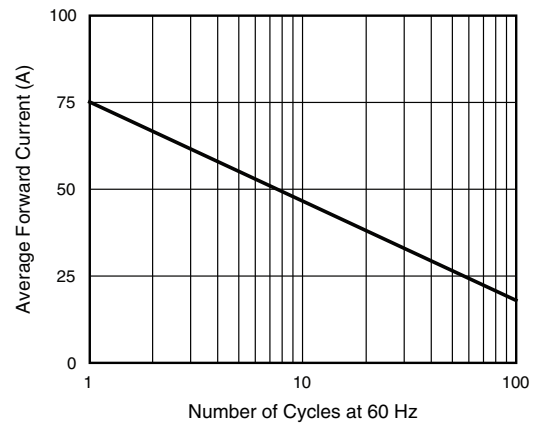


Fig. 2 - Max Non-Repetitive Peak Forward Surge Current

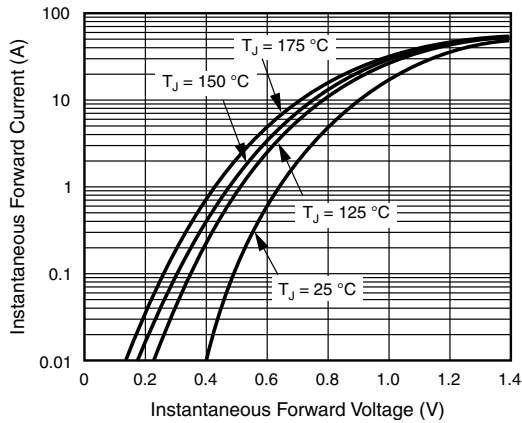


Fig. 3 - Typical Instantaneous Forward Characteristics

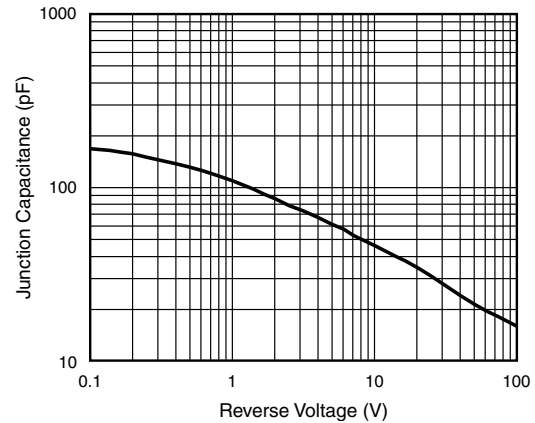


Fig. 5 - Typical Junction Capacitance

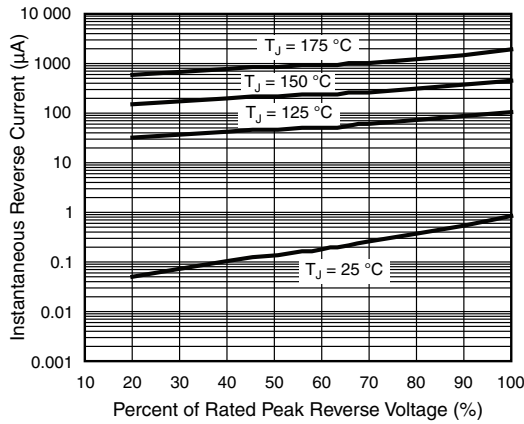


Fig. 4 - Typical Reverse Characteristics

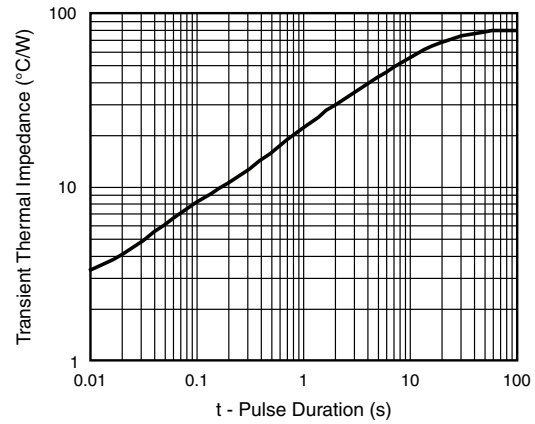
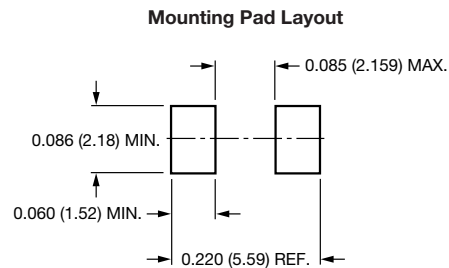
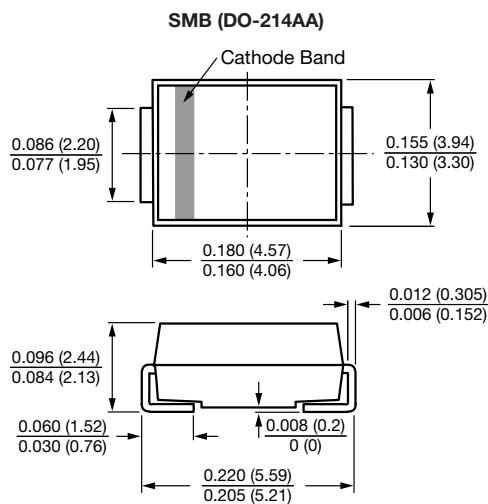


Fig. 6 - Typical Transient Thermal Impedance Per Leg

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)





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