

High Voltage Surface Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance



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SMB (DO-214AA)

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 µA				
T _J max.	175 °C				
Package	SMB (DO-214AA)				
Diode variations	Single				

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 $^\circ\mathrm{C}$
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHE3 or P/NHM3
- Material categorization: for definitions of compliance please see <u>www.vishay.com/doc?99912</u>

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

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER	SYMBOL SS2H9			UNIT	
Device marking code		MS9			
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: $T_L = 130 ^{\circ}\text{C}$	I _{F(AV)}	2.0		A	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	75		А	
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/µs	
Operating junction and storage temperature range	TJ, T _{STG}	-65 to	°C		

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RoHS COMPLIANT HALOGEN



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ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted)							
PARAMETER	TEST CONDITIONS		SYMBOL	SS2H9	SS2H10	UNIT	
Maximum instantaneous forward voltage (1)	I _F = 2.0 A	T _J = 25 °C	V _F	0.79 0.65		V	
		T _J = 125 °C					
Maximum reverse current at rated $V_{\text{R}}^{(2)}$		T _J = 25 °C	- I _R	10		0	μA
	-	T _J = 125 °C		2	1	mA	

Notes

 $^{(1)}\,$ Pulse test: 300 μs pulse width, 1 % duty cycle

⁽²⁾ Pulse test: pulse width \leq 40 ms

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	SS2H9	SS2H10	UNIT		
Maximum thermal resistance junction to lead $T_L = 25 \ ^{\circ}C^{(1)}$	R _{θJA}	80		°C/W		
	$R_{ extsf{ heta}JL}$	25				

Note

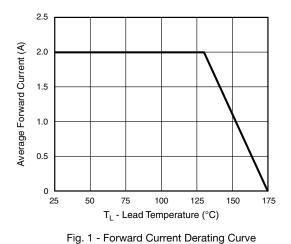
⁽¹⁾ Units mounted on PCB with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas

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 (1)	0.096	Н	750	7" diameter plastic tape and reel		
SS2H10HE3_A/I (1)	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 ⁽¹⁾	0.096	Н	750	7" diameter plastic tape and reel		
SS2H10HM3_A/I (1)	0.096		3200	13" diameter plastic tape and reel		

Note

(1) AEC-Q101 qualified

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



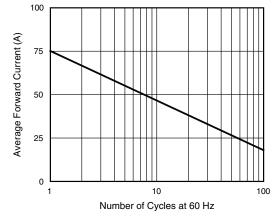
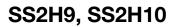


Fig. 2 - Max Non-Repetitive Peak Forward Surge Current

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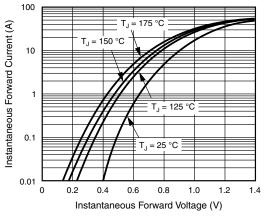


Fig. 3 - Typical Instanteous Forward Characteristics

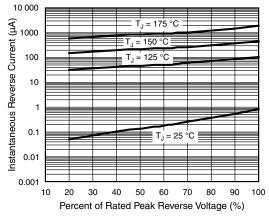


Fig. 4 - Typical Reverse Characteristics

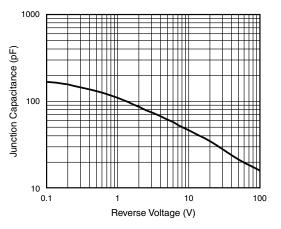


Fig. 5 - Typical Junction Capacitance

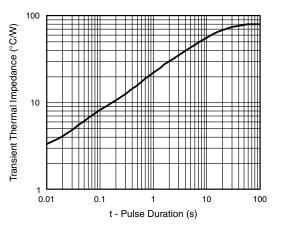
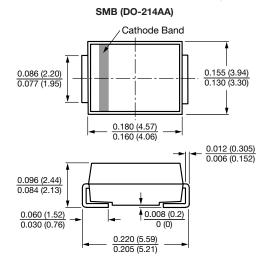
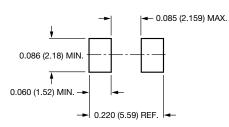


Fig. 6 - Typical Transient Thermal Impedance Per Leg

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout



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