High Voltage Surface Mount Schottky Rectifier

High Barrier Technology for Improved High Temperature Performance

DO-214AA (SMB)

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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

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	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 and AEC-Q101 qualified
Base P/NHE3_X - 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 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	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 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}	-65 to +175		°C

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		V
		T_J = 125 °C		0.65		
Maximum reverse current at rated V_R (2)		T_J = 25 °C	I_R	10		μA
		T_J = 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_A = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS2H9	SS2H10	UNIT
Maximum thermal resistance junction to lead T_L = 25 °C (1)	$R_{\theta JA}$	80		°C/W
	$R_{\theta JL}$	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
SS2H9-E3/52T	0.096	52T	750	7" diameter plastic tape and reel
SS2H9-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel
SS2H9HE3/52T (1)	0.096	52T	750	7" diameter plastic tape and reel
SS2H9HE3/5BT (1)	0.096	5BT	3200	13" diameter plastic tape and reel
SS2H9HE3_A/H (1)	0.096	H	750	7" diameter plastic tape and reel
SS2H9HE3_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)

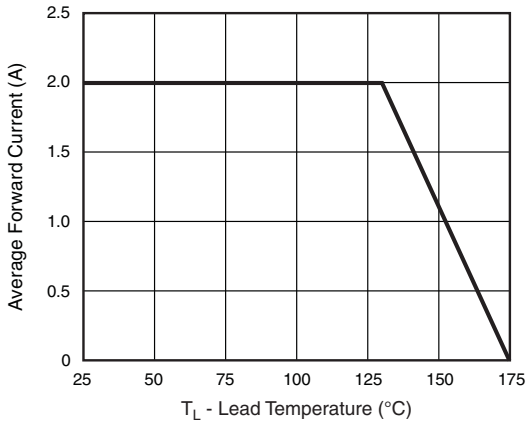


Fig. 1 - Forward Current Derating Curve

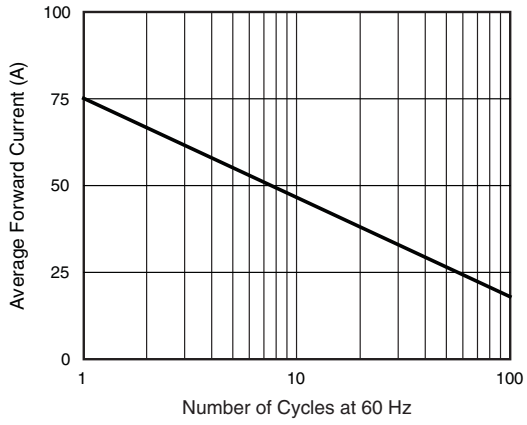


Fig. 2 - Max Non-Repetitive Peak Forward Surge Current

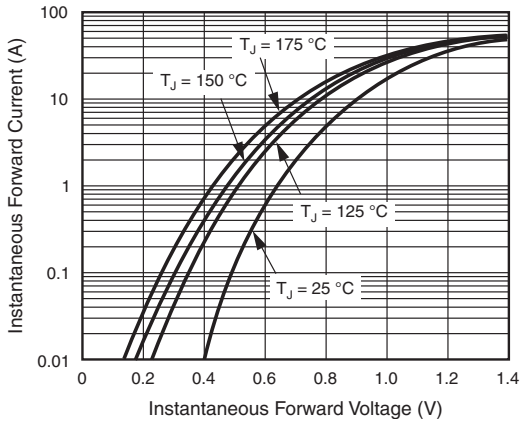


Fig. 3 - Typical Instanteous Forward Characteristics

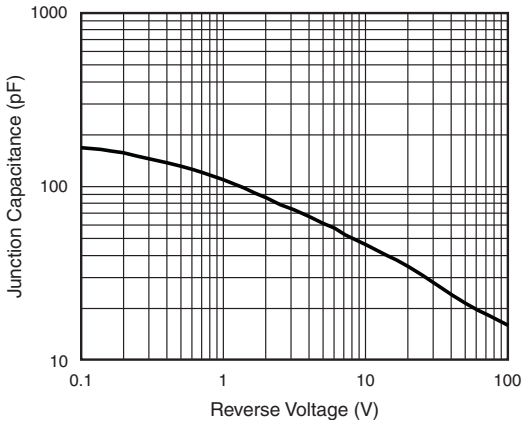


Fig. 5 - Typical Junction Capacitance

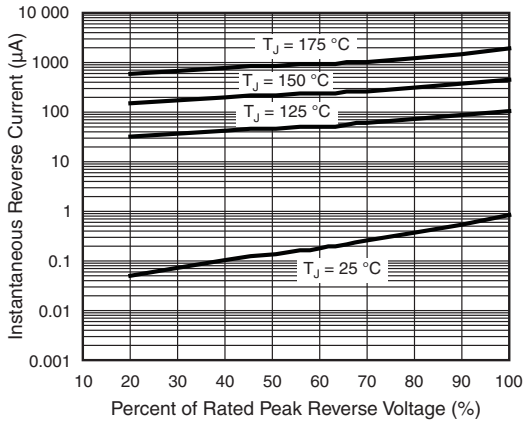


Fig. 4 - Typical Reverse Characteristics

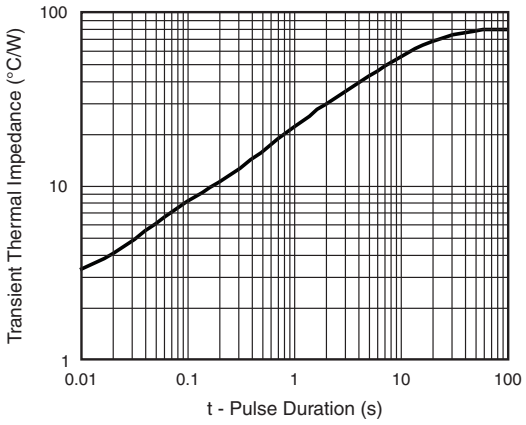
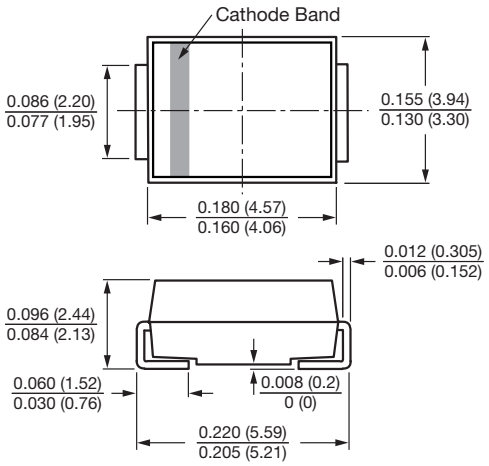


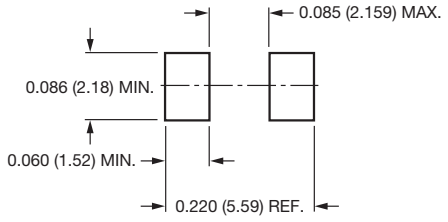
Fig. 6 - Typical Transient Thermal Impedance Per Leg

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout



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