

Vishay General Semiconductor

COMPLIANT

HALOGEN

FREE

Surface Mount Schottky Barrier Rectifier



SMB (DO-214AA)

PRIMARY CHARACTERISTICS						
I _{F(AV)}	2.0 A					
V _{RRM}	20 V, 30 V, 40 V, 50 V, 60 V					
I _{FSM}	75 A					
V _F	0.50 V, 0.70 V					
T _J max.	150 °C					
Package	SMB (DO-214AA)					
Diode variations	Single					

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 or P/NHM3
- Material categorization: for definitions of compliance please see www.vishav.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

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 J-STD-002 and JESD 22-B102

E3, M3, HE3, and HM3 suffix meets JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

PARAMETER	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT
Device marking code		S2	S3	S4	S5	S6	
Maximum repetitive peak reverse voltage	V_{RRM}	20	30	40	50	60	V
Maximum RMS voltage	V _{RMS}	14	21	28	35	42	V
Maximum DC blocking voltage	V_{DC}	20	30	40	50	60	V
Max. average forward rectified current at T _L (fig. 1)	I _{F(AV)}	2.0					Α
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	75					А
Non-repetitive avalanche energy at T_A = 25 °C, I_{AS} = 2.0 A, L = 10 mH	E _{AS}	20					mJ
Electrostatic discharge capacitor voltage Human body model: C = 100 pF, R = 1.5 k Ω	V _C	8.0					kV
Voltage rate of change (rated V _R)	dV/dt	10 000					V/µs
Operating junction temperature range	TJ	-65 to +150					°C
Storage temperature range	T _{STG}	-65 to +150					°C



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	TEST CONDITIONS	SYMBOL	SS22	SS23	SS24	SS25	SS26	UNIT
Maximum instantaneous forward voltage (1)	2.0 A	V_{F}	0.5		0.7		V	
Maximum DC reverse current at rated DC	mum DC reverse current at rated DC T _A = 25 °C		0.4				mA	
blocking voltage (1)	T _A = 100 °C	'R	10				IIIA	

Note

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	SYMBOL SS22 SS23 SS24 SS25 SS26 UN					UNIT
Typical thermal resistance (1)	$R_{\theta JA}$	75					°C/W
Typical thermal resistance **		17				C/VV	

Note

 $^{^{(1)}}$ PCB mounted with 0.55" x 0.55" (14 mm x 14 mm) copper pad areas

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
SS26-E3/52T	0.096	52T	750	7" diameter plastic tape and reel				
SS26-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel				
SS26HE3_A/H (1)	0.096	Н	750	7" diameter plastic tape and reel				
SS26HE3_A/I (1)	0.096	I	3200	13" diameter plastic tape and reel				
SS26-M3/52T	0.096	52T	750	7" diameter plastic tape and reel				
SS26-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel				
SS26HM3_A/H (1)	0.096	Н	750	7" diameter plastic tape and reel				
SS26HM3_A/I (1)	0.096	I	3200	13" diameter plastic tape and reel				

Note

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

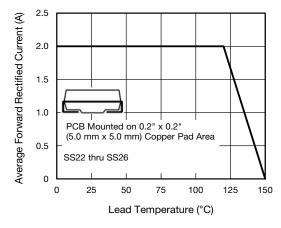


Fig. 1 - Forward Current Derating Curve

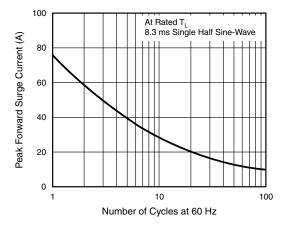


Fig. 2 - Maximum Non-Repetitive Surge Current

⁽¹⁾ AEC-Q101 qualified



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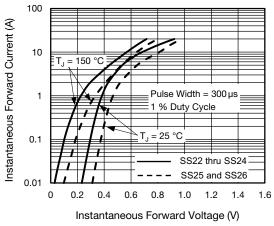


Fig. 3 - Typical Instantaneous Forward Characteristics

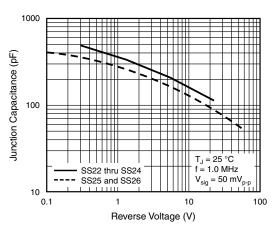


Fig. 5 - Typical Junction Capacitance

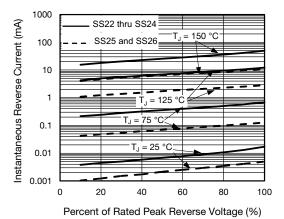


Fig. 4 - Typical Reverse Current Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB) Cathode Band **Mounting Pad Layout** 0.085 (2.159) MAX. 0.155(3.94) 0.086(2.20) 0.077(1.95) 0.086 (2.18) MIN. 0.180(4.57) 0.160(4.06) 0.012(0.305) 0.006(0.152) 0.060 (1.52) 0.096(2. 0.084(2.13) 0.220 REF. 0.008(0.2) 0.060(1.52) 0.030(0.76) 0.220(5.59) 0.205(5.21)



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