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Vishay General Semiconductor

Surface Mount Glass Passivated Rectifier



DO-214AA (SMB)

PRIMARY CHARACTERISTICS								
I _{F(AV)}	1.5 A							
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V							
I _{FSM}	50 A							
I _R	1.0 µA							
V _F	1.15 V							
T _J max.	150 °C							
Package	DO-214AA (SMB)							
Diode variations	Single die							

FEATURES

- Low profile package
- Ideal for automated placement
- · Glass passivated chip junction
- Low forward voltage drop
- Low leakage current
-
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see <u>www.vishay.com/doc?99912</u>

TYPICAL APPLICATIONS

For use in general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

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

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	S2A	S2B	S2D	S2G	S2J	S2K	S2M	UNIT
Device marking code		SA	SB	SD	SG	SJ	SK	SM	
Max. repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Max. RMS voltage	V _{RMS}	35	70	140	280	420	560	700	V
Max. DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Max. average forward rectified current at T _L = 100 °C	I _{F(AV)}	1.5						Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	50					Α		
Operating 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	S2A	S2B	S2D	S2G	S2J	S2K	S2M	UNIT
Max. instantaneous forward voltage	1.5 A		V _F	V _F 1.15					٧		
Max. DC reverse current at		T _A = 25 °C	I_	1.0							μA
rated DC blocking voltage		T _A = 125 °C	I _R	125							μΛ
Typical reverse recovery time	$I_F = 0.5$ $I_{rr} = 0.2$	A, I _R = 1.0 A, 5 A	t _{rr}	2.0					μs		
Typical junction capacitance	4.0 V, 1	MHz	CJ	16				pF			



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THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	OL S2A S2B S2D S2G S2J S2K S2M					UNIT		
Typical thermal resistance (1)	$R_{\theta JA}$	53							°C/W
Typical thermal resistance (*)	$R_{ heta JL}$				16				C/VV

Note

⁽¹⁾ Thermal resistance from junction to ambient and from junction to lead mounted on PCB with 0.3" x 0.3" (8.0 mm x 8.0 mm) copper pad areas

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
S2J-E3/52T	0.096	52T	750	7" diameter plastic tape and reel				
S2J-E3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel				
S2JHE3/52T (1)	0.096	52T	750	7" diameter plastic tape and reel				
S2JHE3/5BT (1)	0.096	5BT	3200	13" diameter plastic tape and reel				

Note

(1) AEC-Q101 qualified

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

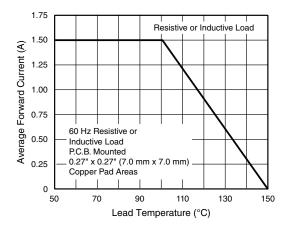


Fig. 1 - Forward Current Derating Curve

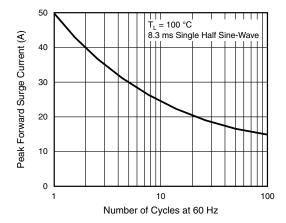


Fig. 2 - Max. Non-Repetitive Peak Forward Surge Current

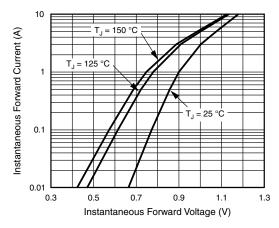


Fig. 3 - Typical Instantaneous Forward Characteristics

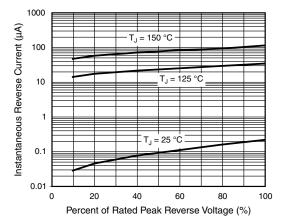


Fig. 4 - Typical Reverse Characteristics



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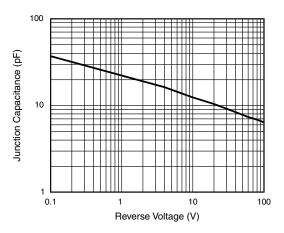


Fig. 5 - Typical Junction Capacitance

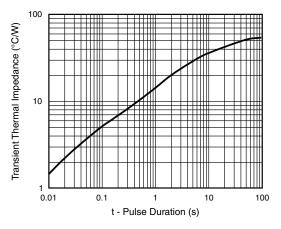
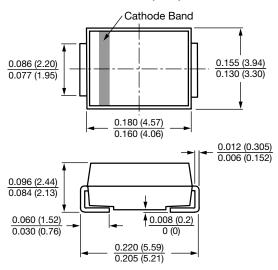


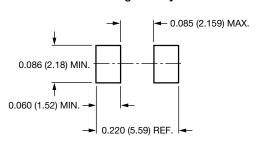
Fig. 6 - Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout





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