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Vishay General Semiconductor

Surface Mount Glass Passivated Rectifier



DO-214AB (SMC)

PRIMARY CHARACTERISTICS								
I _{F(AV)}	5.0 A							
V _{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V							
I _{FSM}	100 A							
I _R	10 μA							
V _F	1.15 V							
T _J max.	150 °C							
Package	DO-214AB (SMC)							
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.vishav.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-214AB (SMC)

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 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 cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)									
PARAMETER	SYMBOL	S5A	S5B	S5D	S5G	S5J	S5K	S5M	UNIT
Device marking code		5A	5B	5D	5G	5J	5K	5M	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V _{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage		50	100	200	400	600	800	1000	V
Maximum average forward rectified current at T _L = 75 °C	I _{F(AV)}	5.0					Α		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100					Α		
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 150							°C



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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	S5A	S5B	S5D	S5G	S5J	S5K	S5M	UNIT
Maximum instantaneous forward voltage	5.0 A	V _F	1.15					V		
Maximum DC reverse current at	T _A = 25 °C	- I _R	10					μA		
rated DC blocking voltage	T _A = 125 °C	-11	250					P		
Typical reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$	t _{rr}	2.5				μs			
Typical junction capacitance	4.0 V, 1 MHz	CJ	40					pF		

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)							
PARAMETER SYMBOL S5A S5B S5D S5G S5J S5K S5M UNIT						UNIT	
Typical thermal resistance (1)	$R_{\theta JL}$	10 °				°C/W	

Note

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

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
S5J-E3/57T	0.211	57T	850	7" diameter plastic tape and reel				
S5J-E3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel				
S5JHE3/57T ⁽¹⁾	0.211	57T	850	7" diameter plastic tape and reel				
S5JHE3/9AT (1)	0.211	9AT	3500	13" diameter plastic tape and reel				
S5JHE3_A/H (1)	0.211	Н	850	7" diameter plastic tape and reel				
S5JHE3_A/I (1)	0.211	I	3500	13" diameter plastic tape and reel				

Note

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

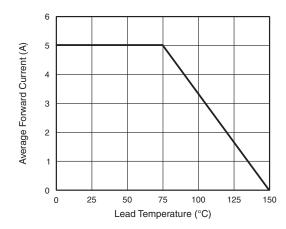


Fig. 1 - Forward Current Derating Curve

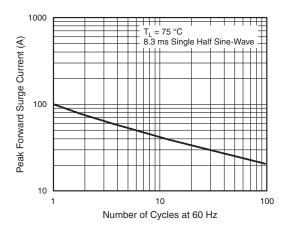


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

⁽¹⁾ AEC-Q101 qualified

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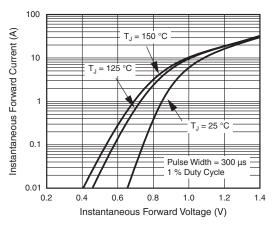


Fig. 3 - Typical Instantaneous Forward Characteristics

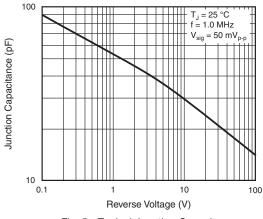


Fig. 5 - Typical Junction Capacitance

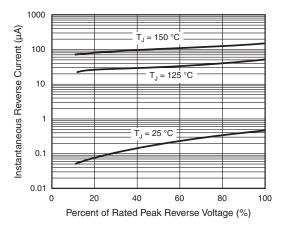
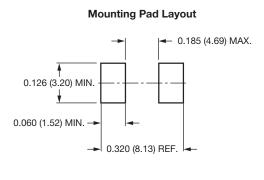


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AB (SMC) Cathode Band 0.246 (6.22) 0.126 (3.20) 0.220 (5.59) 0.114 (2.90) 0.280 (7.11) 0.260 (6.60) 0.012 (0.305) 0.006 (0.152) 0.103 (2.62) 0.079 (2.06) 0.008 (0.2) 0.060 (1.52) 0.030 (0.76) 0 (0) 0.320 (8.13) 0.305 (7.75)





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