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Vishay General Semiconductor

Surface-Mount Glass Passivated Rectifier



SMC (DO-214AB)

Cathode O Anode

LINKS TO ADDITIONAL RESOURCES



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	SMC (DO-214AB)						
Circuit configuration	Single						

FEATURES

- Low profile package
- · Ideal for automated placement
- Glass passivated pellet 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 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 general purpose rectification of power supplies, inverters, converters and freewheeling diodes for consumer, automotive and telecommunication.

MECHANICAL DATA

Case: SMC (DO-214AB)

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 ("_X" denotes revision code e.g. A, B,.....)

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

E3, M3, and 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	V _{DC}	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					А		
Operating junction and storage temperature range	T _J , T _{STG}	TG -55 to +150 °C					°C		







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ELECTRICAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ 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 _B	10							μA
rated DC blocking voltage $T_A = 125^{\circ}$		T _A = 125 °C	·n	250							μ. ι
Typical reverse recovery time	$I_F = 0.5$ $I_{rr} = 0.2$	A, I _R = 1.0 A, 5 A	t _{rr}	2.5					μs		
Typical junction capacitance	4.0 V, 1	l MHz	CJ	40					pF		

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)								
PARAMETER	AMETER SYMBOL S5A S5B S5D S5G S5J S5K S5M UNIT							UNIT
Typical thermal resistance ⁽¹⁾	R _{θJL}	10 °C			°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					
S5J-M3/57T	0.211	57T	850	7" diameter plastic tape and reel					
S5J-M3/9AT	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

(1) AEC-Q101 qualified



S5A, S5B, S5D, S5G, S5J, S5K, S5M

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

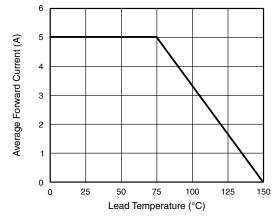


Fig. 1 - Forward Current Derating Curve

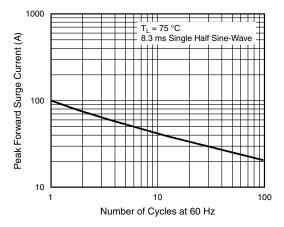


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

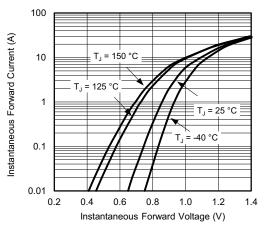


Fig. 3 - Typical Instantaneous Forward Characteristics

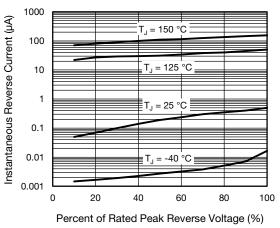


Fig. 4 - Typical Reverse Characteristics

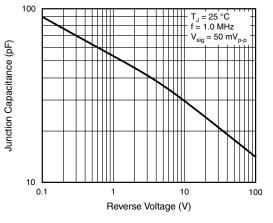


Fig. 5 - Typical Junction Capacitance

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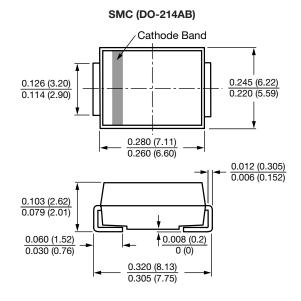
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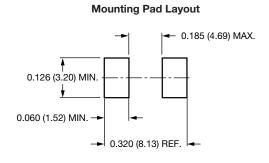


S5A, S5B, S5D, S5G, S5J, S5K, S5M

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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)







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