COMPLIANT

HALOGEN

FREE



Vishay General Semiconductor

Surface-Mount Glass Passivated Rectifier



SMC (DO-214AB)



LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS					
I _{F(AV)}	8.0 A				
V_{RRM}	400 V, 600 V, 800 V, 1000 V				
I _{FSM}	220 A				
I _R	10 μA				
V_F at $I_F = 8$ A ($T_J = 125$ °C)	0.85 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
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

TYPICAL APPLICATIONS

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

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

E3 and M3 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	S8G	S8J	S8K	S8M	UNIT	
Device marking code		S8G	S8J	S8K	S8M		
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	800	1000	V	
Maximum RMS voltage	V _{RMS}	280	420	560	700	V	
Maximum DC blocking voltage	V_{DC}	400	600	800	1000	V	
Maximum average forward rectified current	I _{F(AV)} (1)	8.0				Α	
Maximum average forward rectified current	I _{F(AV)} (2)	1.6				Α	
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	220				А	
Peak forward surge current single half sine-wave at 1.0 ms	I _{FSM}	500			Α		
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150			°C		

Notes

- (1) Mounted on aluminum PCB 30 mm x 30 mm with aluminum heatsink
- (2) Free air, mounted on recommended copper pad area



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ELECTRICAL CHARACTERISTICS (T _J = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I _F = 4.0 A	—— T₁= 25 °C	V _F ⁽¹⁾	0.89	-	V
	$I_F = 8.0 A$			0.95	0.975	
	I _F = 4.0 A	T _J = 125 °C		0.78	-	
	I _F = 8.0 A			0.85	0.971	
Reverse current	Rated V _R	T _J = 25 °C	I _R ⁽²⁾	-	10	
	nateu v _R	T _J = 125 °C		-	200	μΑ
Typical reverse recovery time	$I_F = 0.5 \text{ A}, I_R = 1.0 \text{ A}, I_{rr} = 0.25 \text{ A}$		t _{rr}	3.6	-	μs
Typical junction capacitance	4.0 V, 1 MHz		CJ	72	ı	pF

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	S8G S8J S8K S8M UNIT				
Typical thermal resistance	R _{0JA} (1)(2)		°C/W			
Typical thermal resistance	R _{0JM} (3)	4.5				C/VV

Notes

- $^{(1)}$ The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/R_{\theta JA}$
- (2) Thermal resistance junction-to-ambient to follow JEDEC® 51-2A, device mounted on FR4 PCB, 2 oz., standard footprint
- (3) Thermal resistance junction-to-mount to follow JEDEC® 51-14 transient dual interface test method (TDIM)

ORDERING INFORMATION (Example)							
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE			
S8J-E3/I	0.243	I	3500	13" diameter plastic tape and reel			
S8J-M3/I	0.243	I	3500	13" diameter plastic tape and reel			

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

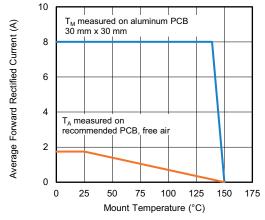


Fig. 1 - Forward Current Derating Curve

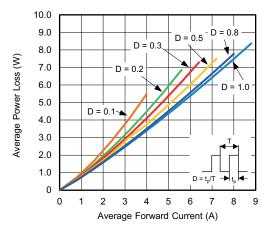


Fig. 2 - Average Power Loss Characteristics



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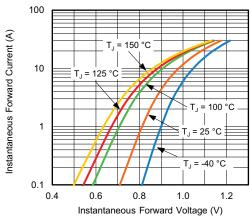


Fig. 3 - Typical Instantaneous Forward Characteristics

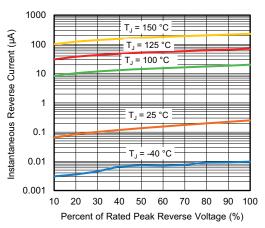


Fig. 4 - Typical Reverse Characteristics

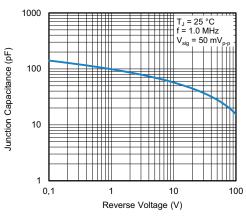


Fig. 5 - Typical Junction Capacitance

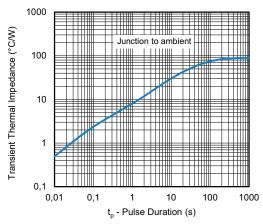
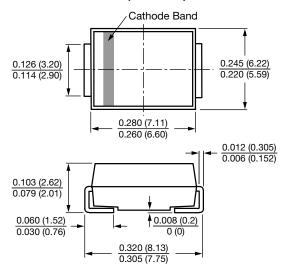


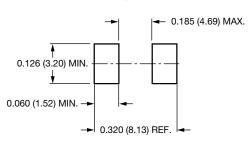
Fig. 6 - Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMC (DO-214AB)



Mounting Pad Layout





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