

Vishay General Semiconductor

Surface Mount Fast Switching Rectifier



DO-214AB (SMC)

PRIMARY CHARACTERISTICS						
I _{F(AV)}	3.0 A					
V _{RRM}	50 V to 800 V					
I _{FSM}	100 A					
t _{rr}	150 ns, 250 ns, 500 ns					
V _F	1.3 V					
T _J max.	150 °C					

FEATURES





· Glass passivated chip junction

· Fast switching for high efficiency

· High forward surge capability

 Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C

Solder dip 260 °C, 40 s

 Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

For use in fast switching rectification of power supply, inverters, converters, and freewheeling diodes for consumer, automotive and telecommunication.

MECHANICAL DATA

Case: DO-214AB (SMC)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per

J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL	RS3A	RS3B	RS3D	RS3G	RS3J	RS3K	UNIT
Device marking code		RA	RB	RD	RG	RJ	RK	
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	500	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	V
Maximum average forward rectified current at $T_L = 75$ °C	I _{F(AV)}	3.0						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	RS3A	RS3B	RS3D	RS3G	RS3J	RS3K	UNIT
Maximum instantaneous forward voltage	2.5 A		V _F 1.3					V		
Maximum DC reverse current at rated DC blocking voltage		T _A = 25 °C T _A = 125 °C	I _R	10 250					μΑ	
Maximum reverse recovery time	I _F = 0.5 I _{rr} = 0.2	A, I _R = 1.0 A, 5 A	t _{rr}	150 250 500				500	ns	
Typical junction capacitance	4.0 V, 1	MHz	CJ	44 34				pF		

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)								
PARAMETER	SYMBOL RS3A RS3B RS3D RS3G RS3J RS3K UNI					UNIT		
Typical thermal resistance (1)	$R_{ hetaJA} \ R_{ hetaJL}$	50 15					°C/W	

Note:

(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with 0.3 x 0.3" (8.0 x 8.0 mm) copper pad area

ORDERING INFORMATION (Example)								
PREFERRED P/N	UNIT WEIGHT (g)	REFFERED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE				
RS3J-E3/57T	0.211	57T	850	7" diameter plastic tape and reel				
RS3J-E3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel				
RS3JHE3/57T (1)	0.211	57T	850	7" diameter plastic tape and reel				
RS3JHE3/9AT (1)	0.211	9AT	3500	13" diameter plastic tape and reel				

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

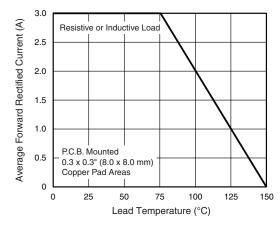


Figure 1. Forward Current Derating Curve

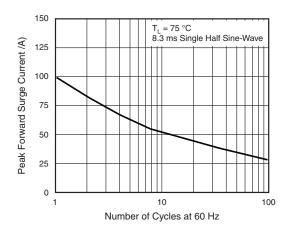


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



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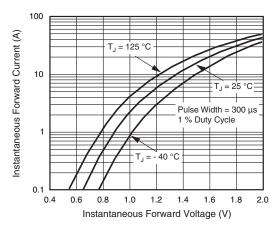
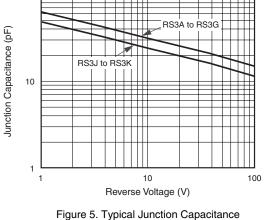


Figure 3. Typical Instantaneous Forward Characteristics



100

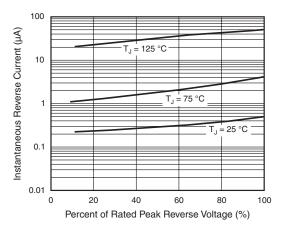


Figure 4. Typical Reverse Characteristics

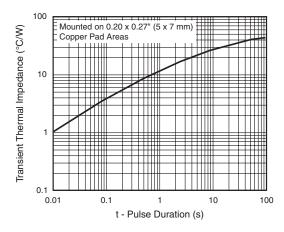
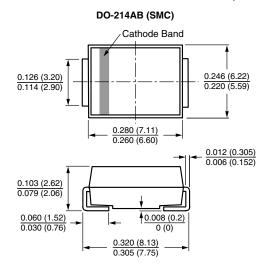
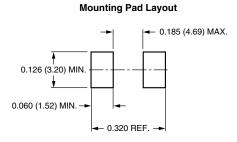


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)









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