Surface Mount Glass Passivated Rectifier

DO-214AB (SMC)

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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

RoHS COMPLIANT

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)

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	5.0 A
V_{RRM}	50 V to 1000 V
I_{FSM}	100 A
I_R	10 µA
V_F	1.15 V
T_J max.	150 °C

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 recurrent 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							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100							A
Operating junction 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**	**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 rated DC blocking voltage		T_A = 25 °C T_A = 125 °C	I_R	10 250							μA
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	2.5							μs
Typical junction capacitance	4.0 V, 1 MHz		C_J	40							pF

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

Note:

(1) Thermal resistance 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)**	**REFERRED 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

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

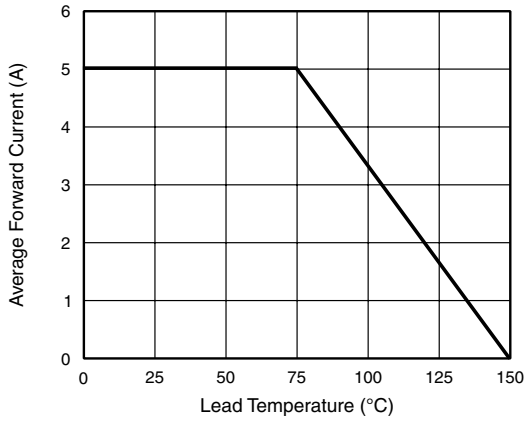

Figure 1. Forward Current Derating Curve

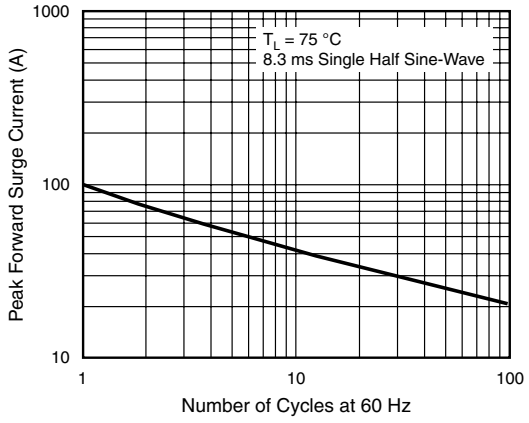

Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

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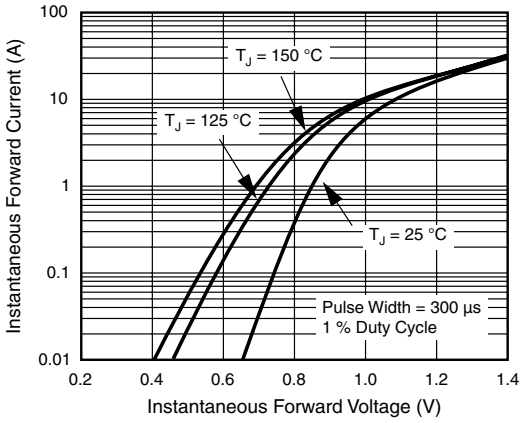


Figure 3. Typical Instantaneous Forward Characteristics

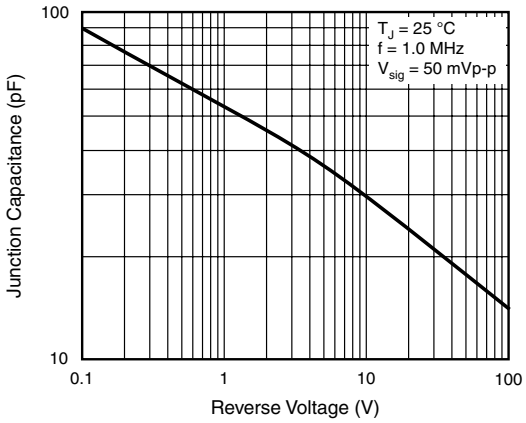


Figure 5. Typical Junction Capacitance

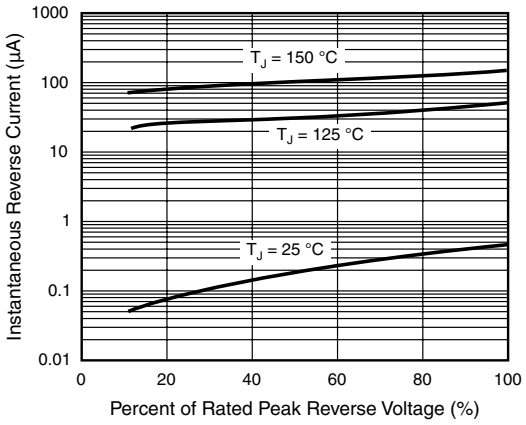
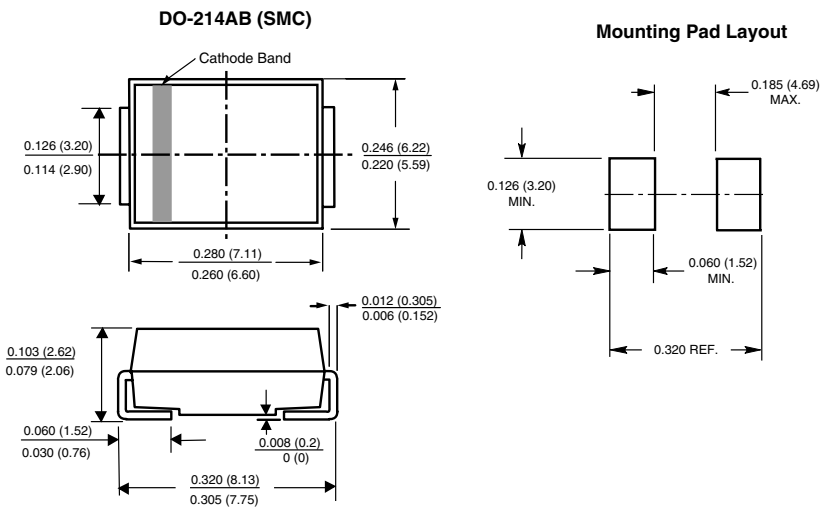


Figure 4. Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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