

## Surface Mount Glass Passivated Rectifier


**DO-214AB (SMC)**

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

### 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

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 <sub>A</sub> = 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 <sub>F</sub>				1.15				V
Maximum DC reverse current at rated DC blocking voltage	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>				10 250				μA
Typical reverse recovery time	I <sub>F</sub> = 0.5 A, I <sub>R</sub> = 1.0 A, I <sub>rr</sub> = 0.25 A	t <sub>rr</sub>				2.5				μs
Typical junction capacitance	4.0 V, 1 MHz	C <sub>J</sub>				40				pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	SYMBOL	S5A	S5B	S5D	S5G	S5J	S5K	S5M	UNIT	
Typical thermal resistance <sup>(1)</sup>	R <sub>θJL</sub>				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 <sup>(1)</sup>	0.211	57T	850	7" diameter plastic tape and reel
S5JHE3/9AT <sup>(1)</sup>	0.211	9AT	3500	13" diameter plastic tape and reel

**Note:**

(1) Automotive grade AEC Q101 qualified

### RATINGS AND CHARACTERISTICS CURVES

(T<sub>A</sub> = 25 °C unless otherwise noted)

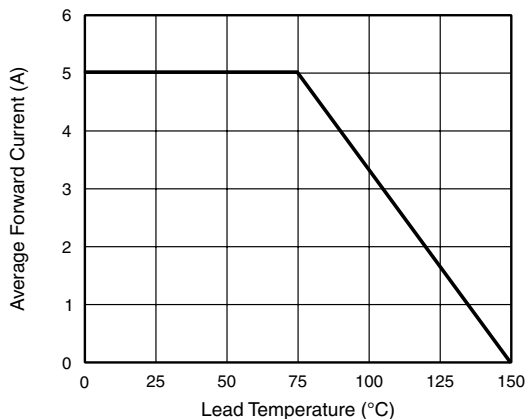


Figure 1. Forward Current Derating Curve

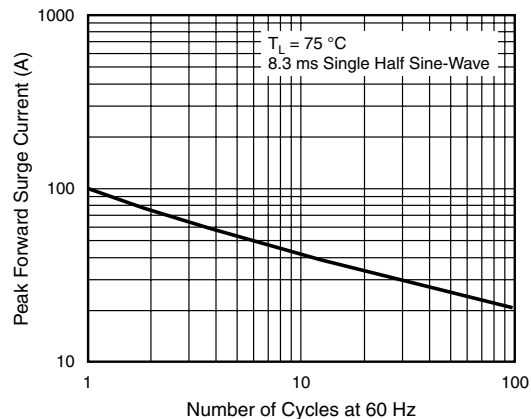


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

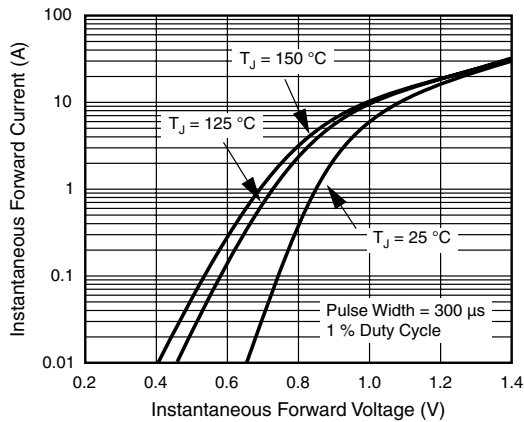


Figure 3. Typical Instantaneous Forward Characteristics

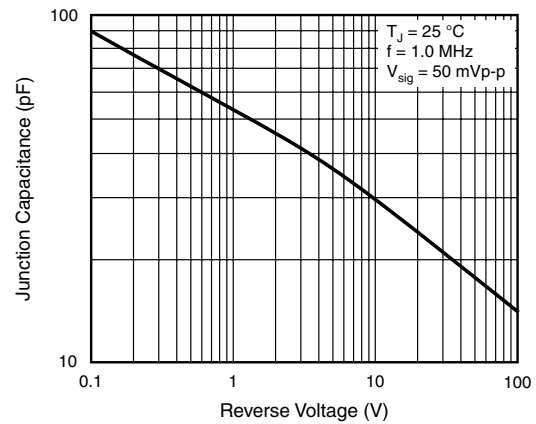


Figure 5. Typical Junction Capacitance

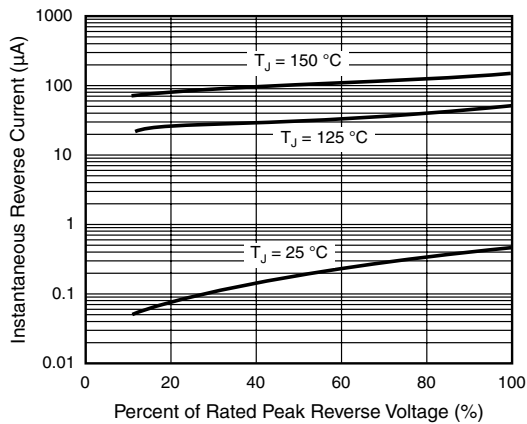
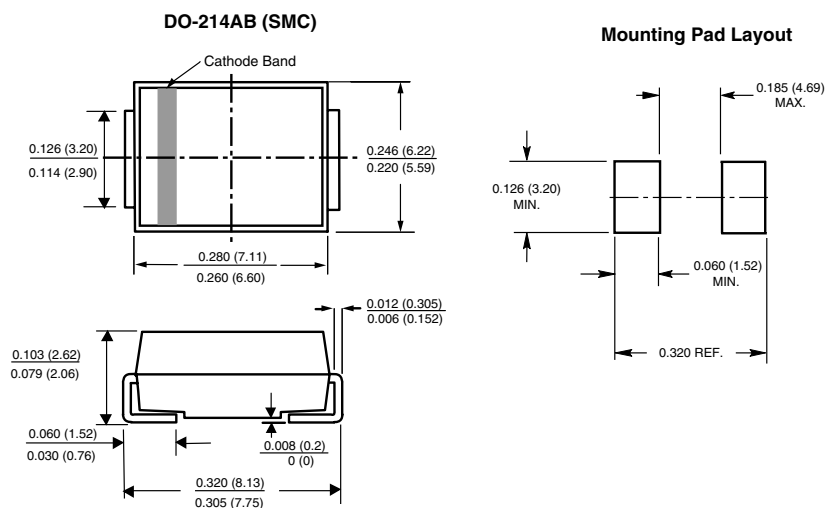


Figure 4. Typical Reverse Characteristics

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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