

## 3A, 50V - 1000V Surface Mount Fast Recovery Rectifier

### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Fast switching for high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- Converter

### MECHANICAL DATA

- Case: DO-214AB (SMC)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.21 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	3	A
$V_{RRM}$	50 - 1000	V
$I_{FSM}$	100	A
$T_{J\ MAX}$	150	°C
Package	DO-214AB (SMC)	



**DO-214AB (SMC)**

ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	RS 3A-K	RS 3B-K	RS 3D-K	RS 3G-K	RS 3J-K	RS 3K-K	RS 3M-K	UNIT
Marking code on the device		RS3A	RS3B	RS3D	RS3G	RS3J	RS3K	RS3M	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	V
Forward current	$I_F$	3							A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	$I_{FSM}$	100							A
Junction temperature	$T_J$	- 55 to +150							°C
Storage temperature	$T_{STG}$	- 55 to +150							°C

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP.	UNIT
Junction-to-lead thermal resistance per diode	$R_{\theta JL}$	10	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	56	°C/W
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	11	°C/W

**Thermal Performance Note:** Units mounted on PCB (16mm x 16mm Cu pad test board)

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Forward voltage per diode <sup>(1)</sup>		I <sub>F</sub> = 1.5A, T <sub>J</sub> = 25°C	V <sub>F</sub>	0.99	-	V
		I <sub>F</sub> = 3.0A, T <sub>J</sub> = 25°C		1.10	1.30	V
		I <sub>F</sub> = 1.5A, T <sub>J</sub> = 125°C		0.81	-	V
		I <sub>F</sub> = 3.0A, T <sub>J</sub> = 125°C		0.91	1.05	V
Reverse current @ rated V <sub>R</sub> per diode <sup>(2)</sup>		T <sub>J</sub> = 25°C	I <sub>R</sub>	-	10	μA
		T <sub>J</sub> = 125°C		-	250	μA
Junction capacitance		1 MHz, V <sub>R</sub> =4.0V	C <sub>J</sub>	24	-	pF
Reverse recovery time	RS3A-K RS3B-K RS3D-K RS3G-K	I <sub>F</sub> =0.5A , I <sub>R</sub> =1.0A  I <sub>RR</sub> =0.25A	t <sub>rr</sub>	-	150	ns
	RS3J-K			-	250	ns
	RS3K-K RS3M-K			-	500	ns

**Notes:**

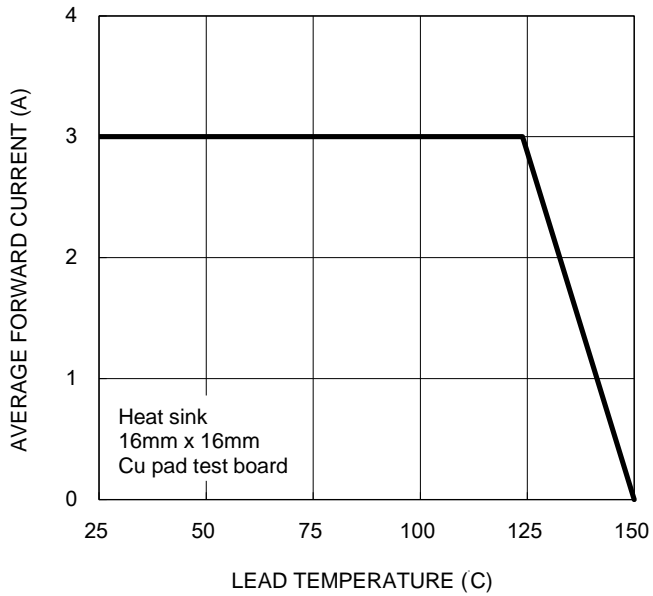
1. Pulse test with  $PW = 0.3\text{ ms}$
2. Pulse test with  $PW = 30\text{ ms}$

<b>ORDERING INFORMATION</b>		
<b>ORDERING CODE</b>	<b>PACKAGE</b>	<b>PACKING</b>
RS3A-K R7G	SMC	850 / 7" Plastic reel
RS3A-K M6G	SMC	3,000 / 13" Plastic reel
RS3B-K R7G	SMC	850 / 7" Plastic reel
RS3B-K M6G	SMC	3,000 / 13" Plastic reel
RS3D-K R7G	SMC	850 / 7" Plastic reel
RS3D-K M6G	SMC	3,000 / 13" Plastic reel
RS3G-K R7G	SMC	850 / 7" Plastic reel
RS3G-K M6G	SMC	3,000 / 13" Plastic reel
RS3J-K R7G	SMC	850 / 7" Plastic reel
RS3J-K M6G	SMC	3,000 / 13" Plastic reel
RS3K-K R7G	SMC	850 / 7" Plastic reel
RS3K-K M6G	SMC	3,000 / 13" Plastic reel
RS3M-K R7G	SMC	850 / 7" Plastic reel
RS3M-K M6G	SMC	3,000 / 13" Plastic reel

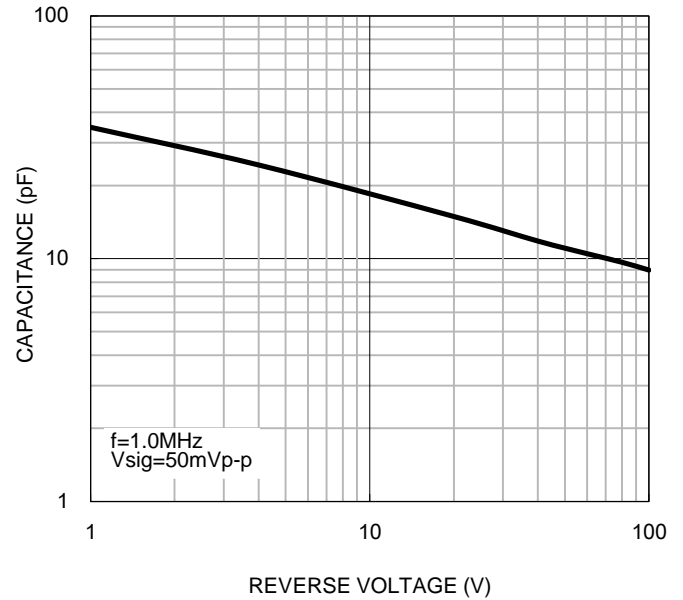
## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

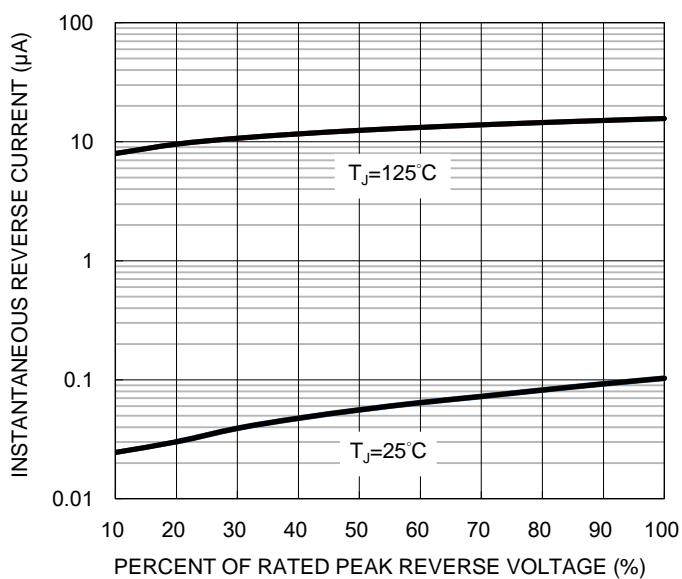
**Fig.1 Forward Current Derating Curve**



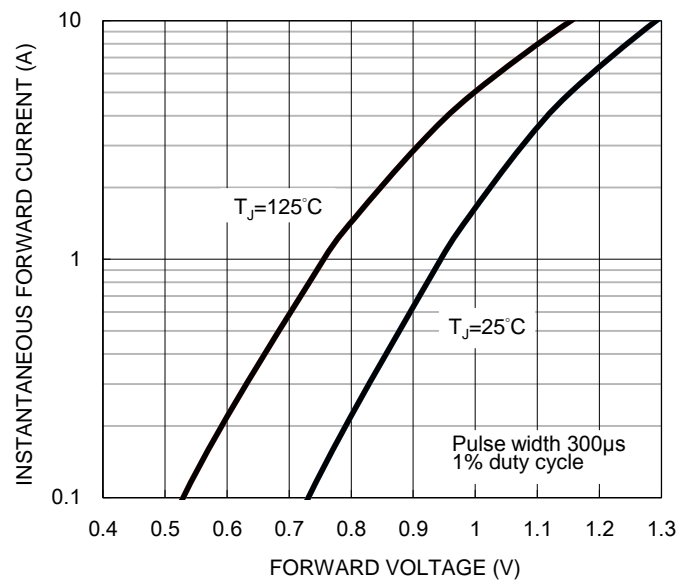
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**

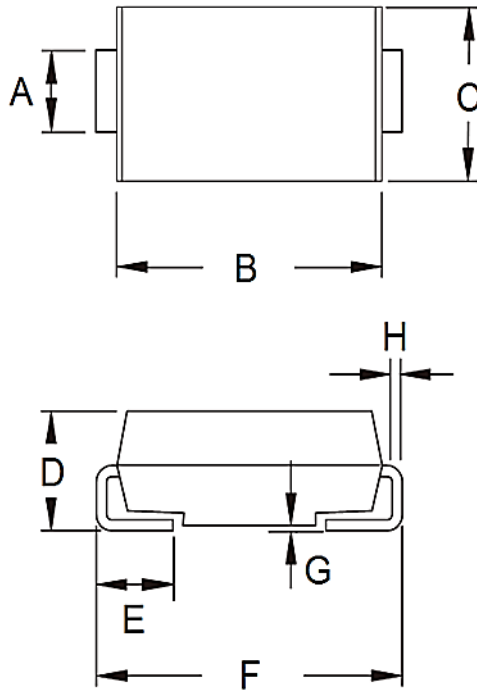


**Fig.4 Typical Forward Characteristics**



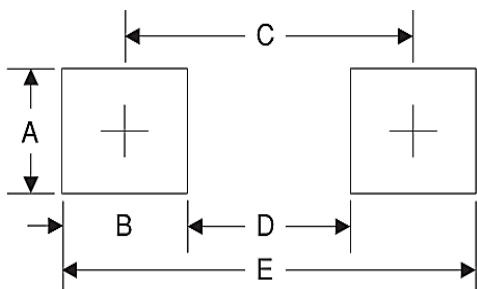
## PACKAGE OUTLINE DIMENSIONS

DO-214AB (SMC)



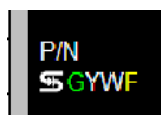
DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	2.90	3.20	0.114	0.126
B	6.60	7.11	0.260	0.280
C	5.59	6.22	0.220	0.245
D	2.00	2.62	0.079	0.103
E	1.00	1.60	0.039	0.063
F	7.75	8.13	0.305	0.320
G	0.10	0.20	0.004	0.008
H	0.15	0.31	0.006	0.012

## SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	3.30	0.130
B	2.50	0.098
C	6.80	0.268
D	4.40	0.173
E	9.40	0.370

## MARKING DIAGRAM



P/N =Marking Code  
 G =Green Compound  
 YW =Date Code  
 F =Factory Code

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