

5A, 50V - 1000V Surface Mount Rectifier

FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- High current capability
- High surge current capability
- 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
- Polarity: As marked
- Weight: 0.25 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	5	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	S5 AC-K	S5 BC-K	S5 DC-K	S5 GC-K	S5 JC-K	S5 KC-K	S5 MC-K	UNIT
Marking code on the device		S5A	S5B	S5D	S5G	S5J	S5K	S5M	
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	5							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	$R_{\theta JL}$	11	$^{\circ}\text{C/W}$
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	48	$^{\circ}\text{C/W}$
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	12	$^{\circ}\text{C/W}$

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 ⁽¹⁾	$I_F = 2.5\text{A}, T_J = 25^{\circ}\text{C}$	V_F	0.90	-	V
	$I_F = 5.0\text{A}, T_J = 25^{\circ}\text{C}$		0.96	1.15	V
	$I_F = 2.5\text{A}, T_J = 125^{\circ}\text{C}$		0.78	-	V
	$I_F = 5.0\text{A}, T_J = 125^{\circ}\text{C}$		0.85	1.00	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^{\circ}\text{C}$	I_R	-	10	μA
	$T_J = 125^{\circ}\text{C}$		-	250	μA
Junction capacitance	1 MHz, $V_R = 4.0\text{V}$	C_J	34	-	pF

Notes:

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

ORDERING INFORMATION		
ORDERING CODE	PACKAGE	PACKING
S5AC-K R7G	SMC	850 / 7" Plastic reel
S5AC-K M6G	SMC	3,000 / 13" Plastic reel
S5BC-K R7G	SMC	850 / 7" Plastic reel
S5BC-K M6G	SMC	3,000 / 13" Plastic reel
S5DC-K R7G	SMC	850 / 7" Plastic reel
S5DC-K M6G	SMC	3,000 / 13" Plastic reel
S5GC-K R7G	SMC	850 / 7" Plastic reel
S5GC-K M6G	SMC	3,000 / 13" Plastic reel
S5JC-K R7G	SMC	850 / 7" Plastic reel
S5JC-K M6G	SMC	3,000 / 13" Plastic reel
S5KC-K R7G	SMC	850 / 7" Plastic reel
S5KC-K M6G	SMC	3,000 / 13" Plastic reel
S5MC-K R7G	SMC	850 / 7" Plastic reel
S5MC-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

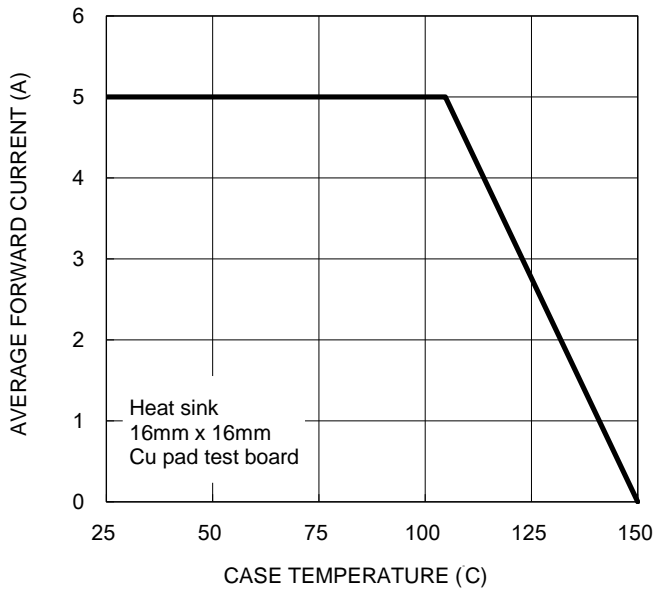


Fig.2 Typical Junction Capacitance

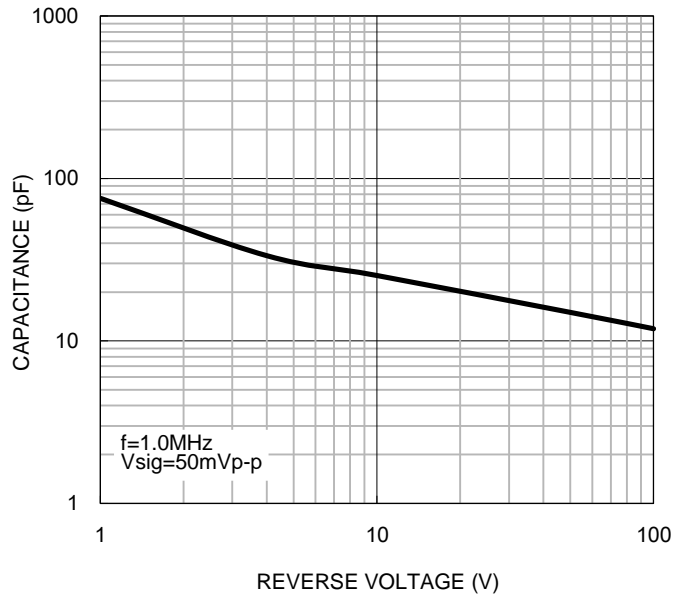


Fig.3 Typical Reverse Characteristics

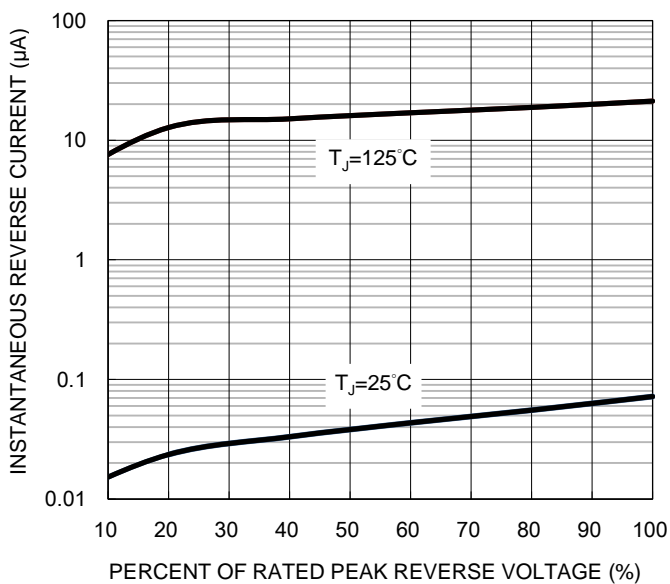
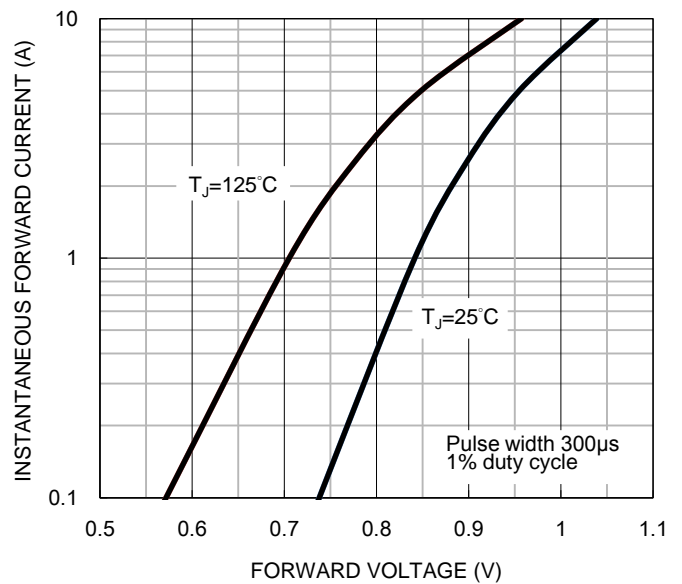
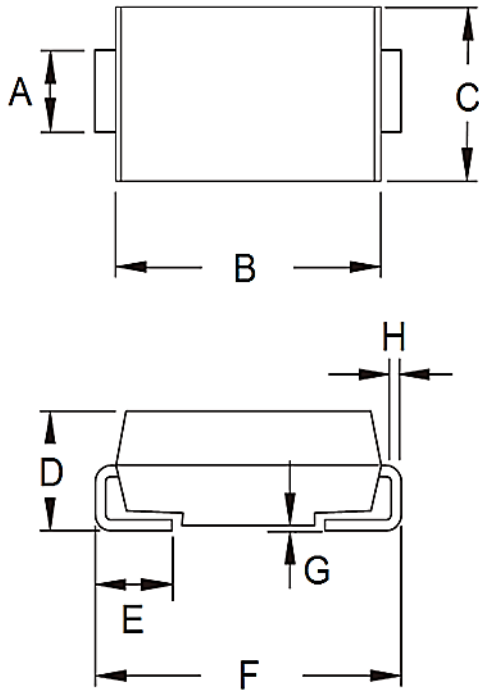


Fig.4 Typical Forward Characteristics



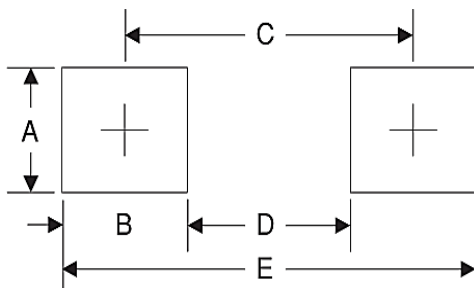
PACKAGE OUTLINE DIMENSIONS

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

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.