

3A, 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	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	S3A-T	S3B-T	S3D-T	S3G-T	S3J-T	S3K-T	S3M-T	UNIT
Marking code on the device		S3A	S3B	S3D	S3G	S3J	S3K	S3M	
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	$R_{\theta JL}$	8	°C/W
Junction-to-ambient thermal resistance per diode	$R_{\theta JA}$	56	°C/W
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	12	°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⁾	$I_F = 1.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.88	-	V
	$I_F = 3.0\text{A}, T_J = 25^\circ\text{C}$		0.93	1.15	V
	$I_F = 1.5\text{A}, T_J = 125^\circ\text{C}$		0.75	-	V
	$I_F = 3.0\text{A}, T_J = 125^\circ\text{C}$		0.81	0.92	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	27	-	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
S3A-T R7G	SMC	850 / 7" Plastic reel
S3A-T M6G	SMC	3,000 / 13" Plastic reel
S3B-T R7G	SMC	850 / 7" Plastic reel
S3B-T M6G	SMC	3,000 / 13" Plastic reel
S3D-T R7G	SMC	850 / 7" Plastic reel
S3D-T M6G	SMC	3,000 / 13" Plastic reel
S3G-T R7G	SMC	850 / 7" Plastic reel
S3G-T M6G	SMC	3,000 / 13" Plastic reel
S3J-T R7G	SMC	850 / 7" Plastic reel
S3J-T M6G	SMC	3,000 / 13" Plastic reel
S3K-T R7G	SMC	850 / 7" Plastic reel
S3K-T M6G	SMC	3,000 / 13" Plastic reel
S3M-T R7G	SMC	850 / 7" Plastic reel
S3M-T M6G	SMC	3,000 / 13" Plastic reel

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

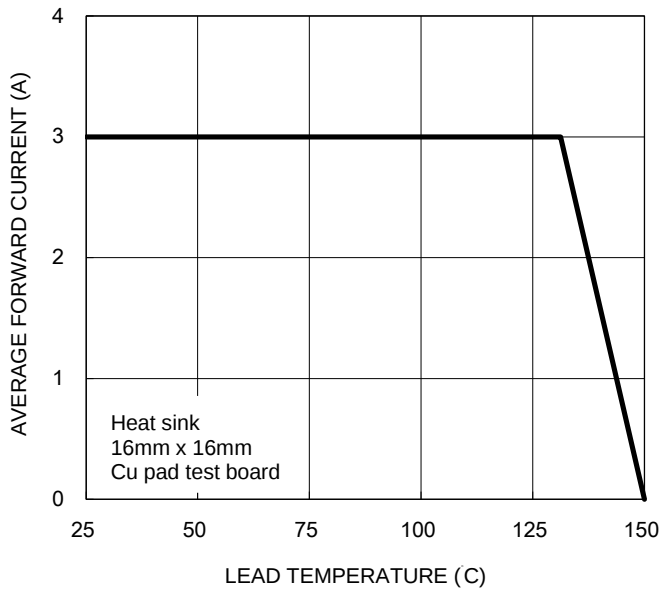


Fig.2 Typical Junction Capacitance

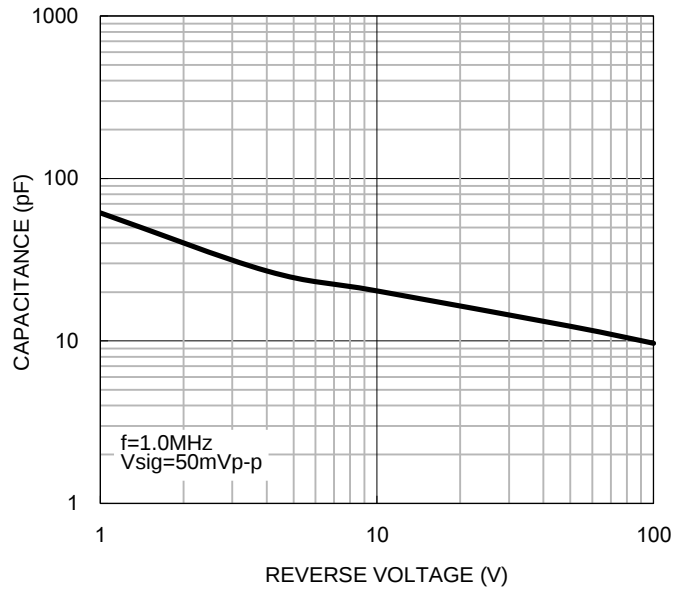


Fig.3 Typical Reverse Characteristics

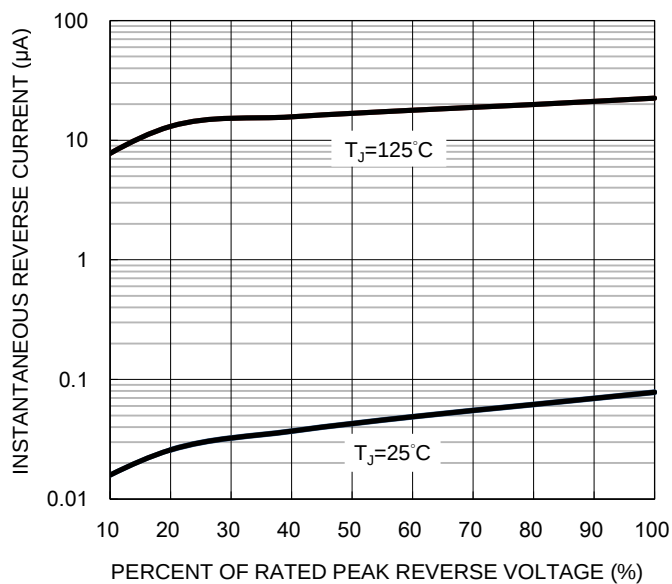
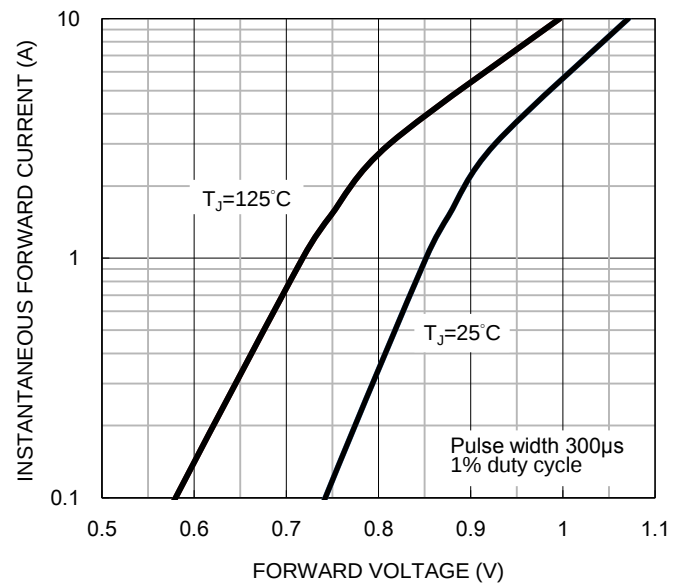
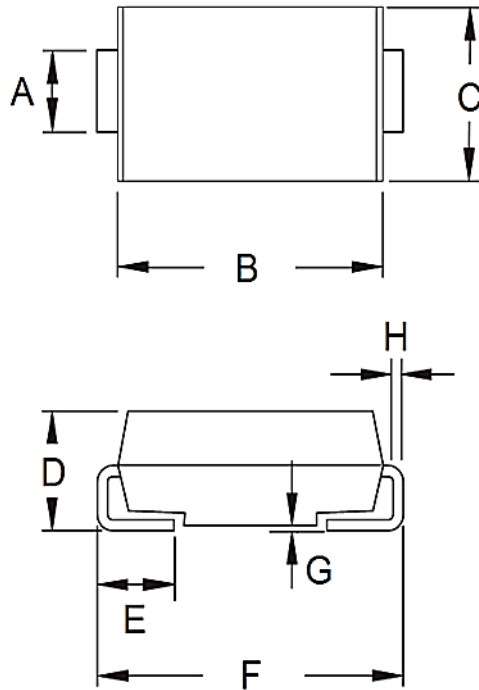


Fig.4 Typical Forward Characteristics



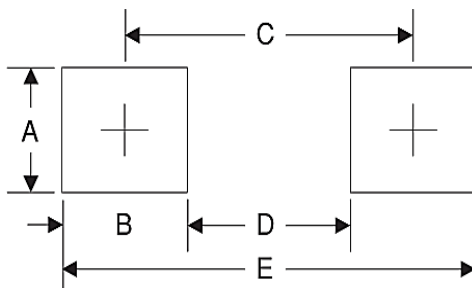
PACKAGE OUTLINE DIMENSIONS

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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