

4A, 100V - 200V Ultra Fast Surface Mount Rectifier

FEATURES

- AEC-Q101 qualified
- Planar technology
- Low power loss, high efficiency
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- High frequency switching
- DC/DC
- Snubber

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 2 whisker test
- Polarity: Indicated by cathode band
- Weight: 0.200g (approximately)

KEY PARAMETERS			
PARAMETER	VALUE	UNIT	
I _F	4	Α	
V_{RRM}	100 - 200	V	
I _{FSM}	130	Α	
T _{J MAX}	175	°C	
Package	DO-214AB (SMC)		
Configuration	Single die		









DO-214AB (SMC)



PARAMETER		SYMBOL	PU4BCH	PU4DCH	UNIT
Marking code on the device			PU4BC	PU4DC	
Repetitive peak reverse voltage		V_{RRM}	100	200	V
Reverse voltage, total rms value		V _{R(RMS)}	70	140	V
Forward current		I _F	4		Α
Surge peak forward current single half	t = 8.3ms	,	I _{FSM} 130 290		A
sine-wave superimposed on rated load	t = 1.0ms	IFSM			
Junction temperature		TJ	-55 to +175		°C
Storage temperature		T _{STG}	-55 to +175		°C

1



Taiwan Semiconductor

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	R _{eJL}	13	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	57	°C/W
Junction-to-case thermal resistance	R _{eJC}	14	°C/W

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

ELECTRICAL SPECIFICATIONS (T _A = 25°C unless otherwise noted)					
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
	I _F = 2A, T _J = 25°C		0.79	-	V
Forward voltage ⁽¹⁾	I _F = 4A, T _J = 25°C	\/	0.84	0.93	V
Forward voltage	I _F = 2A, T _J = 125°C	V _F	0.64	-	V
	I _F = 4A, T _J = 125°C		0.70	-	V
D (2)	T _J = 25°C		-	2	μΑ
Reverse current @ rated $V_R^{(2)}$	T _J = 125°C	- I _R	-	10	μΑ
Junction capacitance	1MHz, V _R = 4.0V	CJ	78	-	pF
Davoraa raaayaru tima	$I_F = 0.5A$, $I_R = 1.0A$, $I_{rr} = 0.25A$	+	-	25	ns
Reverse recovery time	$I_F = 1.0A$, $di/dt = 50A/\mu s$, $V_R = 30V$	t _{rr}	31	-	
Reverse recovery current		I _{RM}	4.9	-	Α
Reverse recovery charge	$I_F = 4.0A$, di/dt = 200A/ μ s, $V_R = 100V$	Q _{rr}	57	-	nC
Reverse recovery time		t _{rr}	24	-	ns

Notes:

- 1. Pulse test with PW = 0.3ms
- 2. Pulse test with PW = 30ms

ORDERING INFORMATION		
ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
PU4xCH	DO-214AB (SMC)	3,000/ Tape & Reel

Notes:

1. "x" defines voltage from 100V(PU4BCH) to 200V(PU4DCH)



CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

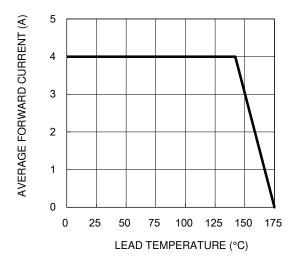


Fig.3 Typical Reverse Characteristics

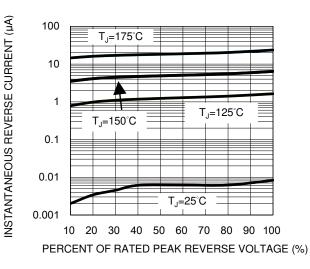


Fig.2 Typical Junction Capacitance

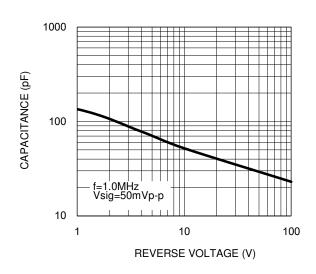


Fig.4 Typical Forward Characteristics

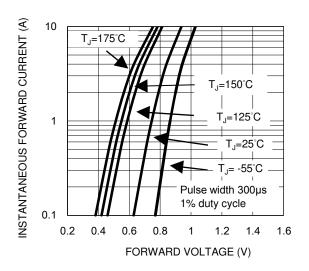
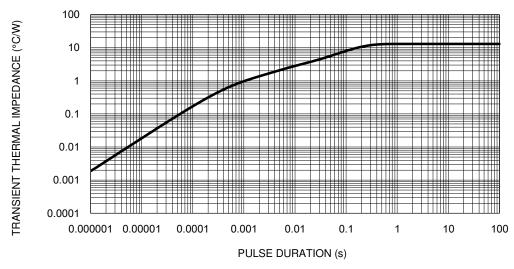


Fig.5 Typical Transient Thermal Impedance

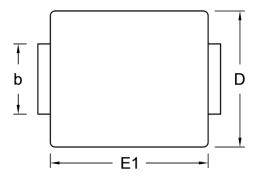


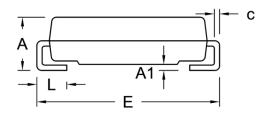




PACKAGE OUTLINE DIMENSIONS

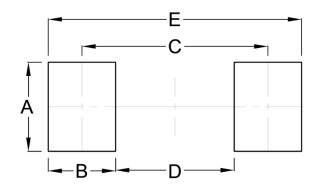
DO-214AB (SMC)





DIM.	Unit (mm)		Unit ((inch)
Dilvi.	Min.	Max.	Min.	Max.
Α	2.00	2.62	0.079	0.103
A1	0.10	0.20	0.004	0.008
b	2.90	3.20	0.114	0.126
С	0.15	0.31	0.006	0.012
D	5.59	6.22	0.220	0.245
E	7.75	8.13	0.305	0.320
E1	6.60	7.11	0.260	0.280
L	1.00	1.60	0.039	0.063

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
Α	3.30	0.130
В	2.50	0.098
С	6.90	0.272
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

Taiwan Semiconductor

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.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

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.