

## 8A, 600V Ultra Fast Surface Mount Rectifier

### FEATURES

- 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

- DC to DC converter
- Switching mode converters and inverters
- Lighting application
- Snubber
- Freewheeling application

### 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: 0.202g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_F$	8	A
$V_{RRM}$	600	V
$I_{FSM}$	100	A
$T_{J MAX}$	150	°C
Package	DO-214AB (SMC)	
Configuration	Single die	



**DO-214AB (SMC)**



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

PARAMETER	SYMBOL	PU8JC	UNIT
Marking code on the device		PU8JC	
Repetitive peak reverse voltage	$V_{RRM}$	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	V
Forward current	$I_F$	8	A
Surge peak forward current single half sine-wave superimposed on rated load	$I_{FSM}$	100	A
		200	
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	$R_{\Theta JL}$	11.5	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	52.0	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	10.7	°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 <sup>(1)</sup>	$I_F = 4\text{A}, T_J = 25^\circ\text{C}$	$V_F$	1.49	-	V
	$I_F = 8\text{A}, T_J = 25^\circ\text{C}$		1.72	2.0	V
	$I_F = 4\text{A}, T_J = 125^\circ\text{C}$		1.11	-	V
	$I_F = 8\text{A}, T_J = 125^\circ\text{C}$		1.34	-	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ\text{C}$	$I_R$	-	5	$\mu\text{A}$
	$T_J = 125^\circ\text{C}$		6	-	$\mu\text{A}$
Junction capacitance	1MHz, $V_R = 4.0\text{V}$	$C_J$	58	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	$t_{rr}$	-	25	ns
	$I_F = 1.0\text{A}, dI/dt = 50\text{A}/\mu\text{s}, V_R = 30\text{V}$		26	-	
Reverse recovery current	$I_F = 8.0\text{A}, dI/dt = 200\text{A}/\mu\text{s}, V_R = 400\text{V}$	$I_{RM}$	3.4	-	A
Reverse recovery charge		$Q_{rr}$	83	-	nC
Reverse recovery time		$t_{rr}$	47	-	ns

**Notes:**

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

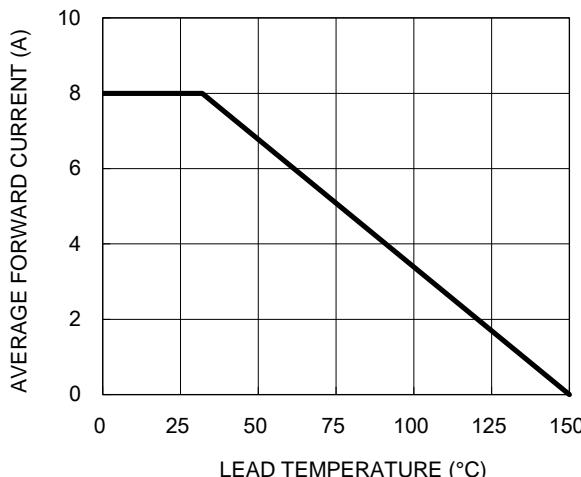
**ORDERING INFORMATION**

ORDERING CODE	PACKAGE	PACKING
PU8JC	DO-214AB (SMC)	3,000/ Tape & Reel

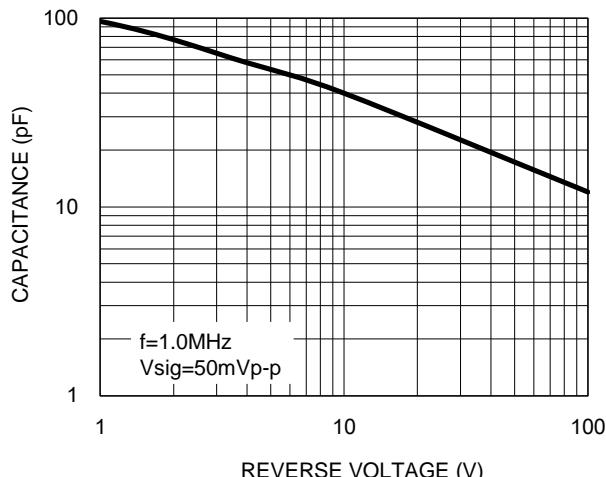
## CHARACTERISTICS CURVES

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

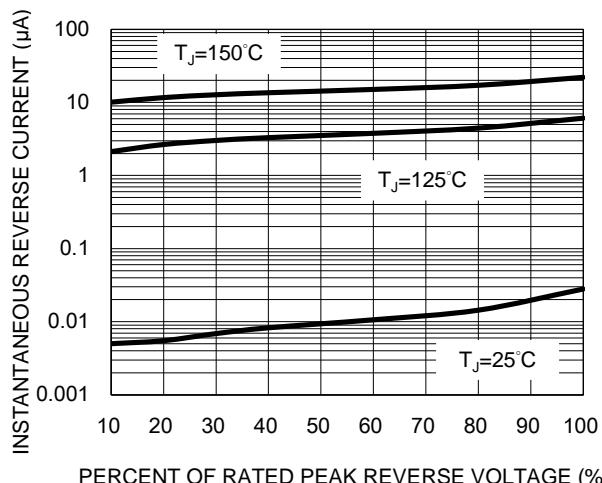
**Fig.1 Forward Current Derating Curve**



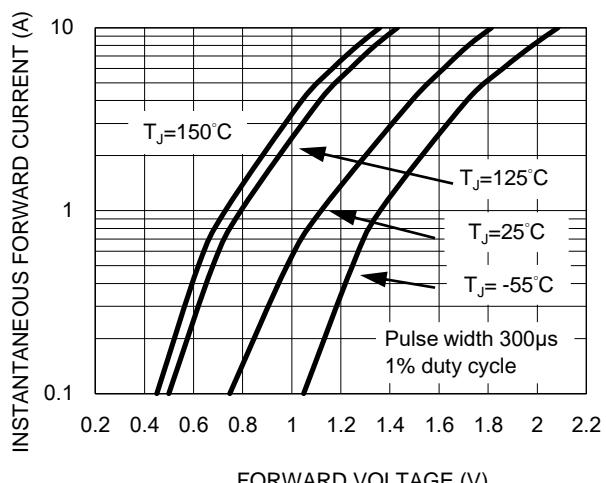
**Fig.2 Typical Junction Capacitance**



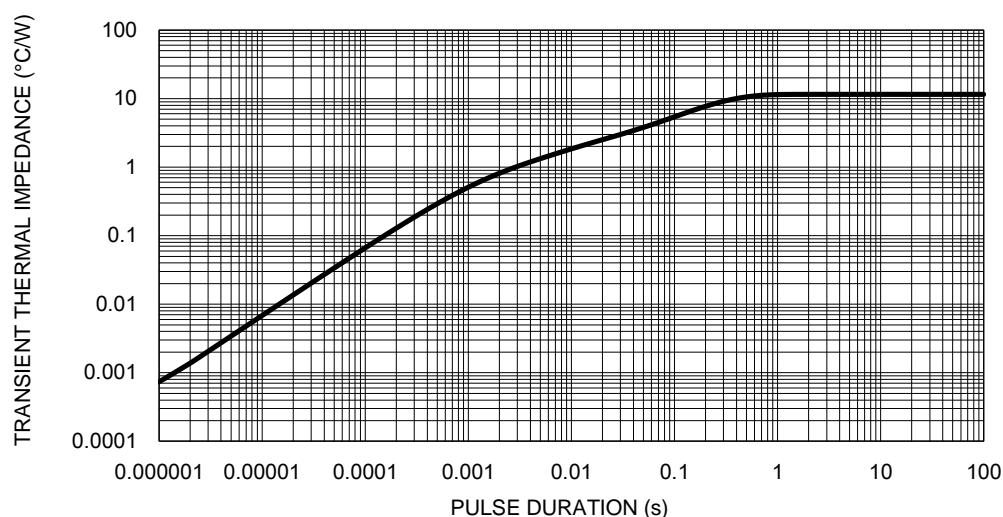
**Fig.3 Typical Reverse Characteristics**

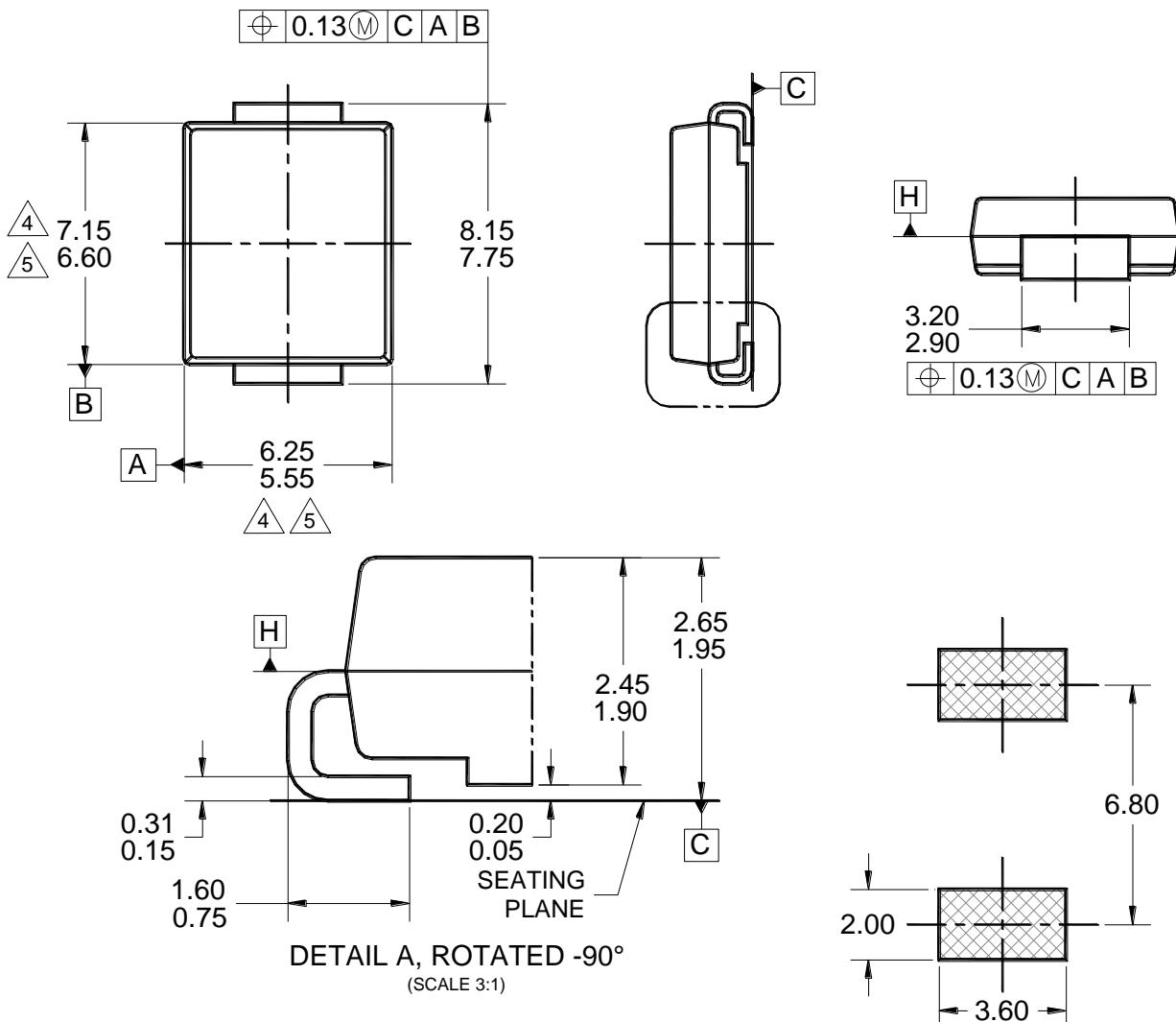
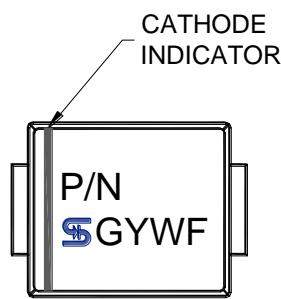


**Fig.4 Typical Forward Characteristics**



**Fig.5 Typical Transient Thermal Impedance**



**PACKAGE OUTLINE DIMENSIONS**
**DO-214AB (SMC)**

**SUGGESTED PAD LAYOUT**

**MARKING DIAGRAM**

P/N = MARKING CODE  
 G = GREEN COMPOUND  
 YW = DATE CODE  
 F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: JEDEC DO-214, VARIATION AB, ISSUE D.
- 4 MOLDED PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH.
- 5 MOLDED PLASTIC BODY LATERAL DIMENSIONS TO BE DETERMINED AT DATUM PLANE H.
6. DWG NO. REF: HQ2SD07-DO214SMC-036 REV A.

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