

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

FEATURES

- AEC-Q101 qualified
- Glass passivated chip junction
- Ideal for automated placement
- Fast switching for high efficiency
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

- DC to DC converter
- Automotive application
- Car lighting
- Snubber
- General purpose

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: 0.210g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	3	A
V_{RRM}	50 - 1000	V
I_{FSM}	100	A
$T_{J\ MAX}$	175	°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	RS 3AH	RS 3BH	RS 3DH	RS 3GH	RS 3JH	RS 3KH	RS 3MH	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
Peak forward surge current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	100								A
Junction temperature	T_J	- 55 to +175								°C
Storage temperature	T_{STG}	- 55 to +175								°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	15	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	50	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage ⁽¹⁾	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	V_F	-	1.3	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	10	μA
	$T_J = 125^\circ\text{C}$		-	250	μA
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	-	150	ns
			-	250	ns
			-	500	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING
RS3xH	DO-214AB (SMC)	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 50V(RS3AH) to 1000V(RS3MH)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

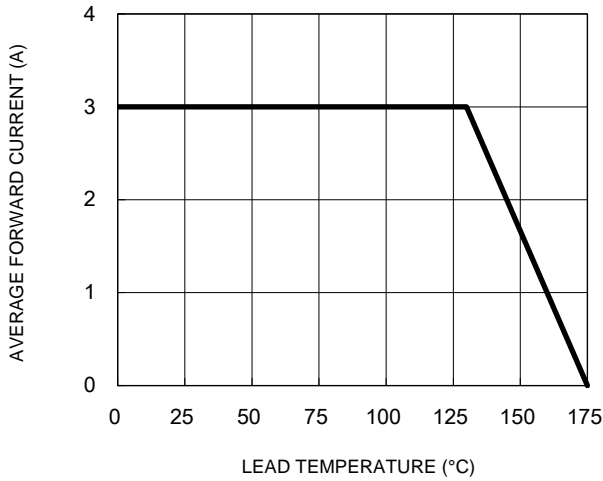


Fig.2 Typical Junction Capacitance

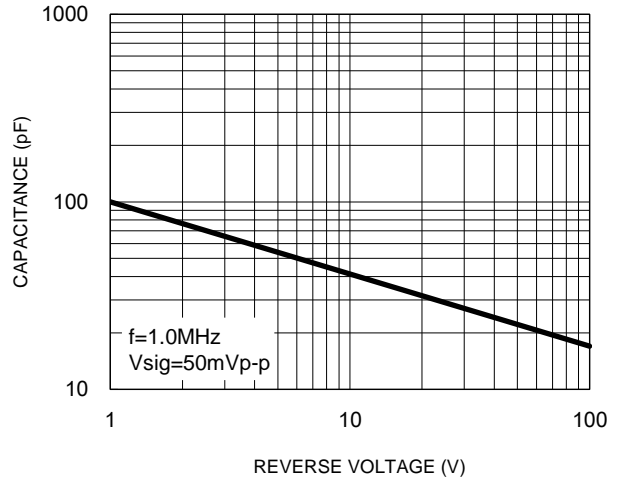


Fig.3 Typical Reverse Characteristics

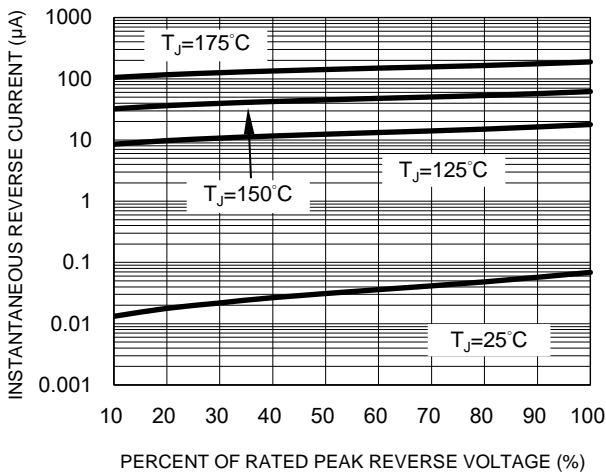


Fig.4 Typical Forward Characteristics

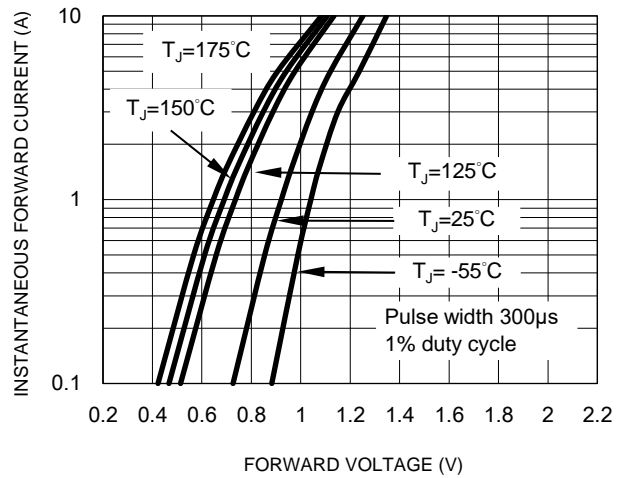
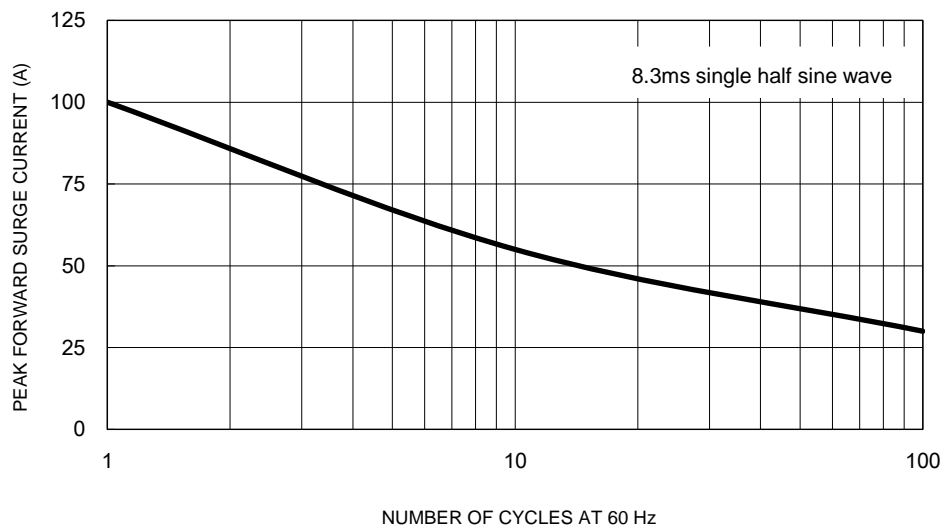


Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

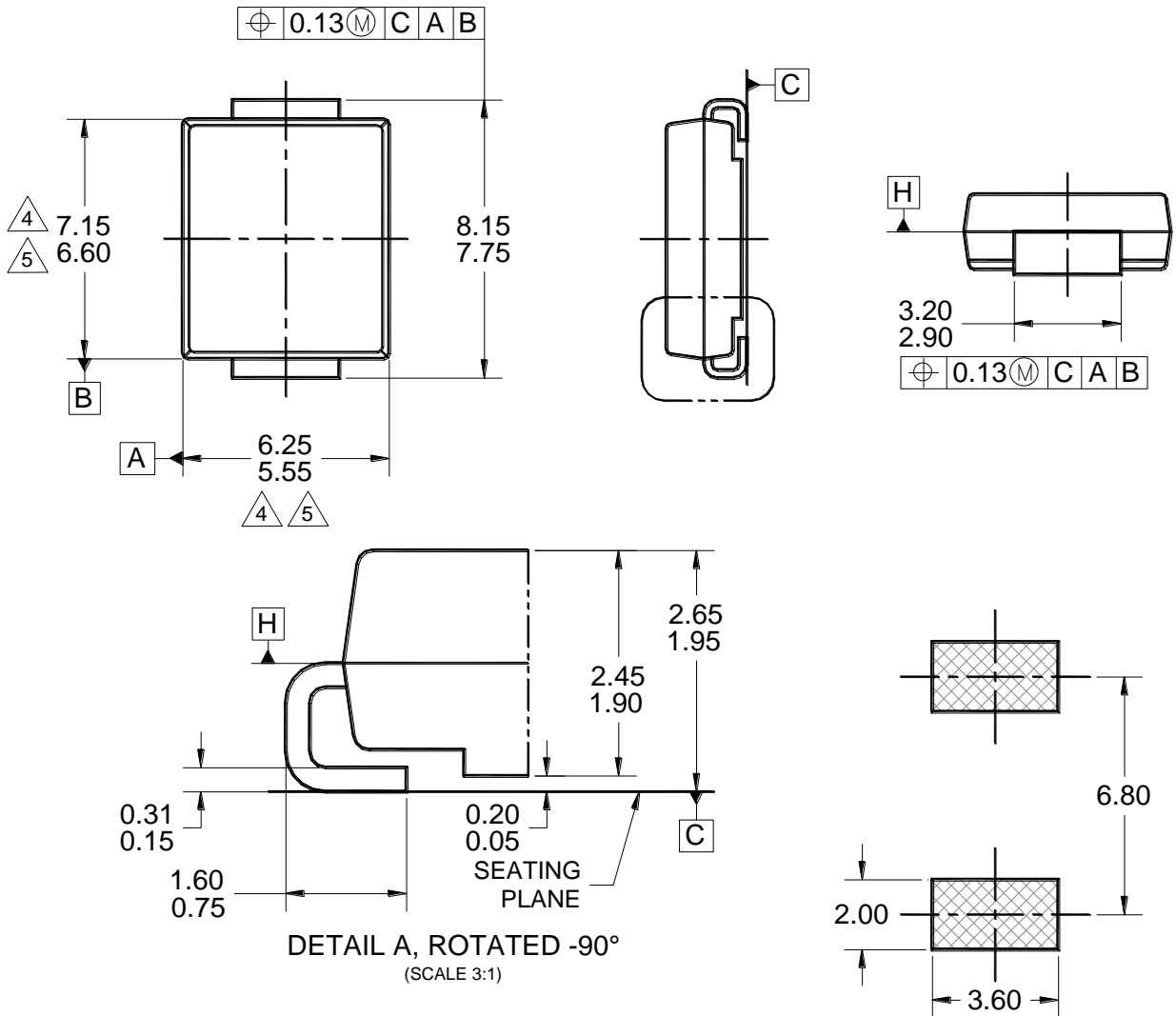
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram

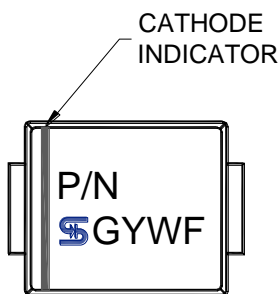


PACKAGE OUTLINE DIMENSIONS

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

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

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