2A, 50V - 1000V Fast Recovery Surface Mount Rectifier

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- Glass passivated chip junction
- Fast switching for high efficiency
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- Converter

MECHANICAL DATA

- Case: DO-214AA (SMB)
- 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: 0.090g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	2	A
V_{RRM}	50 - 1000	V
I_{FSM}	50	A
$T_{J\ MAX}$	175	°C
Package	DO-214AA (SMB)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE



DO-214AA (SMB)



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)									
PARAMETER	**SYMBOL**	**RS2A**	**RS2B**	**RS2D**	**RS2G**	**RS2J**	**RS2K**	**RS2M**	**UNIT**
Marking code on the device		RS2A	RS2B	RS2D	RS2G	RS2J	RS2K	RS2M	
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	2							A
Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	50							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-ambient thermal resistance	$R_{\Theta JA}$	55	°C/W
Junction-to-lead thermal resistance	$R_{\Theta JL}$	18	°C/W

ELECTRICAL SPECIFICATIONS (TA = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage(1)		I_F = 2A, T_J = 25°C	V_F	-	1.3	V
Reverse current @ rated V_R(2)		T_J = 25°C	I_R	-	5	μA
		T_J = 125°C		-	50	μA
Junction capacitance		1MHz, V_R = 4.0V	C_J	50	-	pF
Reverse recovery time	RS2A	I_F = 0.5A, I_R = 1.0A I_{rr} = 0.25A	t_{rr}	-	150	ns
	RS2B					
	RS2D					
	RS2G					
	RS2J			-	250	ns
	RS2K			-	500	ns
	RS2M					

Notes:

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

ORDERING INFORMATION

ORDERING CODE(1)	PACKAGE	PACKING
RS2x	DO-214AA (SMB)	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 50V(RS2A) to 1000V(RS2M)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

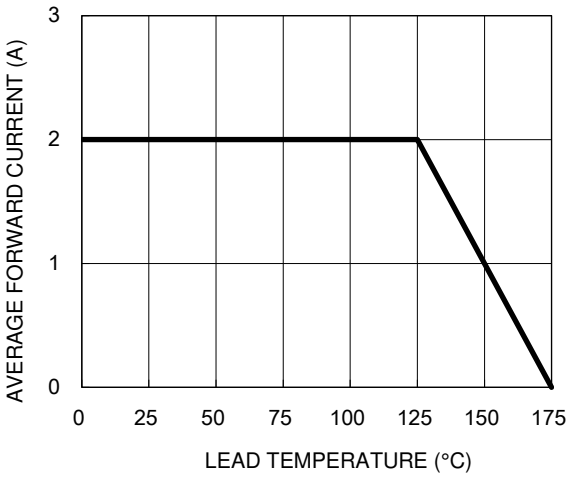


Fig.2 Typical Junction Capacitance

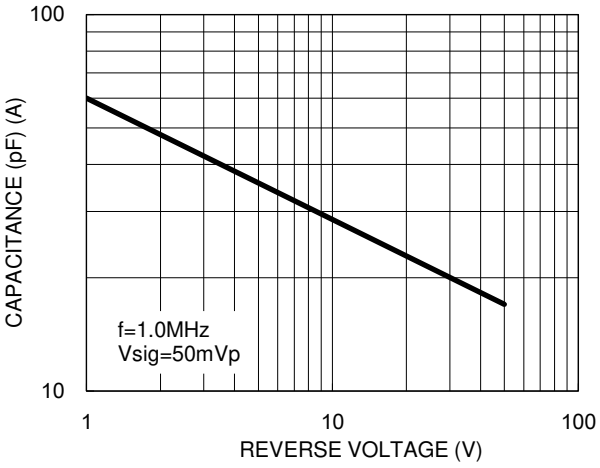


Fig.3 Typical Reverse Characteristics

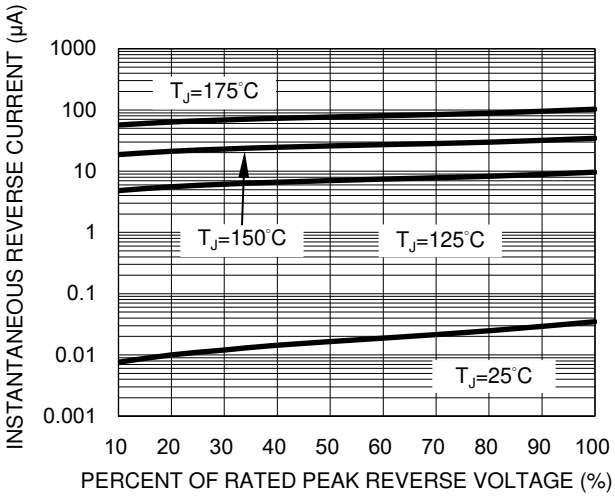


Fig.4 Typical Forward Characteristics

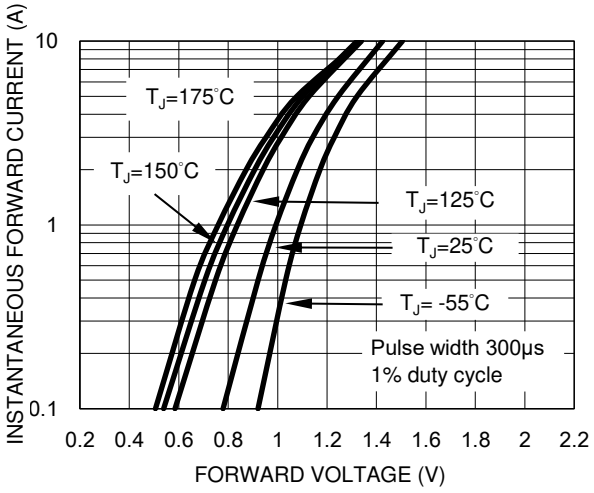
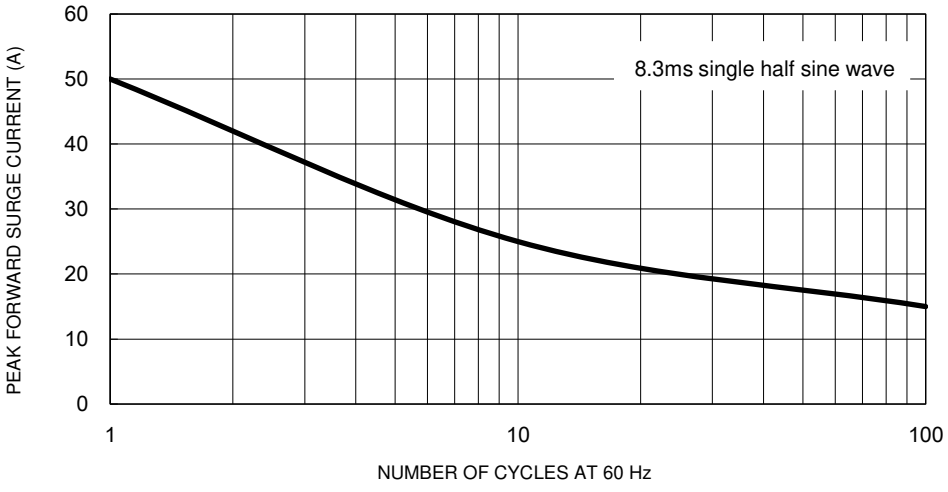


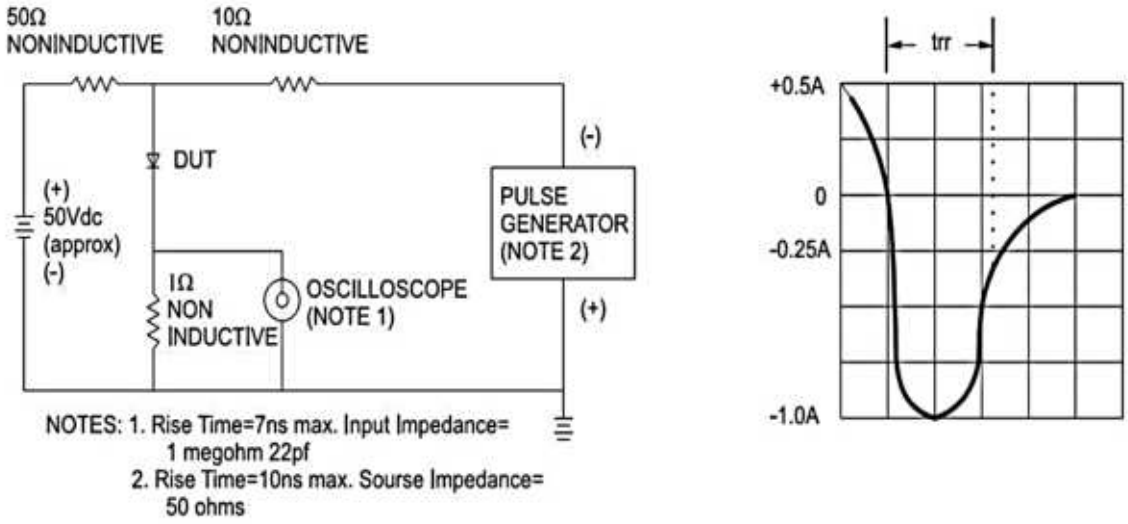
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

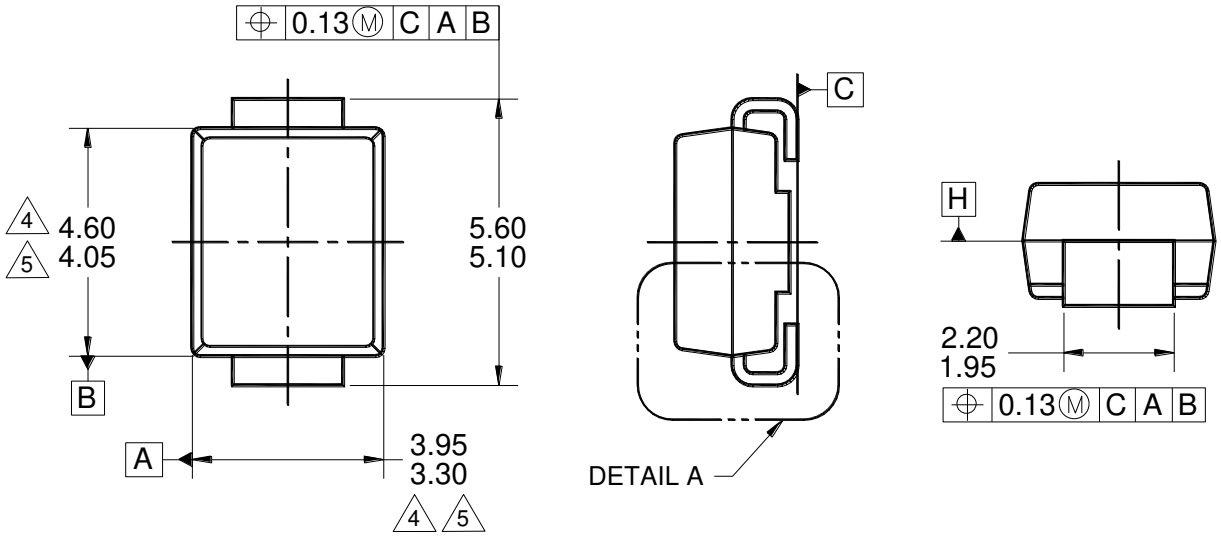
(T_A = 25°C unless otherwise noted)

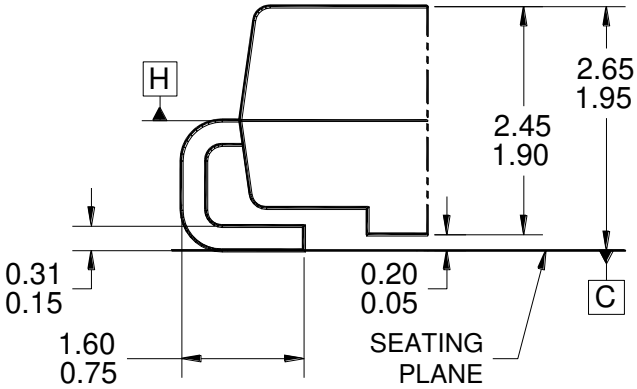
Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



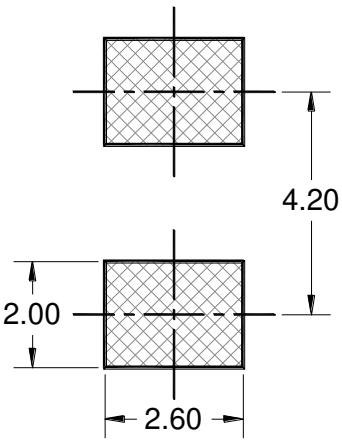
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)

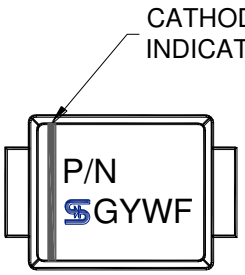




DETAIL A, ROTATED -90°
(SCALE 2:1)



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 AA, 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-DO214SMB-035 REV A.

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