

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

### FEATURES

- AEC-Q101 qualified
- 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 according to IEC 61249-2-21

### APPLICATIONS

- DC to DC converter
- Automotive application
- Car lighting
- Snubber
- Freewheeling application

### 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
$T_{JMAX}$	150	°C
Package	DO-214AA (SMB)	
Configuration	Single die	



**DO-214AA (SMB)**



ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)									
PARAMETER	SYMBOL	RS 2AH	RS 2BH	RS 2DH	RS 2GH	RS 2JH	RS 2KH	RS 2MH	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 +150							°C
Storage temperature	$T_{STG}$	- 55 to +150							°C

<b>THERMAL PERFORMANCE</b>			
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

<b>ELECTRICAL SPECIFICATIONS</b> (TA = 25°C unless otherwise noted)								
PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT			
Forward voltage <sup>(1)</sup>	$I_F = 2A, T_J = 25^\circ C$	$V_F$	-	1.3	V			
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ C$	$I_R$	-	5	μA			
	$T_J = 125^\circ C$		-	50	μA			
Junction capacitance	1MHz, $V_R = 4.0V$	$C_J$	50	-	pF			
Reverse recovery time	RS2AH	$I_F = 0.5A, I_R = 1.0A$ $I_{rr} = 0.25A$	$t_{rr}$	-	150	ns		
	RS2BH					ns		
	RS2DH					ns		
	RS2GH					ns		
	RS2JH					-	250	ns
	RS2KH					-	500	ns
	RS2MH					ns		

**Notes:**

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

<b>ORDERING INFORMATION</b>		
ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
RS2xH	DO-214AA (SMB)	3,000 / Tape & Reel

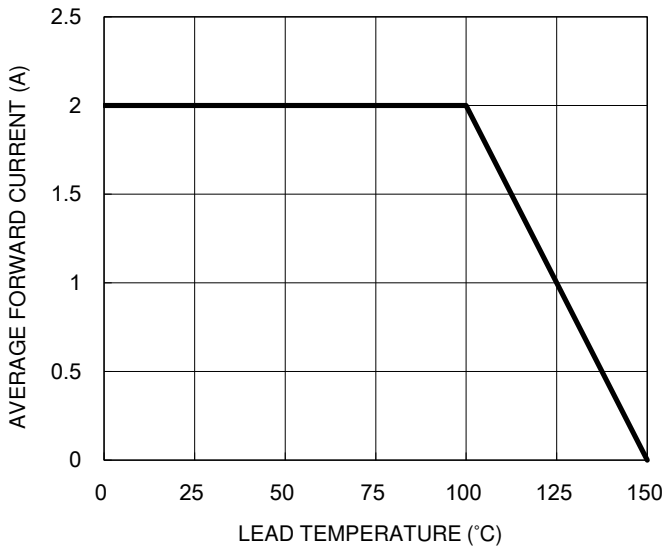
**Notes:**

1. "x" defines voltage from 50V(RS2AH) to 1000V(RS2MH)

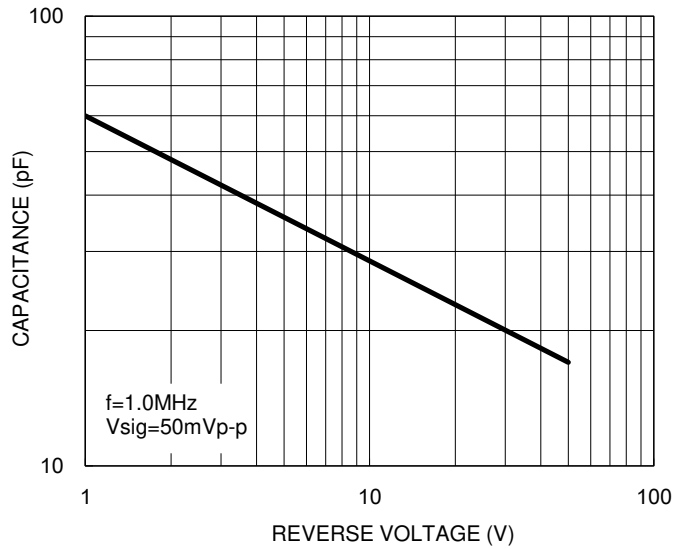
**CHARACTERISTICS CURVES**

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

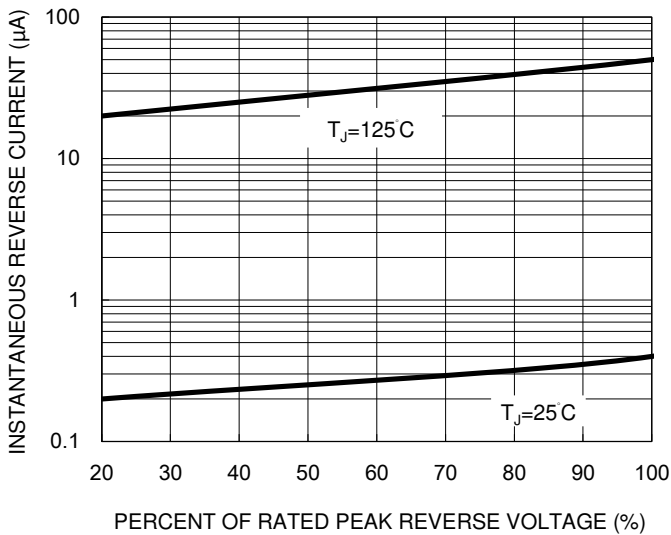
**Fig.1 Forward Current Derating Curve**



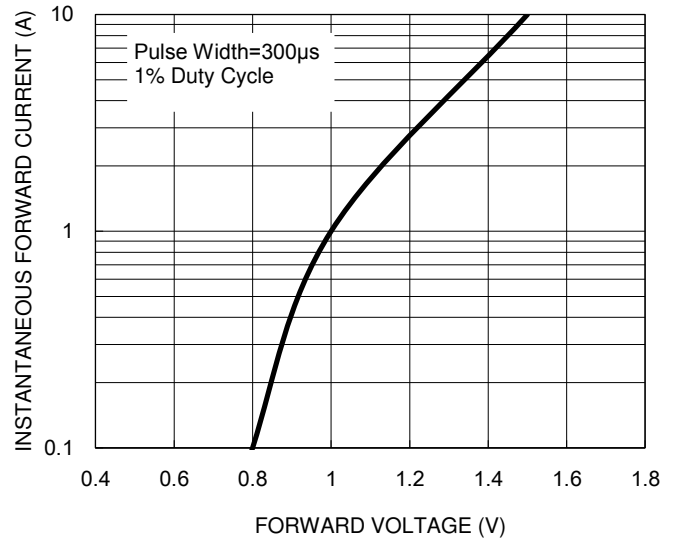
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



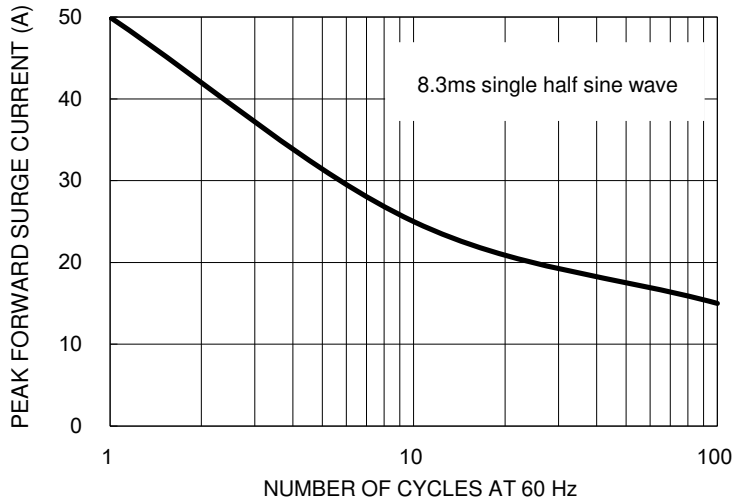
**Fig.4 Typical Forward Characteristics**



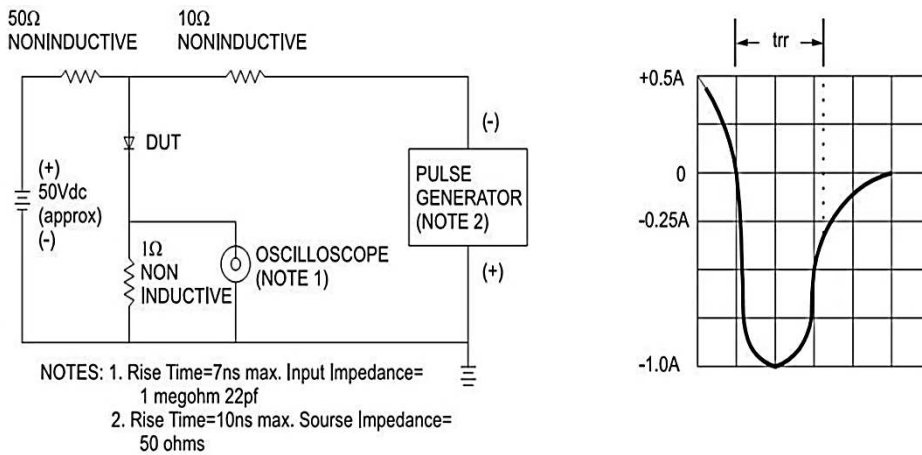
**CHARACTERISTICS CURVES**

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

**Fig.5 Maximum Non-repetitive Forward Surge Current**

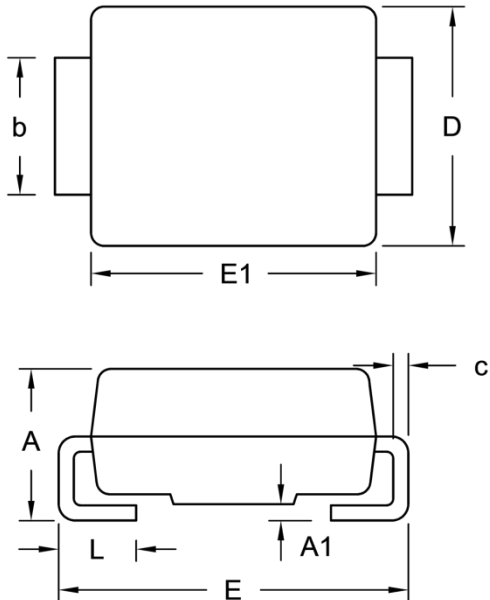


**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**



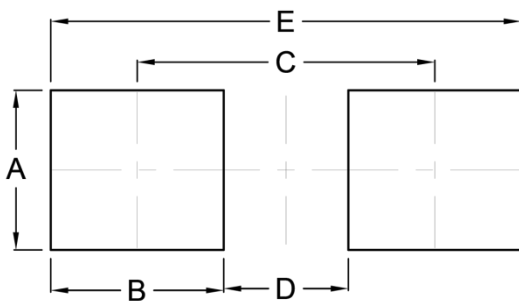
**PACKAGE OUTLINE DIMENSIONS**

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.05	0.20	0.002	0.008
b	1.95	2.20	0.077	0.087
c	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	5.10	5.60	0.201	0.220
E1	4.05	4.60	0.159	0.181
L	0.75	1.60	0.030	0.063

**SUGGESTED PAD LAYOUT**



Symbol	Unit (mm)	Unit (inch)
A	2.30	0.091
B	2.50	0.098
C	4.30	0.169
D	1.80	0.071
E	6.80	0.268

**MARKING DIAGRAM**



- P/N = Marking Code
- G = Green Compound
- YW = Date Code
- F = Factory Code

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