

## 2A, 50V - 1400V Surface Mount Rectifier

### FEATURES

- AEC-Q101 qualified
- Glass passivated chip junction
- Ideal for automated placement
- Low forward voltage drop
- High surge current capability
- 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 - 1400	V
$I_{FSM}$	50	A
$T_{J\ MAX}$	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	S2A H	S2B H	S2D H	S2G H	S2J H	S2K H	S2M H	S2Q H	S2V H	UNIT
Marking code on the device		S2A	S2B	S2D	S2G	S2J	S2K	S2M	S2Q	S2V	
Repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	1200	1400	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	140	280	420	560	700	840	980	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

**THERMAL PERFORMANCE**

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	16	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	53	°C/W

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage <sup>(1)</sup>	$I_F = 2A, T_J = 25^\circ C$	$V_F$	-	1.15	V
Reverse current @ rated $V_R$ <sup>(2)</sup>	$T_J = 25^\circ C$	$I_R$	-	1	μA
	$T_J = 125^\circ C$		-	125	μA
Junction capacitance	1MHz, $V_R = 4.0V$	$C_J$	30	-	pF
Reverse recovery time	$I_F = 0.5A, I_R = 1.0A$ $I_{rr} = 0.25A$	$t_{rr}$	1500	-	ns

**Notes:**

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

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
S2xH	DO-214AA (SMB)	3,000 / Tape & Reel

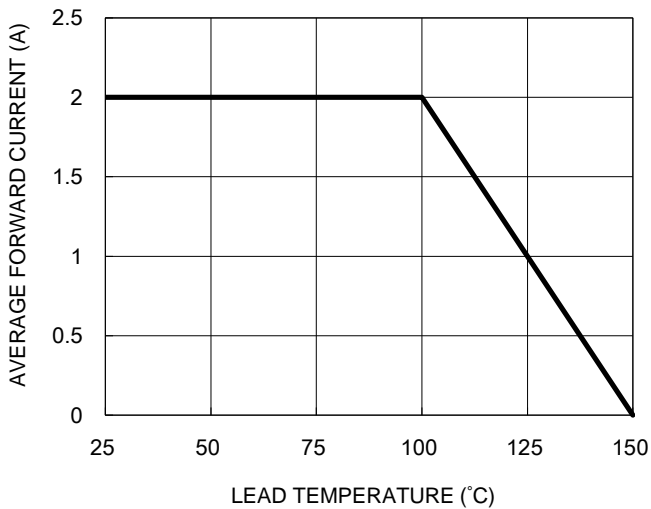
**Notes:**

1. "x" defines voltage from 50V(S2AH) to 1400V(S2VH)

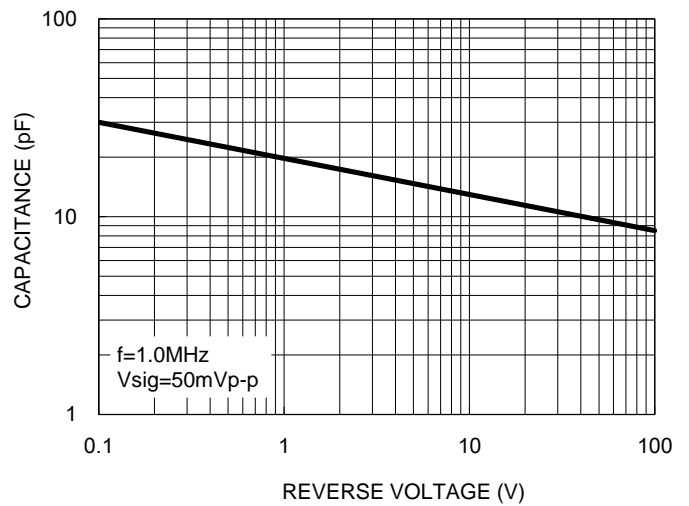
**CHARACTERISTICS CURVES**

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

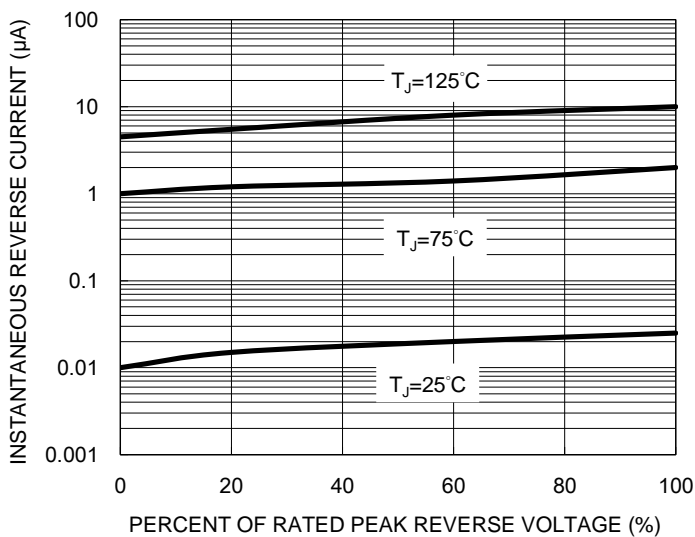
**Fig.1 Forward Current Derating Curve**



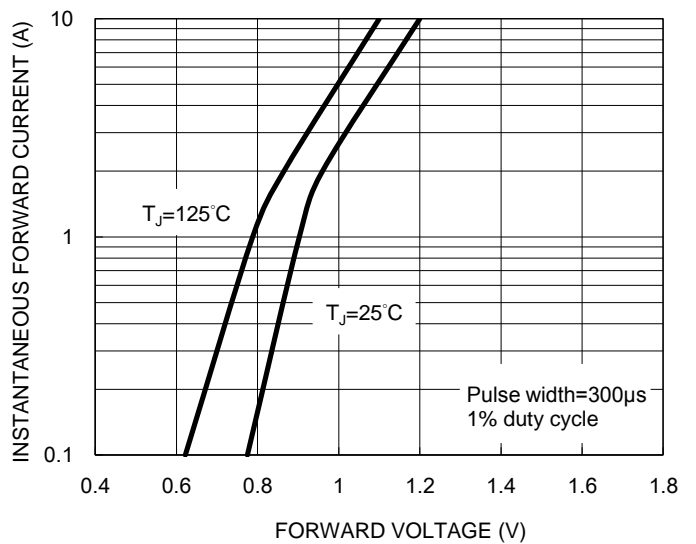
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



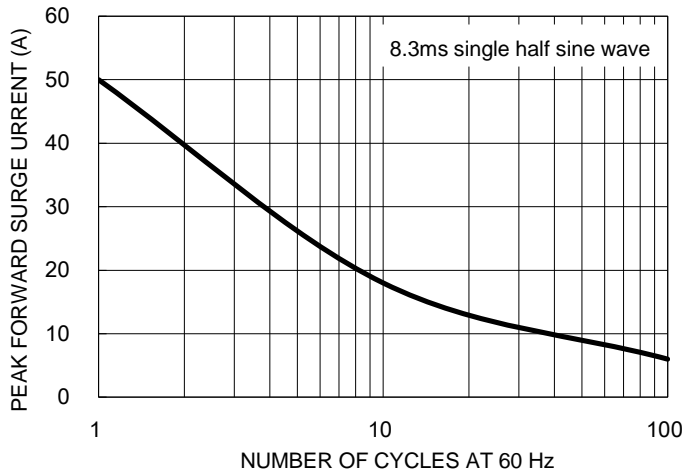
**Fig.4 Typical Forward Characteristics**



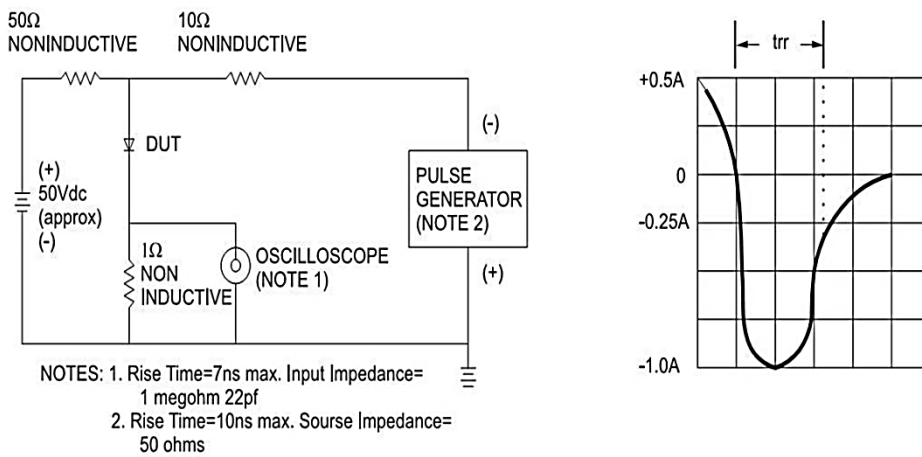
**CHARACTERISTICS CURVES**

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

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

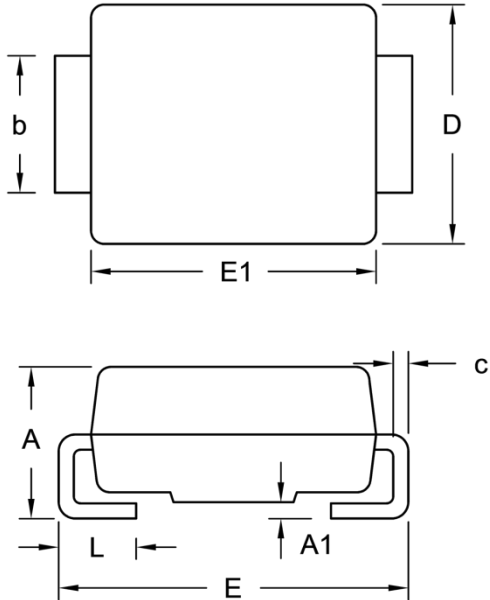


**Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram**



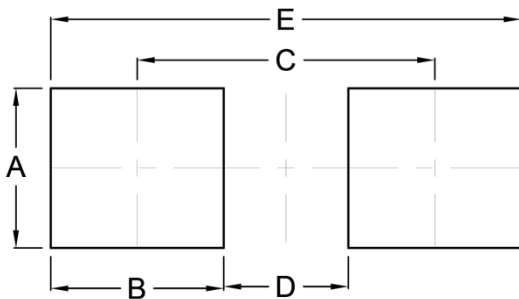
**PACKAGE OUTLINE DIMENSIONS**

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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