

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

### FEATURES

- 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

- 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 - 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	S2B	S2D	S2G	S2J	S2K	S2M	S2Q	S2V	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:**

- Pulse test with PW = 0.3ms
- Pulse test with PW = 30ms

**ORDERING INFORMATION**

ORDERING CODE <sup>(1)</sup>	PACKAGE	PACKING
S2x	DO-214AA (SMB)	3,000 / Tape & Reel

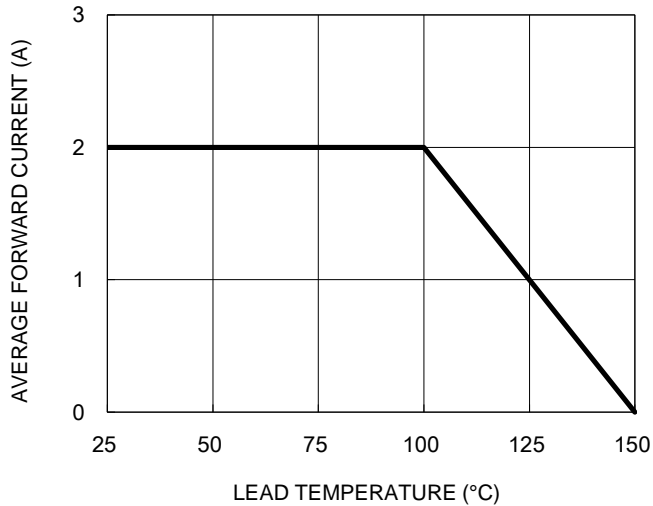
**Notes:**

- "x" defines voltage from 50V(S2A) to 1400V(S2V)

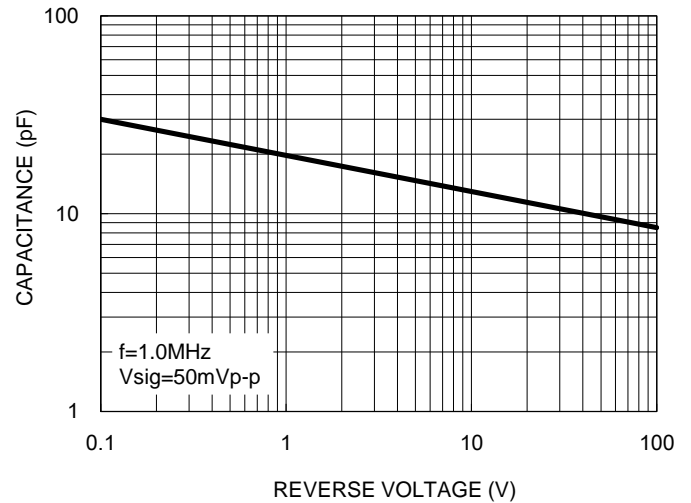
## CHARACTERISTICS CURVES

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

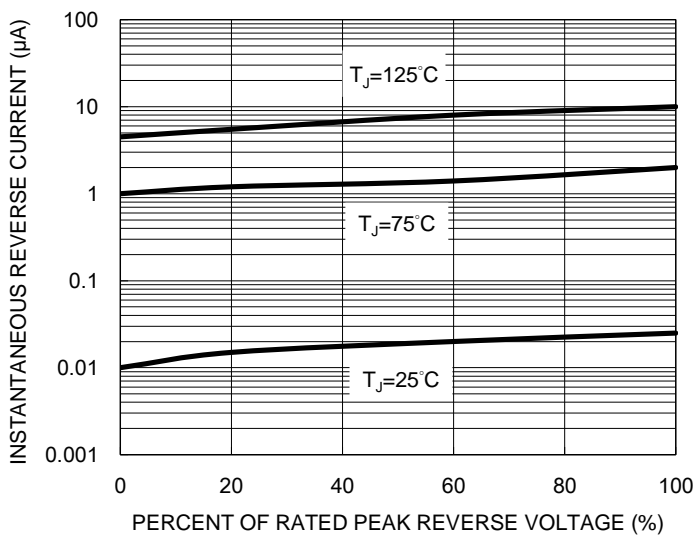
**Fig.1 Forward Current Derating Curve**



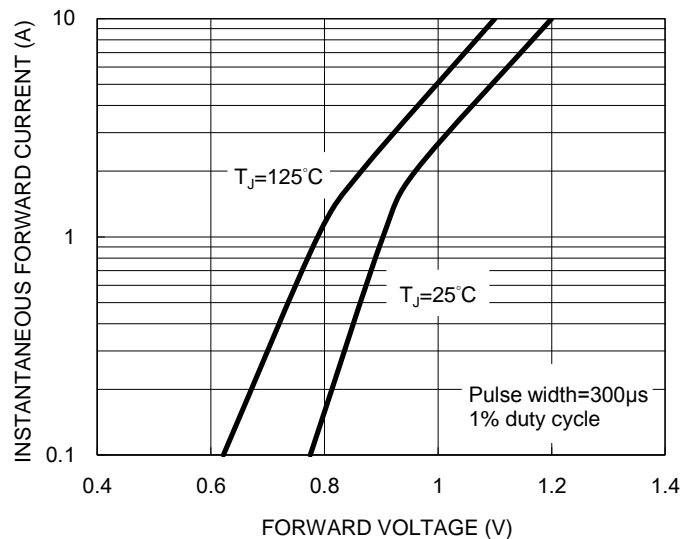
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



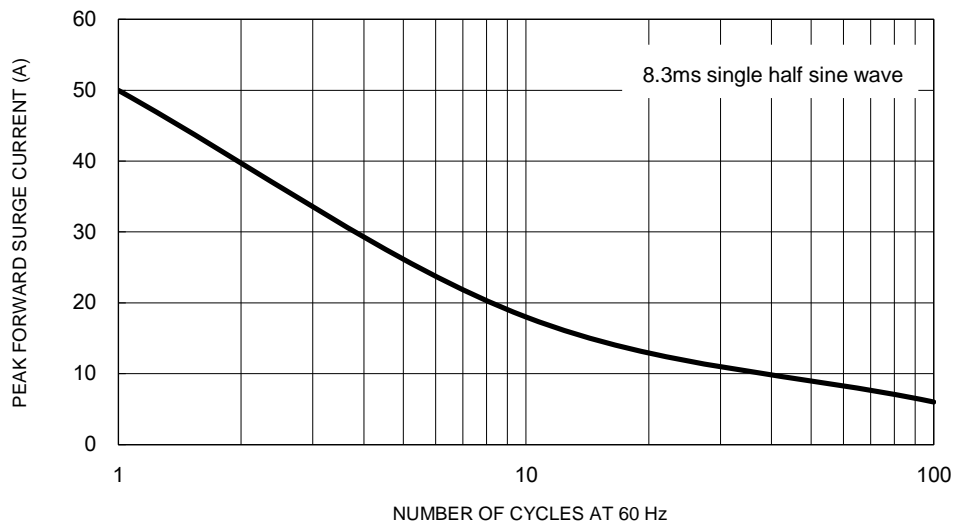
**Fig.4 Typical Forward Characteristics**



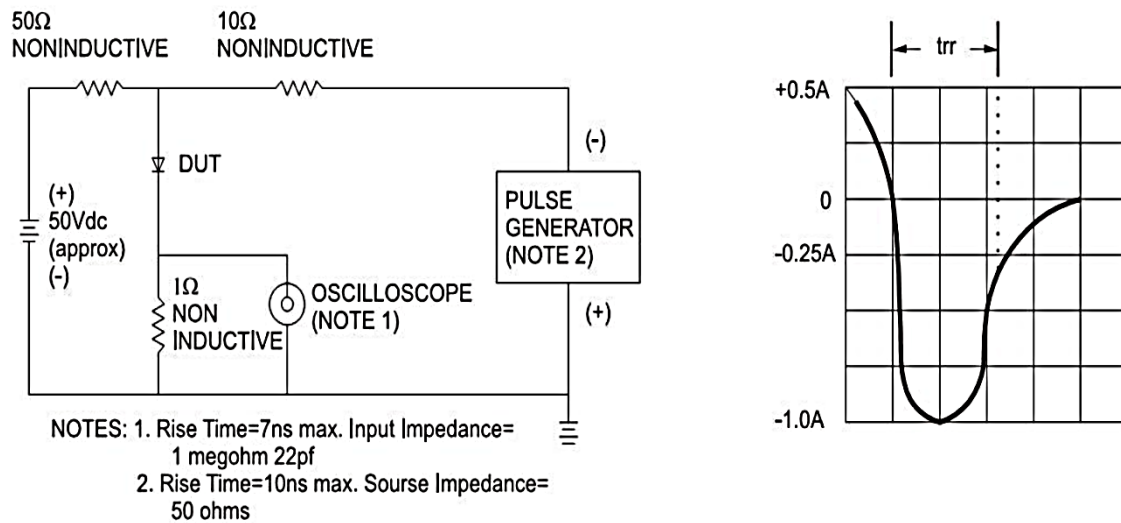
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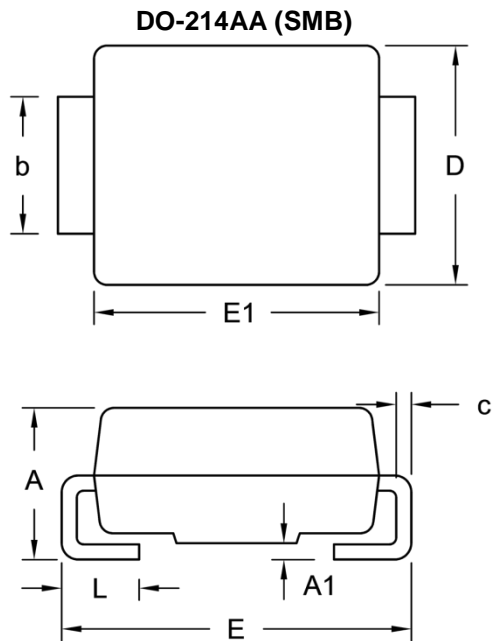
**Fig.5 Maximum Non-Repetitive Forward Surge Current**



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

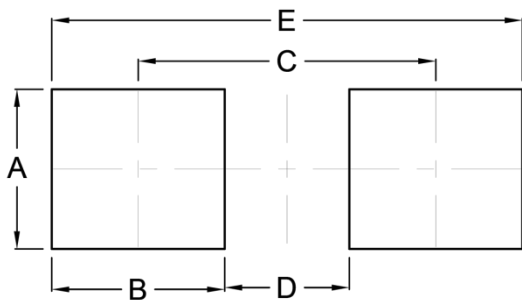


## PACKAGE OUTLINE DIMENSIONS



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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