

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 ⁽¹⁾	$I_F = 2A, T_J = 25^\circ C$	V_F	-	1.15	V
Reverse current @ rated V_R ⁽²⁾	$T_J = 25^\circ C$	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 ⁽¹⁾	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

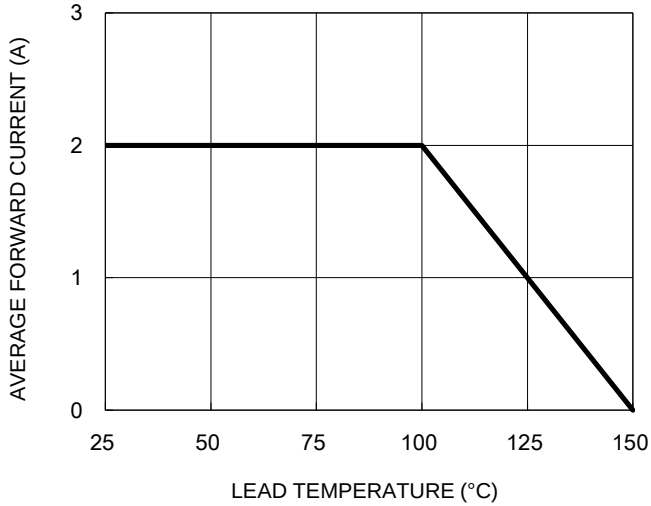


Fig.2 Typical Junction Capacitance

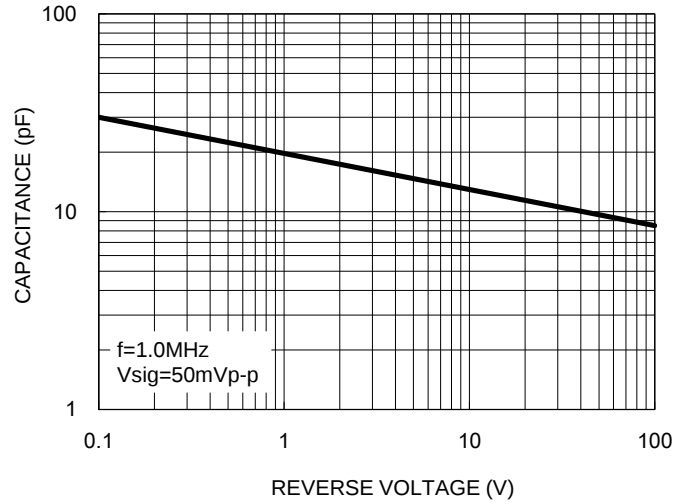


Fig.3 Typical Reverse Characteristics

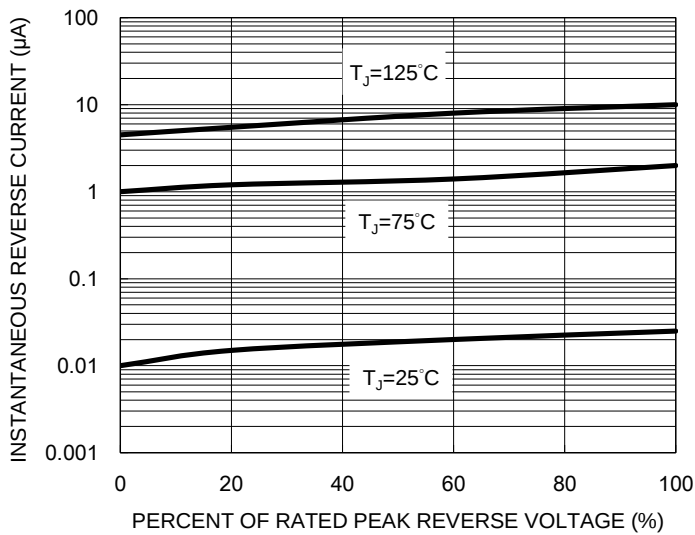
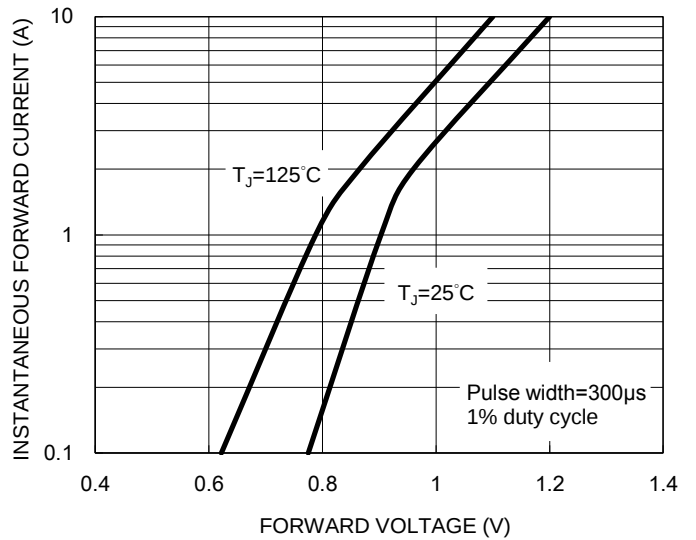


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.5 Maximum Non-Repetitive Forward Surge Current

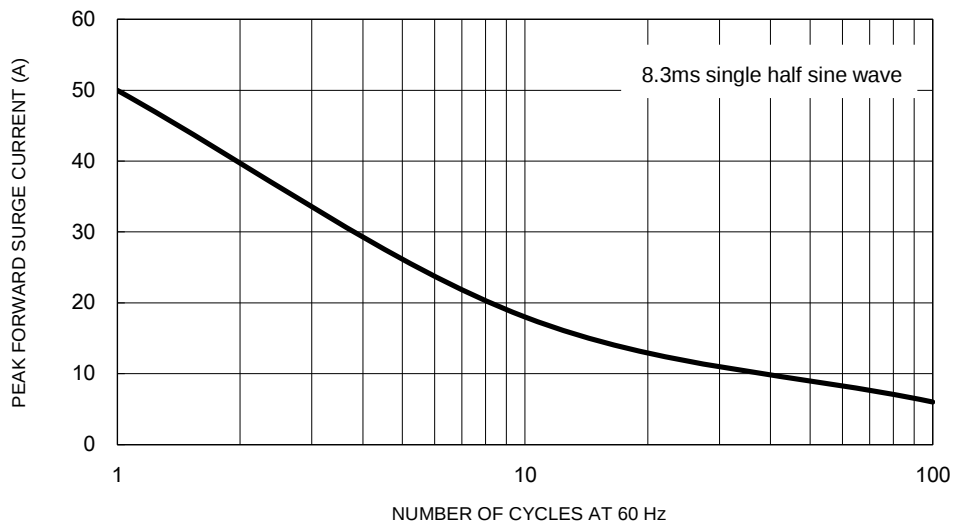
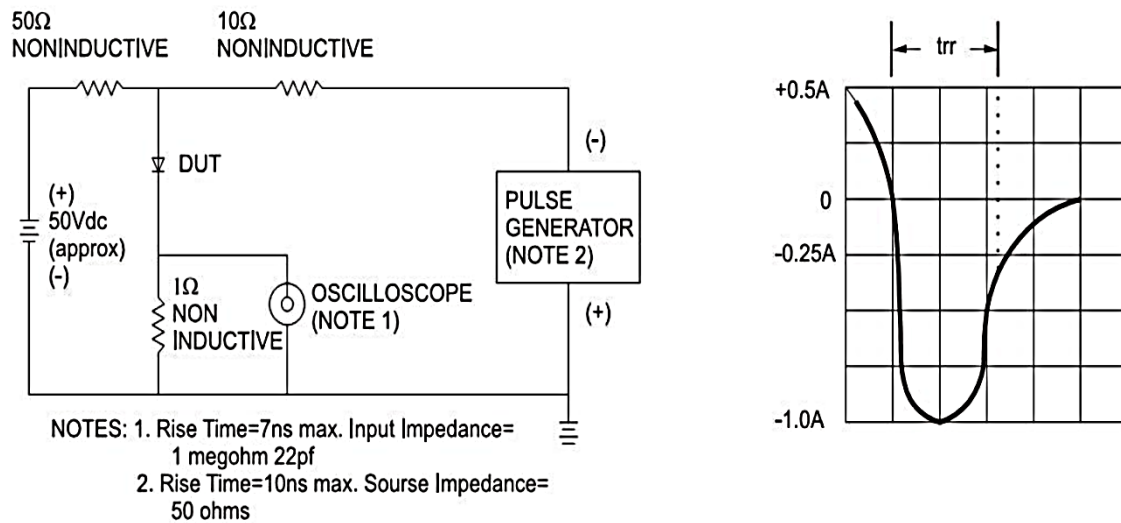
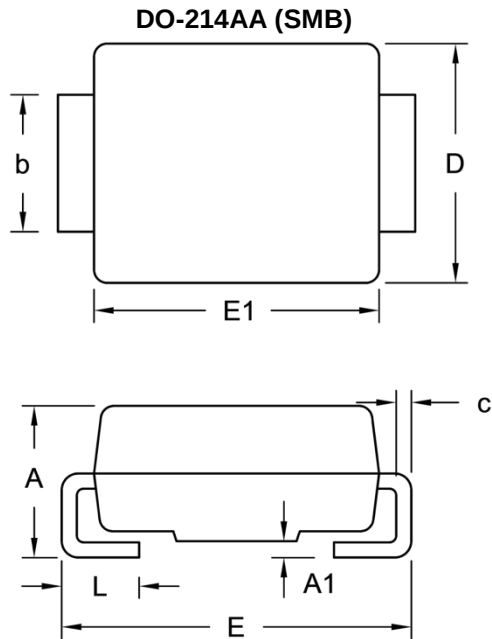


Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram

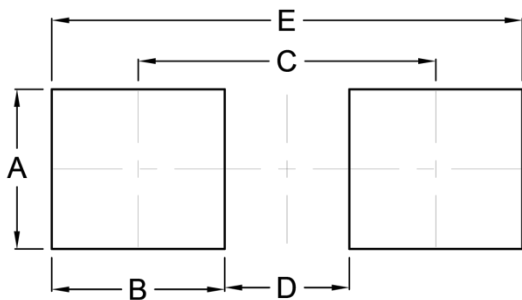


PACKAGE OUTLINE DIMENSIONS



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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