

3A, 50V - 600V Glass Passivated Super Fast Rectifier

FEATURES

- Glass passivated chip junction
- High efficiency, Low V_F
- High reliability
- High surge current capability
- Low power loss
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- TV
- Monitor

MECHANICAL DATA

- Case: DO-201AD
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Pure tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 1.1 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	3	A
V_{RRM}	50 - 600	V
I_{FSM}	125	A
T_{JMAX}	150	°C
Package	DO-201AD	
Configuration	Single die	



DO-201AD

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

PARAMETER	SYMBOL	SF	SF	SF	SF	SF	SF	SF	SF	UNIT
		31G-A	32G-A	33G-A	34G-A	35G-A	36G-A	37G-A	38G-A	
Marking code on the device		SF31G	SF32G	SF33G	SF34G	SF35G	SF36G	SF37G	SF38G	
Repetitive peak reverse voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	35	70	105	140	210	280	350	420	V
Forward current	$I_{F(AV)}$	3								A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	125								A
Junction temperature	T_J	- 55 to +150								°C
Storage temperature	T_{STG}	- 55 to +150								°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-lead thermal resistance per diode	$R_{\theta JL}$	10	°C/W
Junction-to- ambient thermal resistance per diode	$R_{\theta JA}$	35	°C/W
Junction-to-case thermal resistance per diode	$R_{\theta JC}$	9	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	SF31G-A	$I_F = 3\text{A}, T_J = 25^\circ\text{C}$	V_F	-	0.95	V
	SF32G-A					
	SF33G-A					
	SF34G-A			-	1.30	V
	SF35G-A					
	SF36G-A					
Reverse current @ rated V_R per diode ⁽²⁾	SF37G-A	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	SF38G-A					
Junction capacitance	SF31G-A	1 MHz, $V_R = 4.0\text{V}$	C_J	80	-	pF
	SF32G-A					
	SF33G-A					
	SF34G-A			60	-	pF
	SF35G-A					
	SF36G-A					
Reverse recovery time	SF37G-A	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$	t_{rr}	-	35	ns
	SF38G-A					

Notes:

1. Pulse test with $PW = 0.3\text{ ms}$
2. Pulse test with $PW = 30\text{ ms}$

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
SF3xG-A (Note 1, 2)	A0	G	DO-201AD	500 / Ammo box
	R0		DO-201AD	1,250 / 13" Paper reel
	B0		DO-201AD	500 / Bulk packing

Notes:

1. "x" defines voltage from 50V (SF31G-A) to 600V (SF38G-A)
2. Whole series with green compound (halogen-free)

EXAMPLE P/N				
EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SF31G-A A0G	SF31G-A	A0	G	Green compound

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

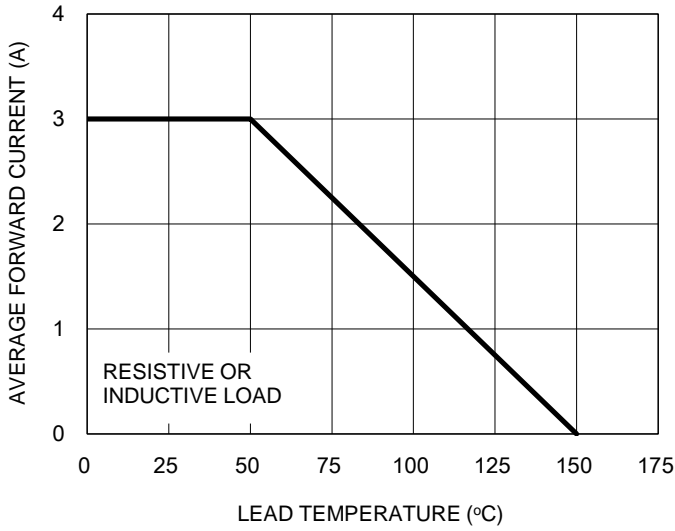


Fig.2 Typical Junction Capacitance

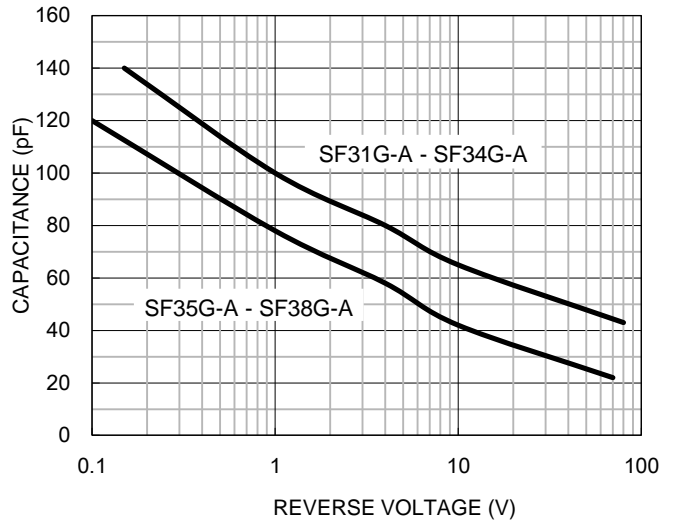


Fig.3 Typical Reverse Characteristics

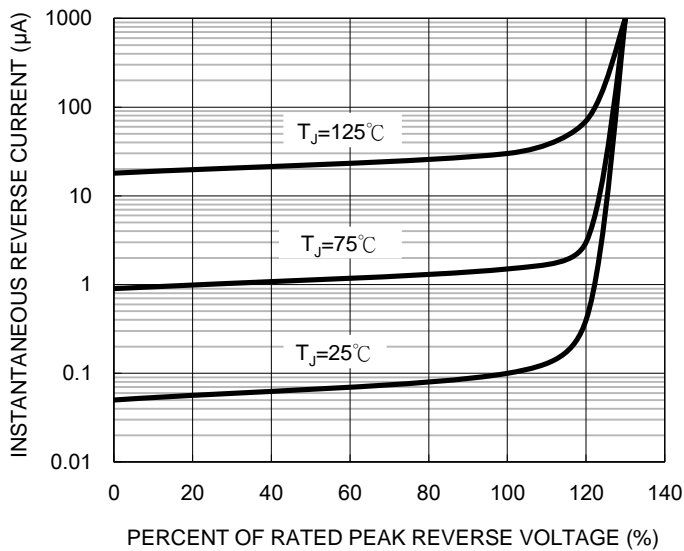
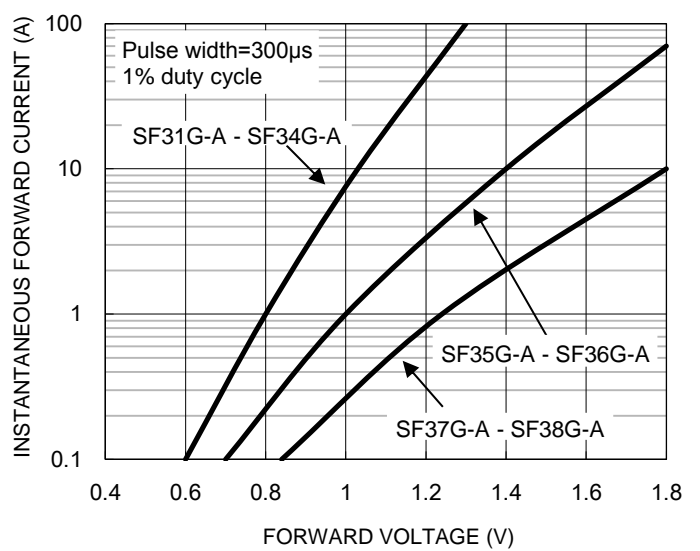


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.5 Maximum Non-repetitive Forward Surge Current

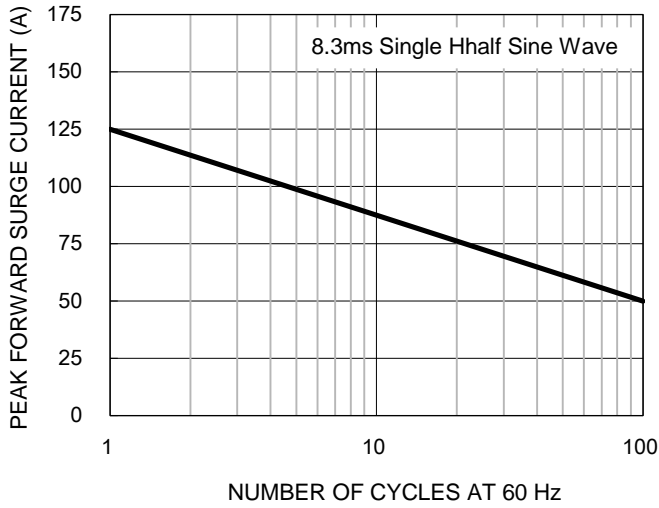
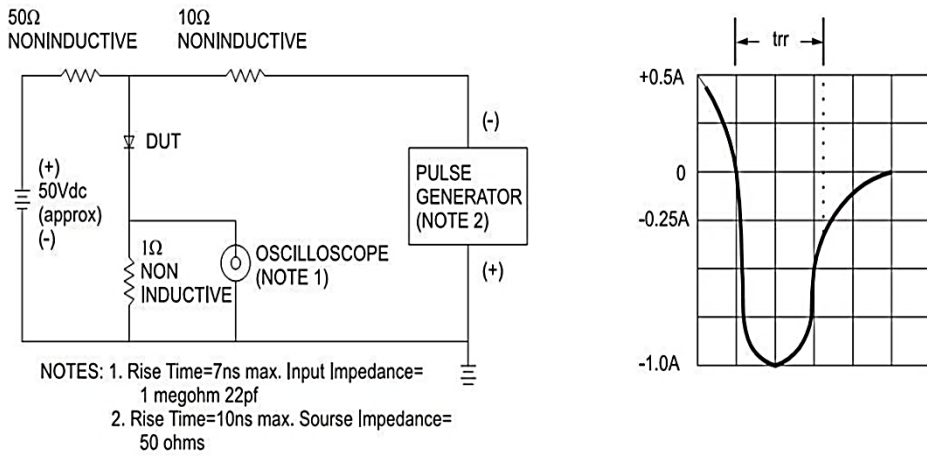


Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS

DO-201AD



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.00	5.60	0.197	0.220
B	1.20	1.30	0.048	0.052
C	25.40	-	1.000	-
D	8.50	9.50	0.335	0.375
E	25.40	-	1.000	-

MARKING DIAGRAM



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

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