

2A, 50V - 600V Glass Passivated Super Fast Rectifier

FEATURES

- Glass passivated chip junction
- High efficiency, Low V_F
- High current capability
- 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

- High frequency rectification
- Freewheeling application
- Switching mode converters and inverters in computer and telecommunication.

MECHANICAL DATA

- Case: DO-204AC (DO-15)
- 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: 0.4 g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	2	A
V_{RRM}	50 - 600	V
I_{FSM}	50	A
$T_{J\ MAX}$	150	°C
Package	DO-204AC (DO-15)	
Configuration	Single Die	



DO-204AC (DO-15)

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)										
PARAMETER	SYMBOL	SF21 G-T	SF22 G-T	SF23 G-T	SF24 G-T	SF25 G-T	SF26 G-T	SF27 G-T	SF28 G-T	UNIT
Marking code on the device		SF21G	SF22G	SF23G	SF24G	SF25G	SF26G	SF27G	SF28G	
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
Maximum DC blocking voltage	V_{DC}	50	100	150	200	300	400	500	600	V
Forward current	$I_{F(AV)}$	2								A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	50								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-ambient thermal resistance	$R_{\theta JA}$	65	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	16	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	SF21G-T	$I_F = 2A, T_J = 25^\circ\text{C}$	V_F	-	0.95	V
	SF22G-T			-	0.95	V
	SF23G-T			-	0.95	V
	SF24G-T			-	0.95	V
	SF25G-T			-	1.30	V
	SF26G-T			-	1.30	V
Reverse current @ rated V_R per diode ⁽²⁾	SF27G-T	$T_J = 25^\circ\text{C}$	I_R	-	5	μA
	SF28G-T	$T_J = 125^\circ\text{C}$		-	100	μA
Junction capacitance	SF21G-T	1 MHz, $V_R = 4.0V$	C_J	40	-	pF
	SF22G-T			40	-	pF
	SF23G-T			40	-	pF
	SF24G-T			40	-	pF
	SF25G-T			20	-	pF
	SF26G-T			20	-	pF
Reverse recovery time		$I_F = 0.5A, I_R = 1.0A$ $I_{RR} = 0.25A$	t_{rr}	-	35	ns

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
SF2xG-T (Note 1, 2)	A0	G	DO-15	1,500 / Ammo box
	R0		DO-15	3,500 / 13" Paper reel
	B0		DO-15	1,000 / Bulk packing

Notes:

1. "x" defines voltage from 50V (SF21G-T) to 600V (SF28G-T)
2. Whole series with green compound (halogen-free)

EXAMPLE P/N

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
SF21G-T A0G	SF21G-T	A0	G	Green compound

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

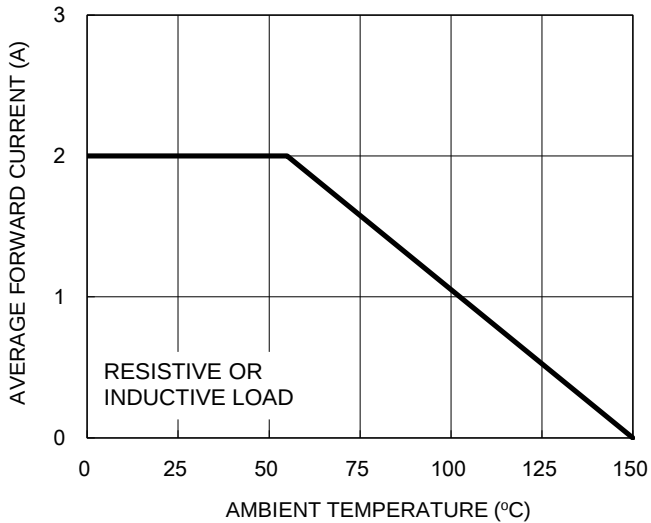


Fig.2 Typical Junction Capacitance

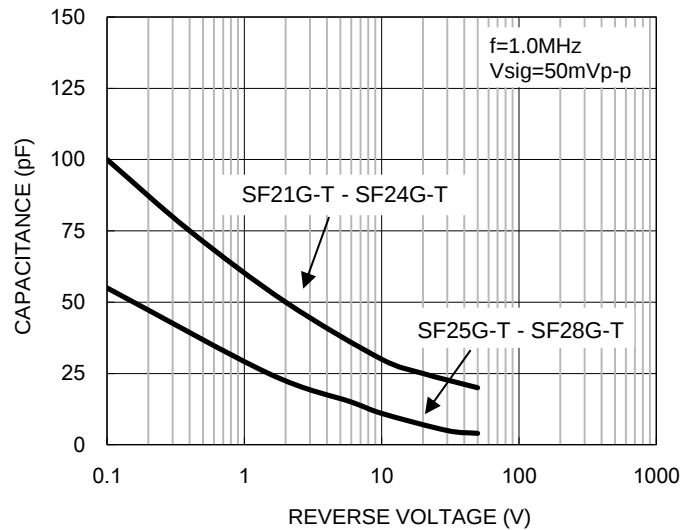


Fig.3 Typical Reverse Characteristics

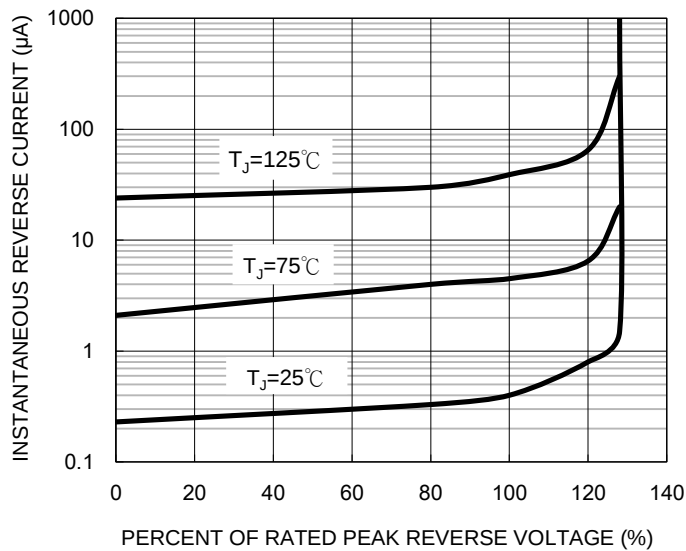
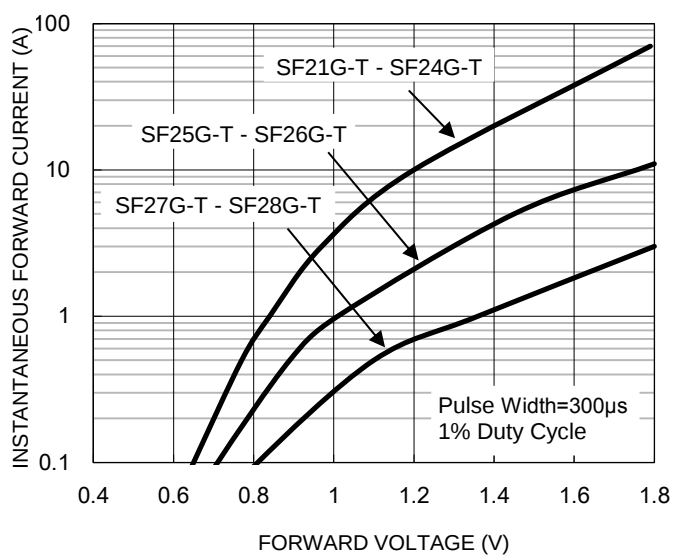


Fig.4 Typical Forward Characteristics



CHARACTERISTICS CURVES

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

Fig.5 Maximum Non-repetitive Forward Surge Current

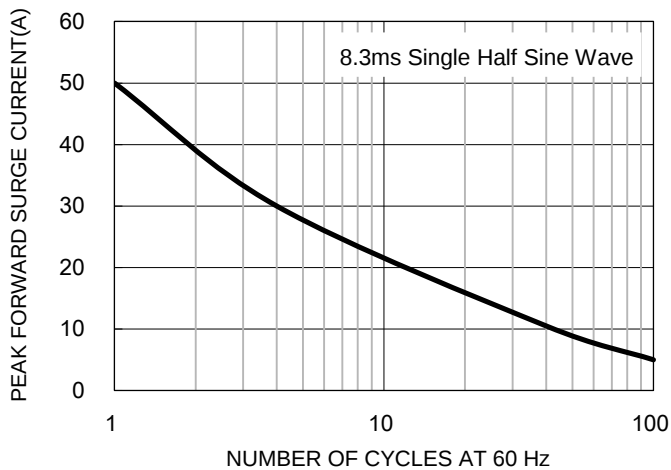
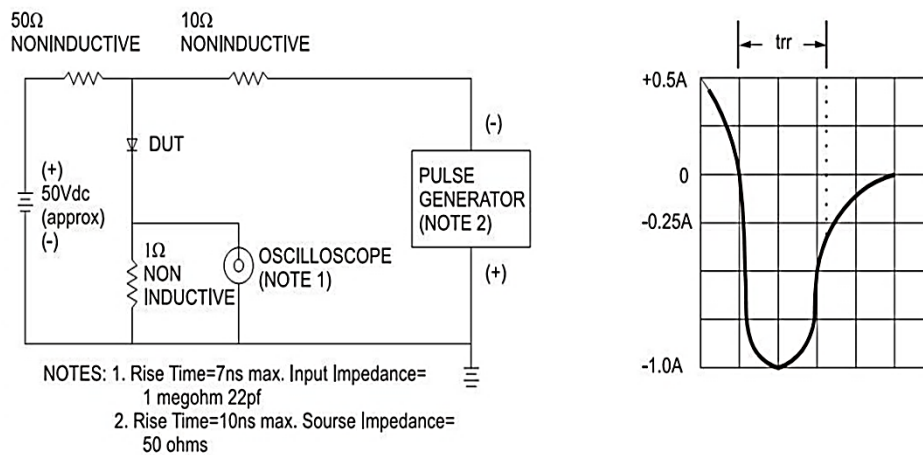
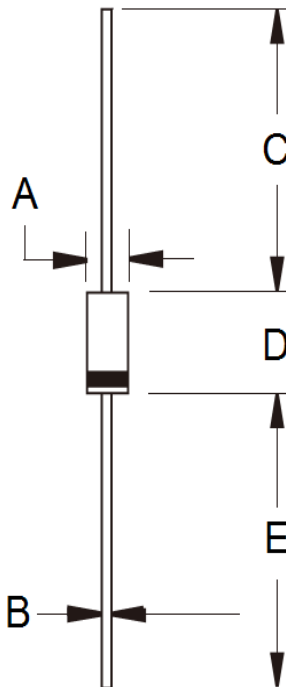


Fig.6 Reverse Recovery Time Characteristic And Test Circuit Diagram



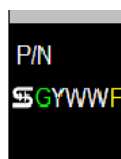
PACKAGE OUTLINE DIMENSIONS

DO-204AC (DO-15)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.60	3.60	0.102	0.142
B	0.70	0.90	0.028	0.035
C	25.40	-	1.000	-
D	5.80	7.60	0.228	0.299
E	25.40	-	1.000	-

MARKING DIAGRAM



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

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