16A, 50V - 600V Super Fast Rectifier

FEATURES

- AEC-Q101 qualified available
- Glass passivated chip junction
- High efficiency, Low V_F
- High current capability
- High reliability
- High surge current capability
- Low power loss
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	16	A
V_{RRM}	50 - 600	V
I_{FSM}	200	A
$T_{J\ MAX}$	150	°C
Package	ITO-220AC	
Configuration	Single die	

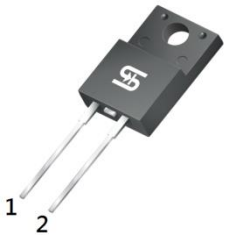
Pb-Free RoHS COMPLIANT HALOGEN FREE

APPLICATIONS

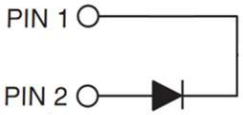
- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

- Case: ITO-220AC
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)



ITO-220AC



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	SFAF 1601G	SFAF 1602G	SFAF 1603G	SFAF 1604G	SFAF 1605G	SFAF 1606G	SFAF 1607G	SFAF 1608G	UNIT
Marking code on the device		SFAF 1601G	SFAF 1602G	SFAF 1603G	SFAF 1604G	SFAF 1605G	SFAF 1606G	SFAF 1607G	SFAF 1608G	
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	16								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	200								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-case resistance	$R_{\Theta JC}$	1.3	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage[1]	SFAF1601G SFAF1602G SFAF1603G SFAF1604G	I_F = 16A, T_J = 25°C	V_F	-	0.975	V
	SFAF1605G SFAF1606G			-	1.300	V
	SFAF1607G SFAF1608G			-	1.700	V
Reverse current @ rated V_R[2]		T_J = 25°C	I_R	-	10	μA
		T_J = 100°C		-	400	μA
Junction capacitance	SFAF1601G SFAF1602G SFAF1603G SFAF1604G	1MHz, V_R = 4.0V	C_J	130	-	pF
	SFAF1605G SFAF1606G SFAF1607G SFAF1608G			100	-	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 = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE[1][2]	PACKAGE	PACKING
SFAF16xG	ITO-220AC	50 / Tube
SFAF16xGH	ITO-220AC	50 / Tube

Notes:

1. "x" defines voltage from 50V(SFAF1601G) to 600V(SFAF1608G)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

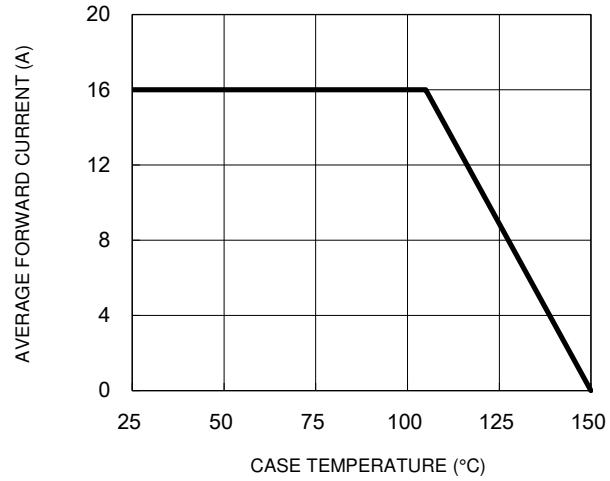


Fig.2 Typical Junction Capacitance

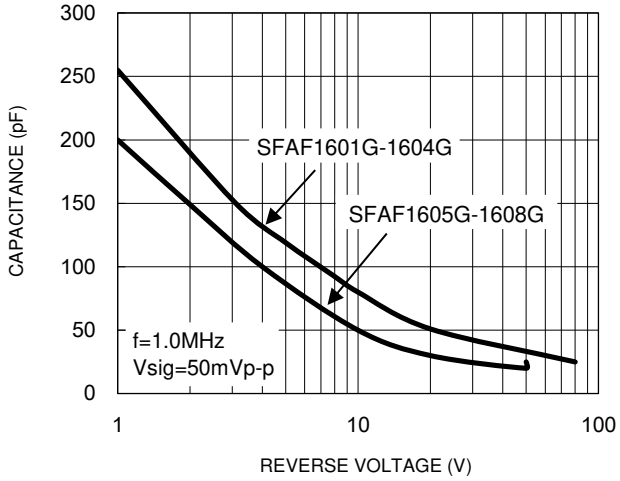


Fig.3 Typical Reverse Characteristics

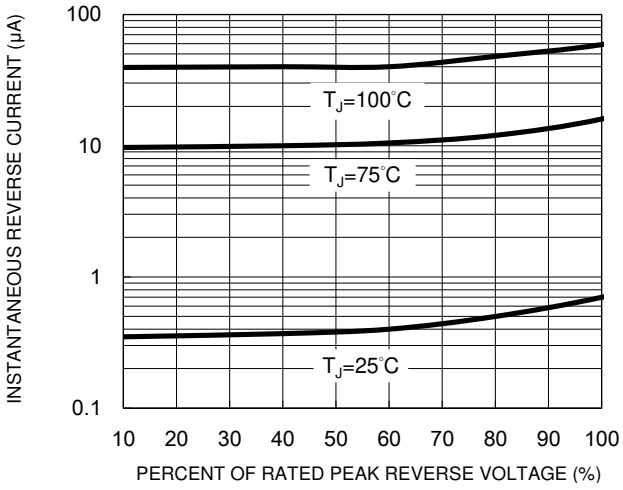


Fig.4 Typical Forward Characteristics

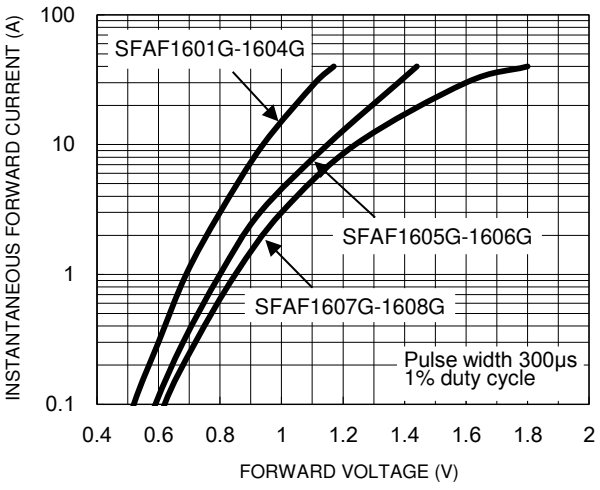
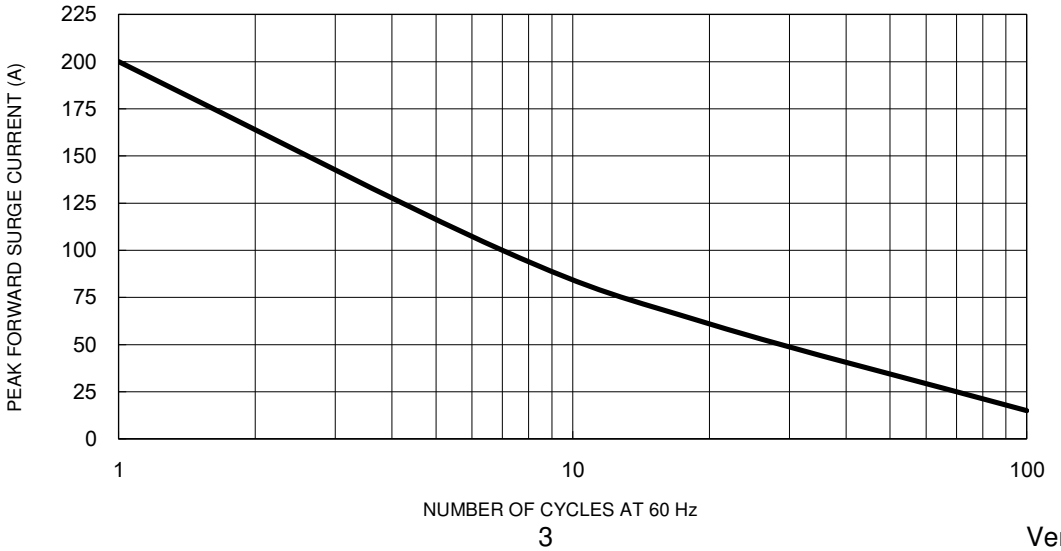


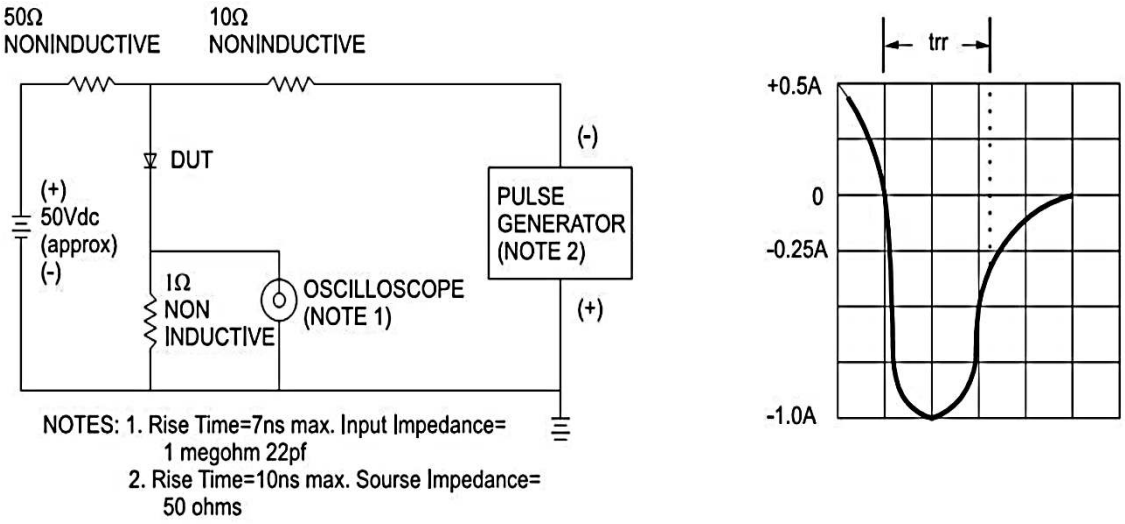
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

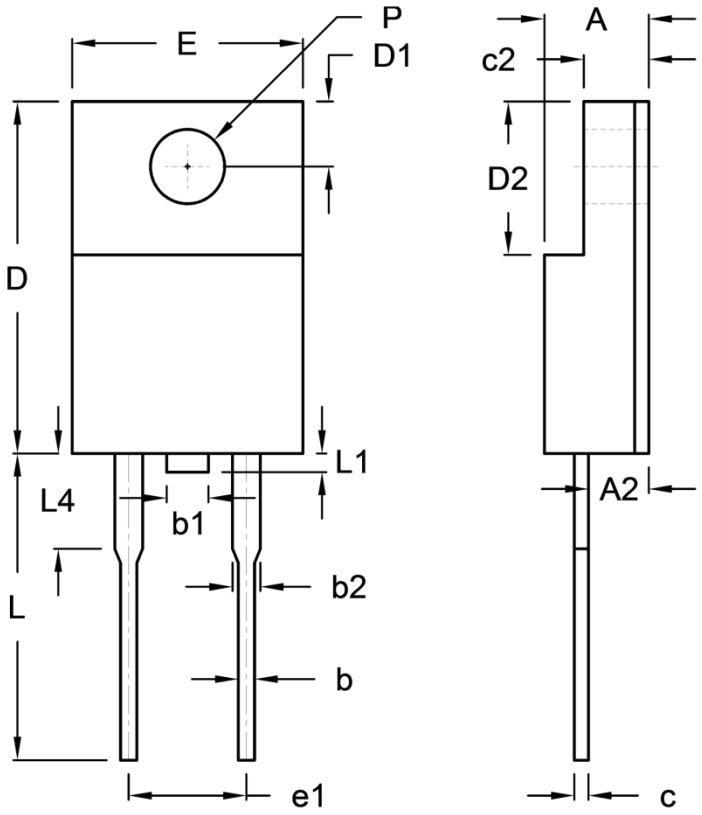
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



PACKAGE OUTLINE DIMENSIONS

ITO-220AC



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A2	2.30	2.90	0.091	0.114
b	0.50	0.90	0.020	0.035
b1	-	1.80	-	0.071
b2	0.95	1.45	0.037	0.057
c	0.46	0.76	0.018	0.030
c2	2.50	3.10	0.098	0.114
D	14.80	15.50	0.583	0.610
D1	2.40	3.20	0.094	0.126
D2	6.30	6.90	0.248	0.272
E	9.60	10.30	0.378	0.406
e1	4.95	5.20	0.195	0.205
L	12.60	13.80	0.496	0.543
L1	0.00	1.60	0.000	0.063
L4	-	4.10	-	0.161
P	3.00	3.40	0.118	0.134

MARKING DIAGRAM

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

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