5A, 50V - 600V Super Fast Rectifier

FEATURES

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

APPLICATIONS

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

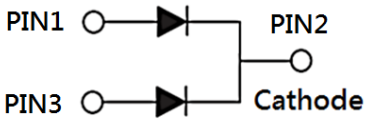
MECHANICAL DATA

- Case: ITO-220AB
- 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: 1.82g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	5	A
V_{RRM}	50 - 600	V
I_{FSM}	70	A
$T_{J\ MAX}$	150	°C
Package	ITO-220AB	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE

ITO-220AB



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

PARAMETER	SYMBOL	SFF 501G	SFF 502G	SFF 503G	SFF 504G	SFF 505G	SFF 506G	SFF 507G	SFF 508G	UNIT
Marking code on the device		SFF 501G	SFF 502G	SFF 503G	SFF 504G	SFF 505G	SFF 506G	SFF 507G	SFF 508G	
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	5								A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	70								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 thermal resistance	$R_{\Theta JC}$	5.5	°C/W

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	SFF501G SFF502G SFF503G SFF504G	I_F = 2.5A,T_J = 25°C	V_F	-	0.98	V
	SFF505G SFF506G			-	1.30	V
	SFF507G SFF508G			-	1.70	V
Reverse current @ rated V_R per diode[2]		T_J = 25°C	I_R	-	10	μA
		T_J = 100°C		-	400	μA
Junction capacitance per diode	SFF501G SFF502G SFF503G SFF504G	1MHz, V_R = 4.0V	C_J	70	-	pF
	SFF505G SFF506G SFF507G SFF508G			50	-	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
SFF5xG	ITO-220AB	50 / Tube
SFF5xGH	ITO-220AB	50 / Tube

Notes:

1. "x" defines voltage from 50V(SFF501G) to 600V(SFF508G)
2. "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

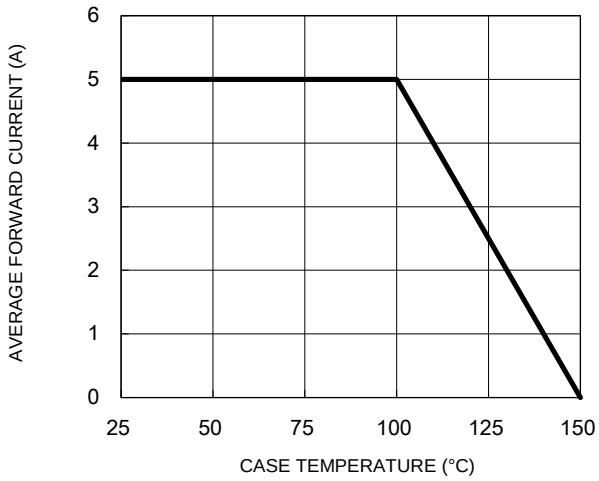


Fig.2 Typical Junction Capacitance

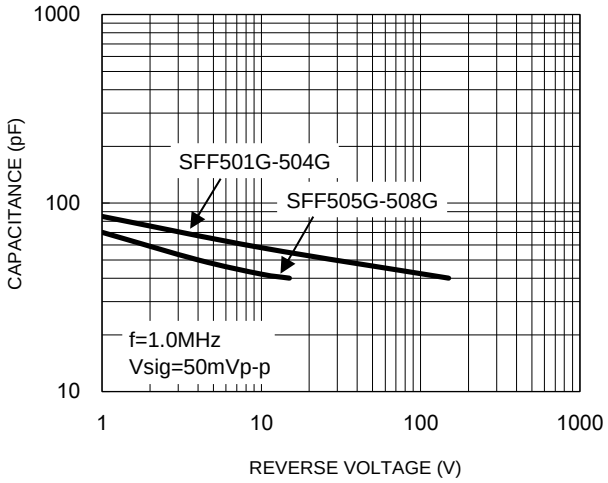


Fig.3 Typical Reverse Characteristics

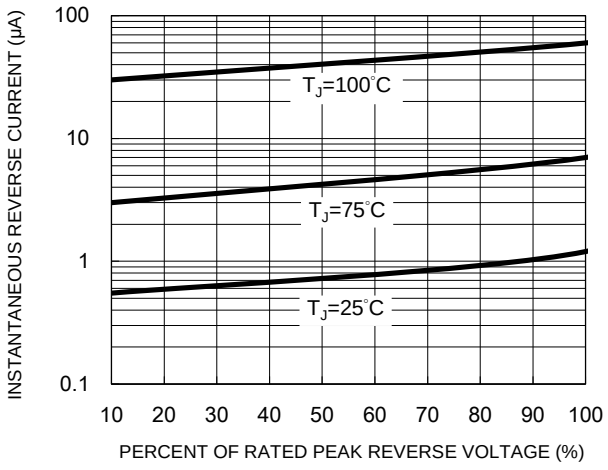


Fig.4 Typical Forward Characteristics

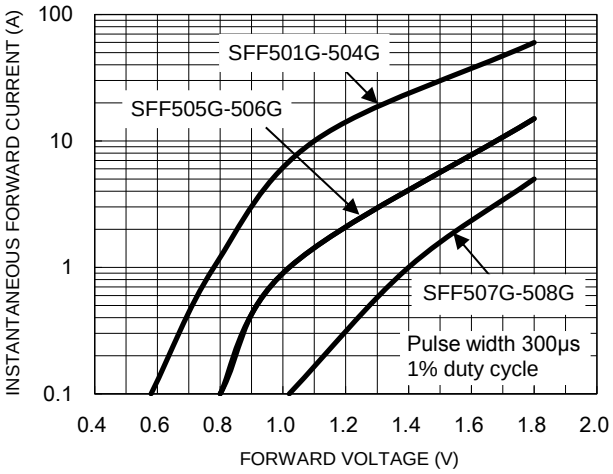
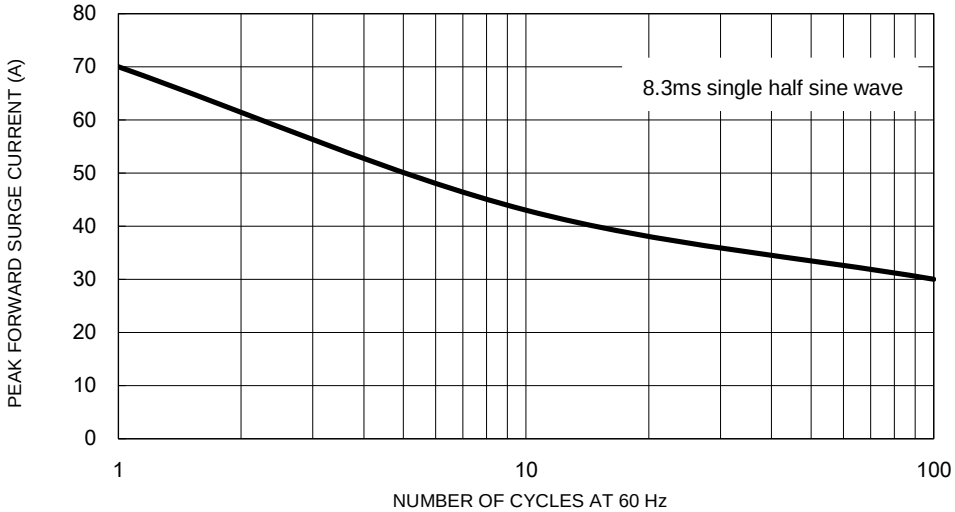


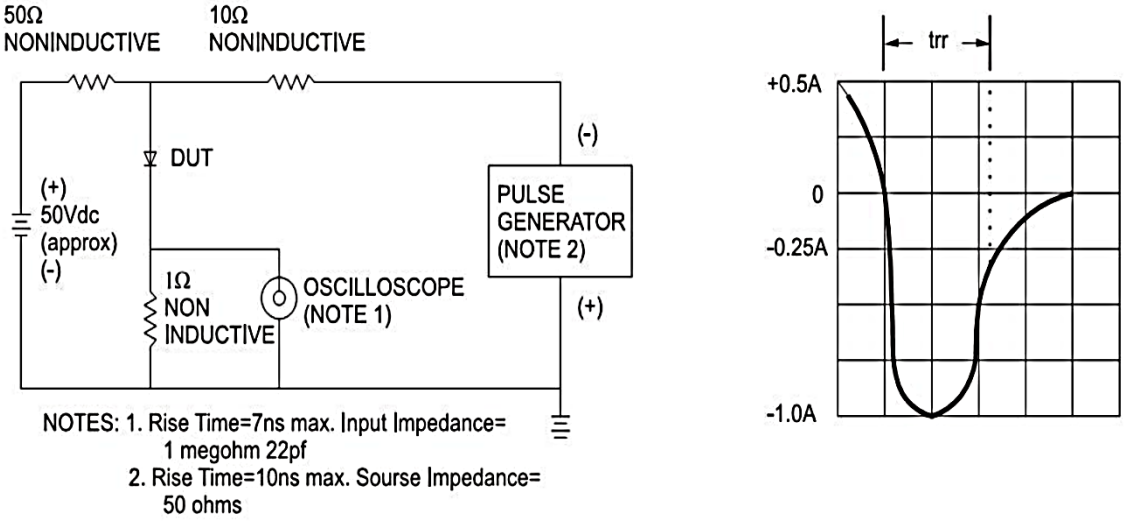
Fig.5 Maximum Non-Repetitive Forward Surge Current



CHARACTERISTICS CURVES

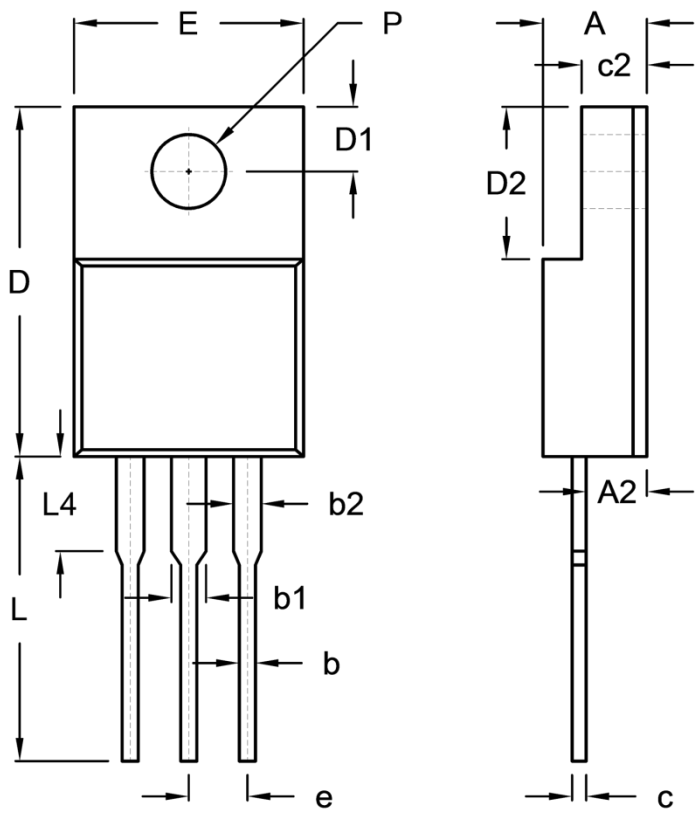
(T_A = 25°C unless otherwise noted)

Fig.6 Reverse Recovery Time Characteristic and Test Circuit Diagram



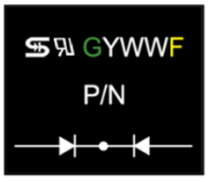
PACKAGE OUTLINE DIMENSIONS

ITO-220AB



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A2	2.30	2.96	0.091	0.117
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	3.16	0.098	0.124
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
e	2.41	2.67	0.095	0.105
L	12.60	13.80	0.496	0.543
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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