10A, 200V - 600V Super Fast Rectifier

FEATURES

- AEC-Q101 qualified available
- High efficiency
- 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	10	A
V_{RRM}	200 - 600	V
I_{FSM}	80, 125	A
$T_{J\ MAX}$	150	°C
Package	ITO-220AB	
Configuration	Dual dies	

Pb-Free RoHS COMPLIANT HALOGEN FREE

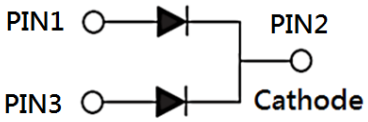
APPLICATIONS

- 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: 1.77g (approximately)

ITO-220AB



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

PARAMETER	SYMBOL	SFF 10L04G	SFF 10L05G	SFF 10L06G	SFF 10L08G	UNIT
Marking code on the device		SFF 10L04G	SFF 10L05G	SFF 10L06G	SFF 10L08G	
Repetitive peak reverse voltage	V_{RRM}	200	300	400	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	140	210	280	420	V
Forward current	I_F	10				A
Surge peak forward current, 8.3ms single half sine wave superimposed on rated load	I_{FSM}	125	80			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	$R_{\Theta JL}$	2	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	9	°C/W
Junction-to-case thermal resistance	$R_{\Theta JC}$	3	°C/W

Thermal Performance Note: Units mounted on heat sink with 2"x3"x0.25" Al -plate

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode[1]	SFF10L04G	I_F = 5A, T_J = 25°C	V_F	0.94	0.98	V
	SFF10L05G			1.04	1.30	V
	SFF10L06G			1.05	1.30	V
	SFF10L08G			1.21	1.70	V
	SFF10L04G	I_F = 5A, T_J = 125°C		0.82	0.90	V
	SFF10L05G			0.89	0.96	V
	SFF10L06G			0.92	1.00	V
	SFF10L08G			1.04	1.20	V
Reverse current @ rated V_R per diode[2]		T_J = 25°C	I_R	-	10	μA
		T_J = 125°C		-	400	μA
Junction capacitance per diode	SFF10L04G	1MHz, V_R = 4.0V	C_J	60	-	pF
	SFF10L05G SFF10L06G SFF10L08G			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
SFF10LxG	ITO-220AB	50 / Tube
SFF10LxGH	ITO-220AB	50 / Tube

Notes:

1. “x” defines voltage from 200V(SFF10L04G) to 600V(SFF10L08G)
2. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

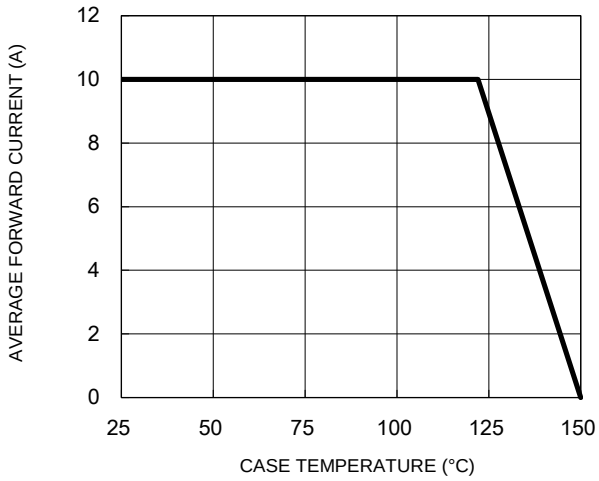


Fig.2 Typical Junction Capacitance

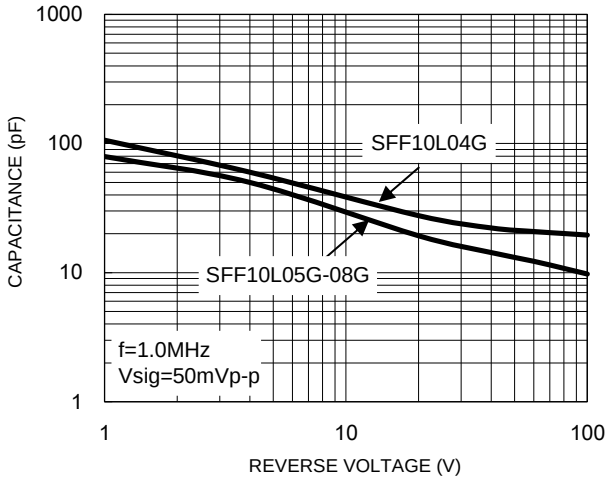


Fig.3 Typical Reverse Characteristics

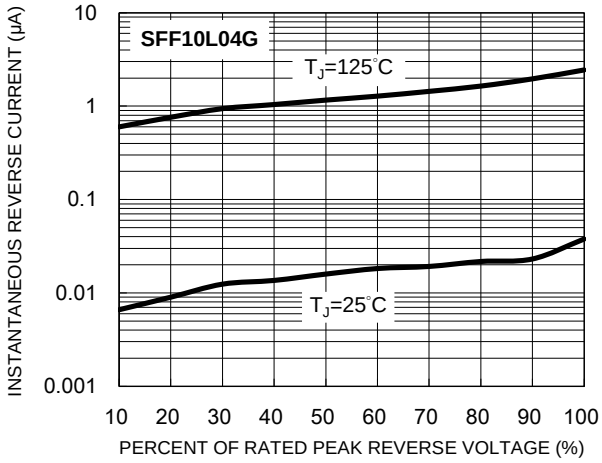


Fig.4 Typical Forward Characteristics

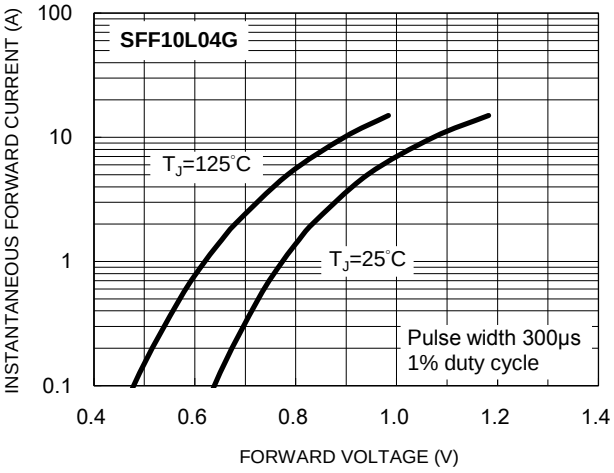


Fig.5 Typical Reverse Characteristics

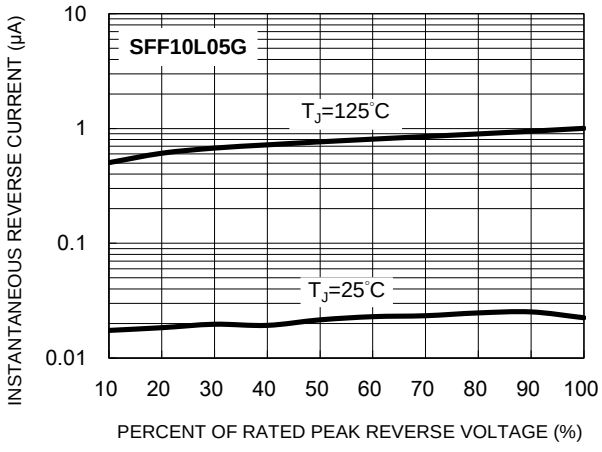
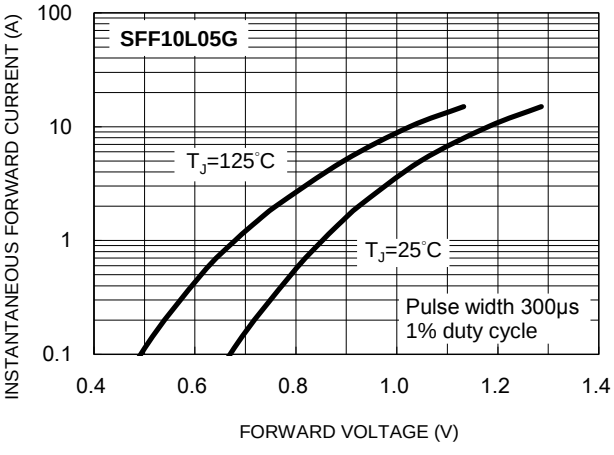


Fig.6 Typical Forward Characteristics



CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.7 Typical Reverse Characteristics

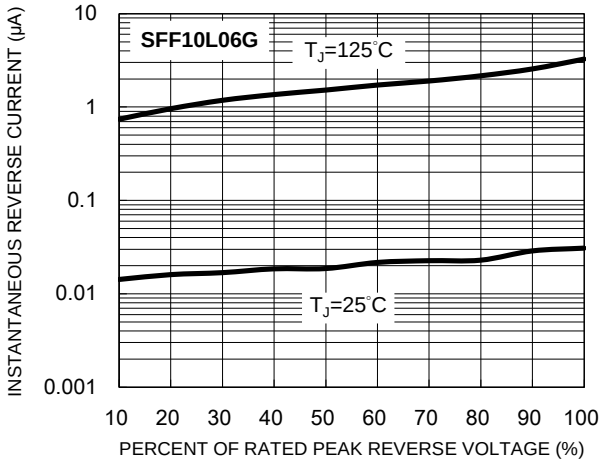


Fig.8 Typical Forward Characteristics

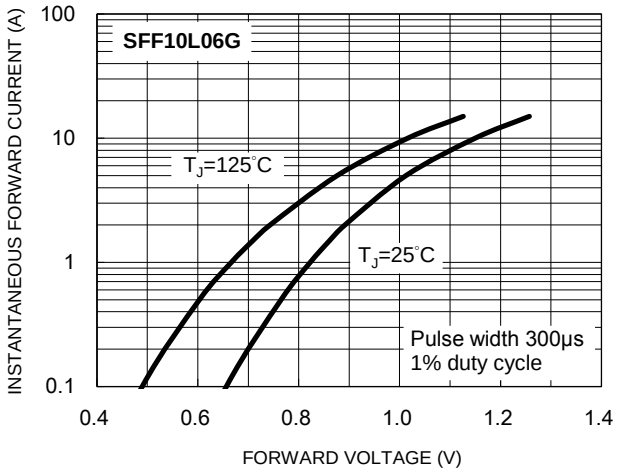


Fig.9 Typical Reverse Characteristics

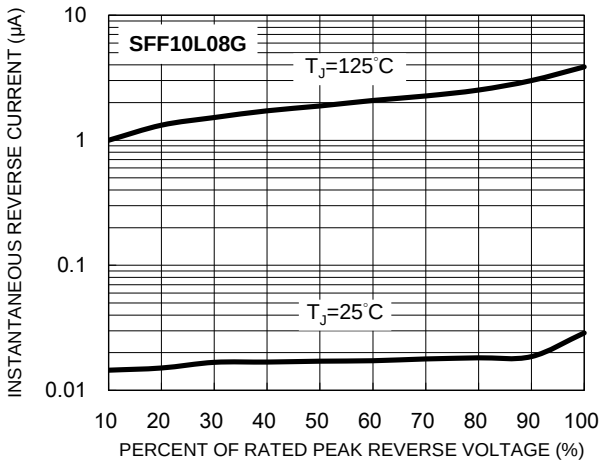
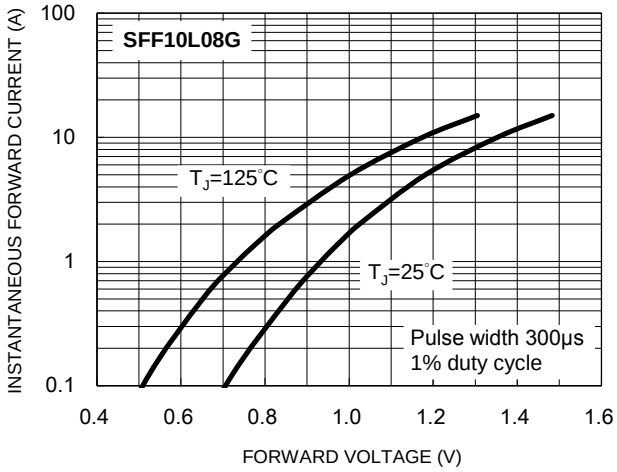
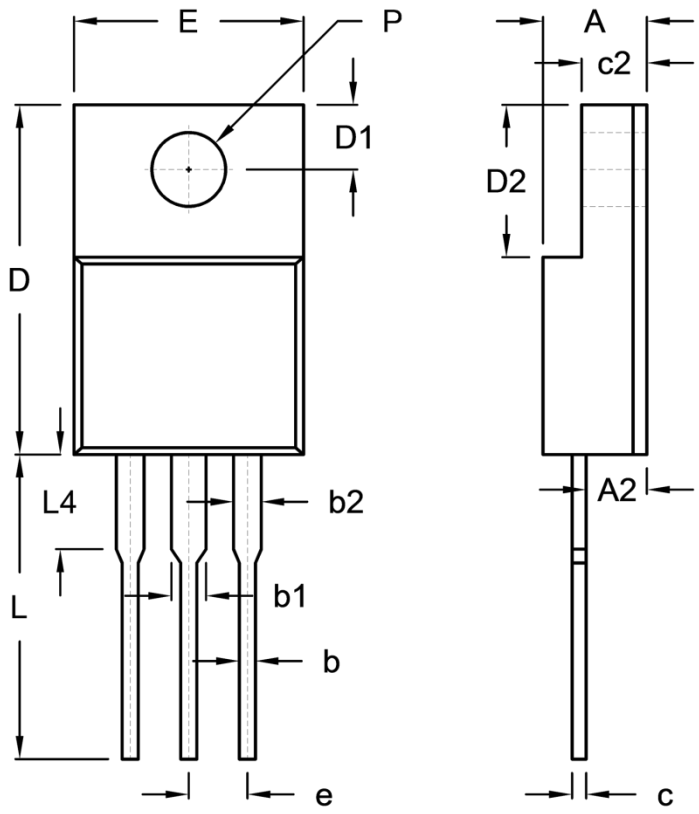


Fig.10 Typical Forward Characteristics



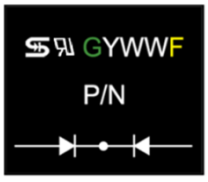
PACKAGE OUTLINE DIMENSIONS

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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