10A, 400V - 600V Ultra Fast Rectifier

FEATURES

- AEC-Q101 qualified available
- High forward surge capability
- High reliability
- Ultra fast recovery time
- Low power loss
- UL Recognized File # E-326243
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

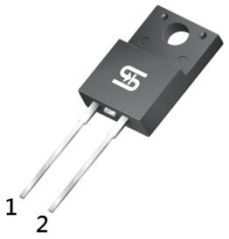
- DC to DC converter
- Switching mode converters and inverters
- Freewheeling application

MECHANICAL DATA

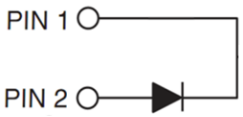
- Case: ITO-220AC
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Mounting torque: 0.56 N·m maximum
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	10	A
V_{RRM}	400 - 600	V
I_{FSM}	90	A
$T_{J\,MAX}$	150, 175	°C
Package	ITO-220AC	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE



ITO-220AC



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)				
PARAMETER	**SYMBOL**	**UGF10G**	**UGF10J**	**UNIT**
Marking code on the device		UGF10G	UGF10J	
Repetitive peak revers voltage	V_{RRM}	400	600	V
Reverse voltage total rms value	$V_{R(RMS)}$	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}	90		A
Junction temperature	T_J	-55 to +175	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +175	-55 to +150	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-case resistance	$R_{\Theta JC}$	5	°C/W

Thermal Performance Note: Mounted on Heat sink Size of 4"x6"x0.25" Al-Plate

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

PARAMETER		CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage(1)	UGF10G	I_F = 10A, T_J = 25°C	V_F	-	1.25	V
	UGF10J			-	2.00	V
Reverse current @ rated V_R(2)	UGF10G UGF10J	T_J = 25°C	I_R	-	5	μA
	UGF10G	T_J = 125°C		-	100	μA
	UGF10J			-	200	μA
Reverse recovery time		I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A	t_{rr}	-	25	ns

Notes:

1. Pulse test with PW = 0.3ms
2. Pulse test with PW = 30ms

ORDERING INFORMATION

ORDERING CODE(1)(2)	PACKAGE	PACKING
UGF10x	ITO-220AC	50 / Tube
UGF10xH	ITO-220AC	50 / Tube

Notes:

1. “x” defines voltage from 400V(UGF10G) to 600V(UGF10J)
2. “H” means AEC-Q101 qualified

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Forward Current Derating Curve

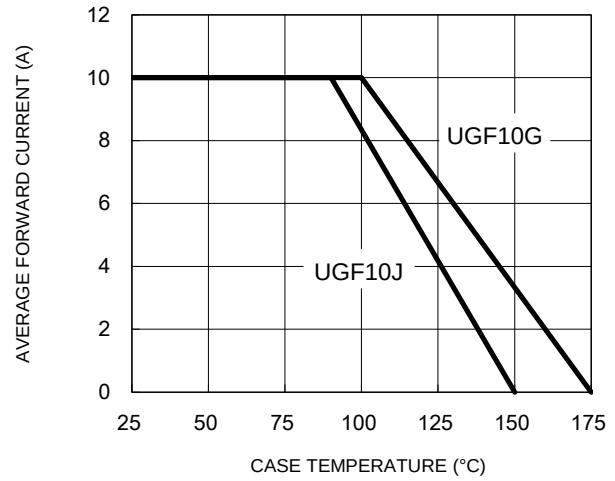


Fig.2 Typical Junction Capacitance

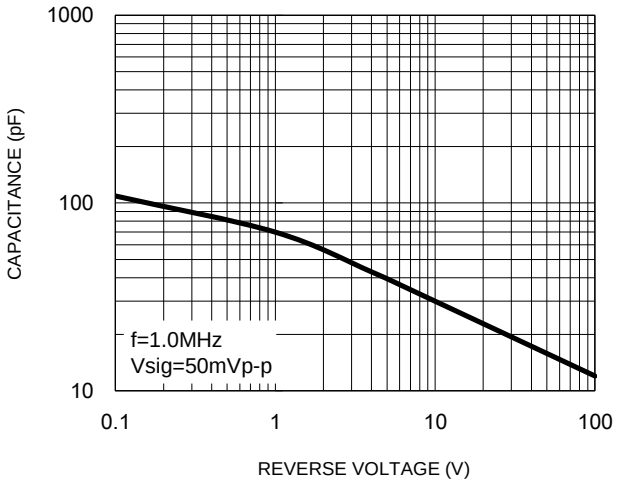


Fig.3 Typical Reverse Characteristics

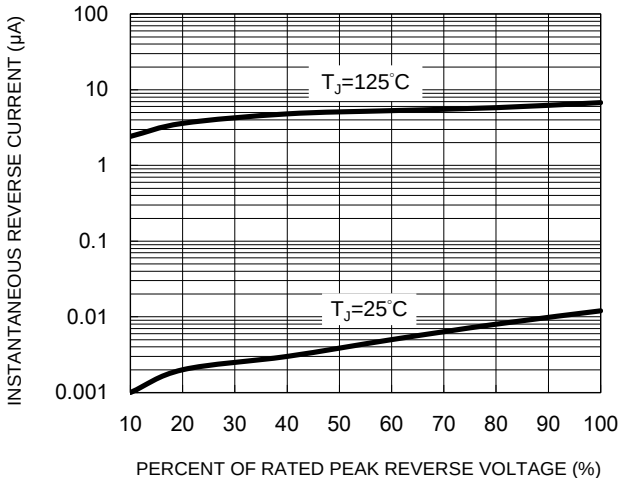


Fig.4 Typical Forward Characteristics

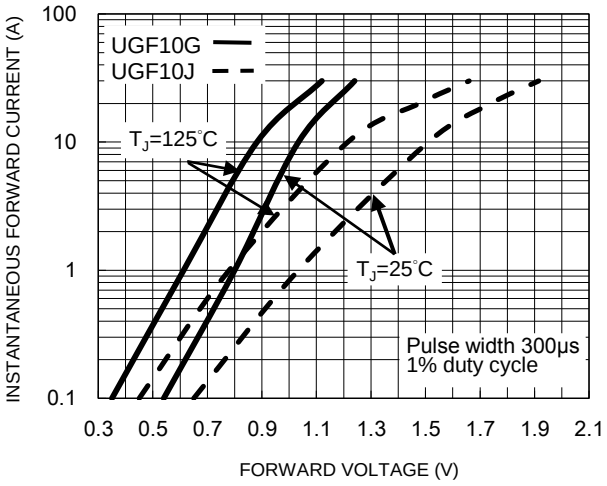
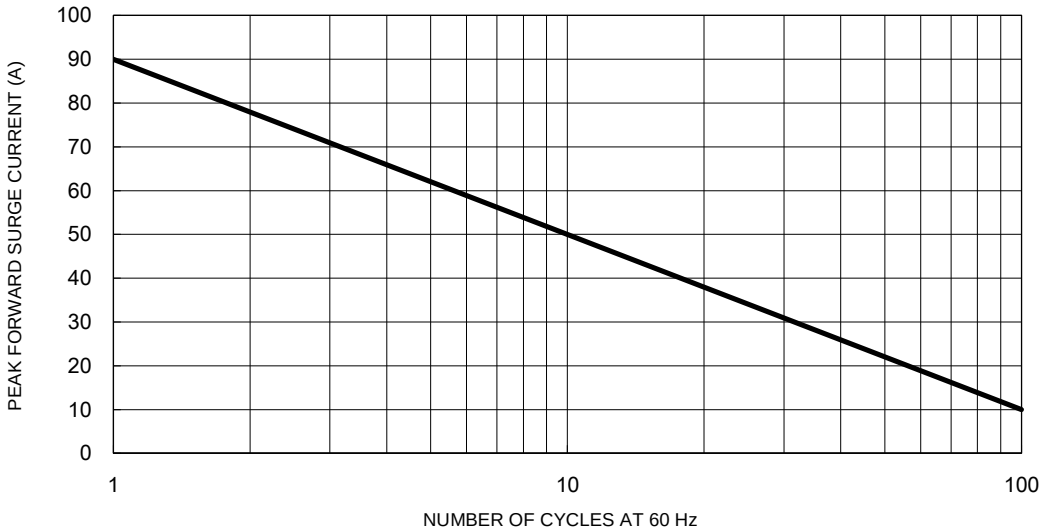
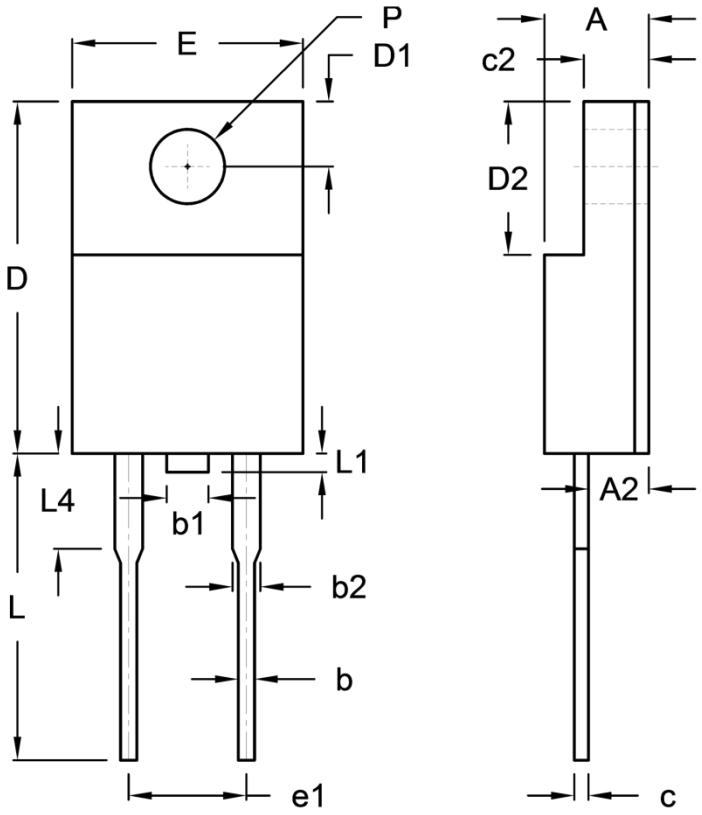


Fig.5 Maximum Non-Repetitive Forward Surge Current



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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