

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

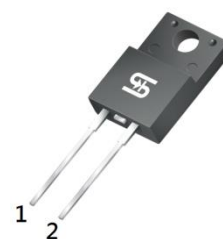
APPLICATIONS

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

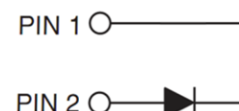
MECHANICAL DATA

- Case: ITO-220AC
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 1.70g (approximately)
- Base P/N_X ("X" denotes revision code e.g. A, B, ...)

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



ITO-220AC



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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" x 6" x 0.25" Al-plate

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ 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:

- Pulse test with $PW = 0.3\text{ms}$
- Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

ORDERING CODE ⁽¹⁾	PACKAGE	PACKING	DEVICE MARKING
UGF10G	ITO-220AC	50 / Tube	UGF10G
UGF10J	ITO-220AC	50 / Tube	UGF10J
UGF10GH_A	ITO-220AC	50 / Tube	UGF10G
UGF10JH_A	ITO-220AC	50 / Tube	UGF10J

Notes:

- "H" means AEC-Q101 qualified

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

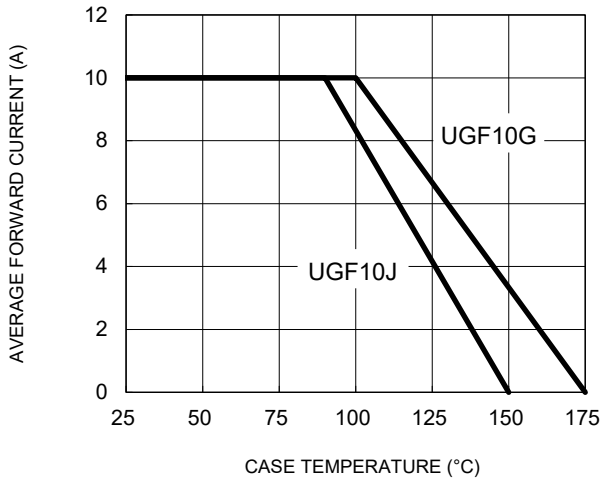


Fig.2 Typical Junction Capacitance

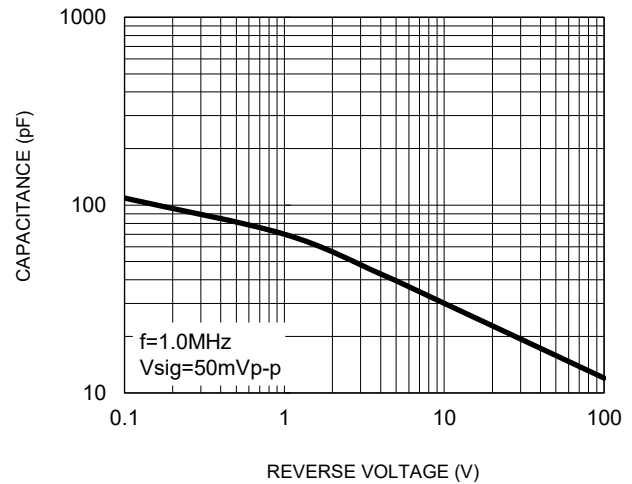


Fig.3 Typical Reverse Characteristics

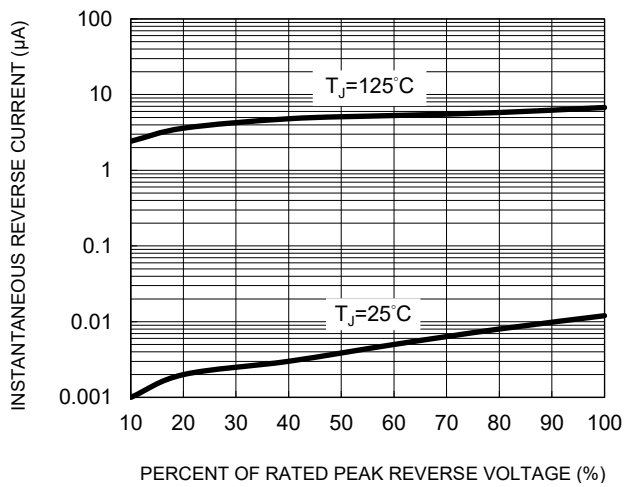


Fig.4 Typical Forward Characteristics

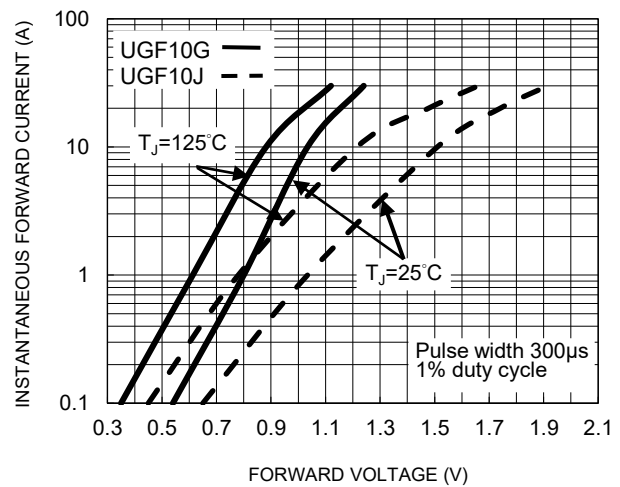
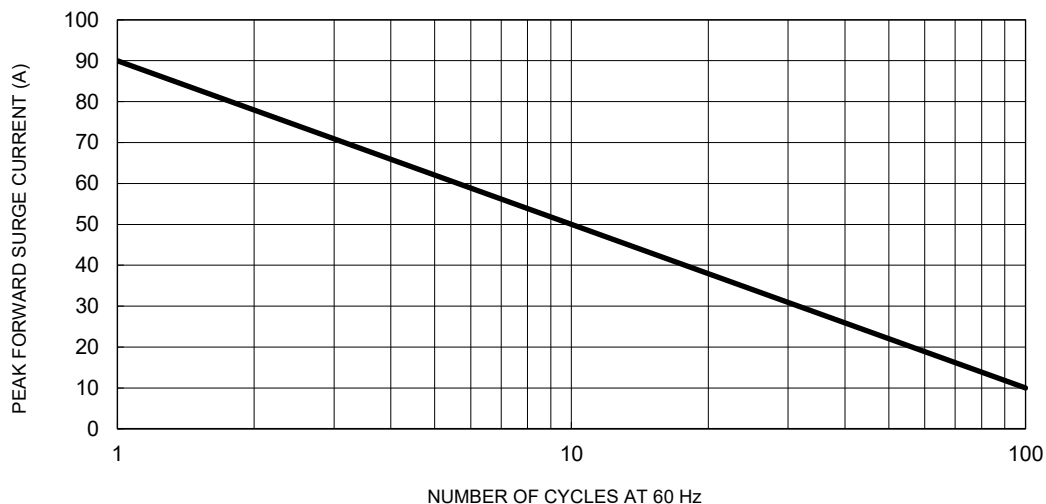
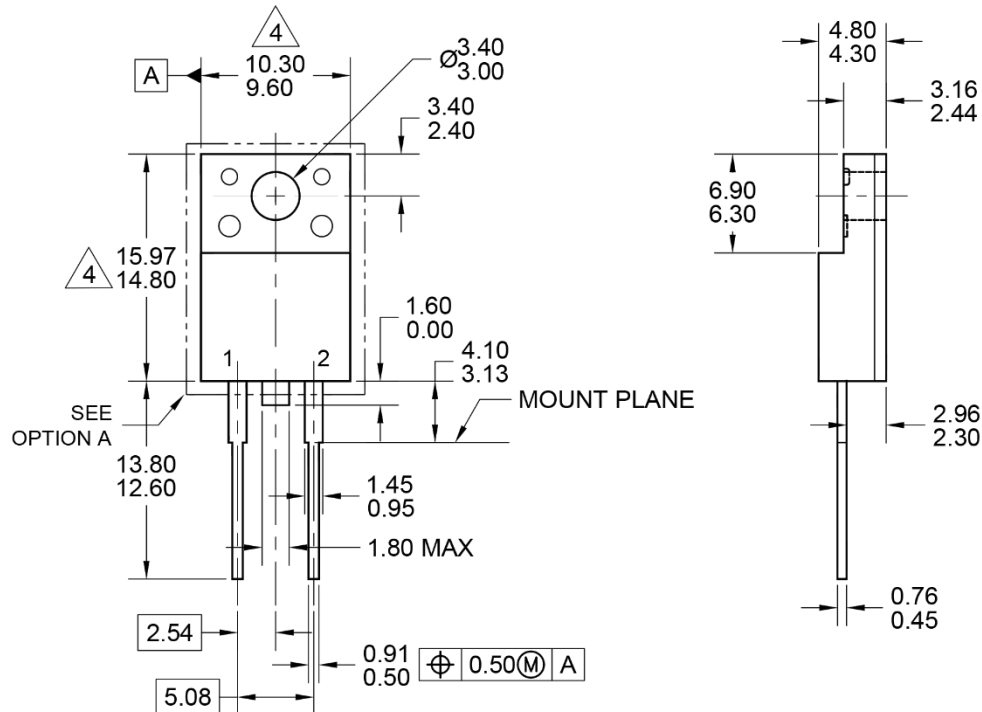


Fig.5 Maximum Non-Repetitive Forward Surge Current



PACKAGE OUTLINE DIMENSIONS

ITO-220AC



NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A-1, SC-91.
4. THIS DO NOT INCLUDE MOLD FLASH. THESE DIMENSIONS ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.
5. DWG NO. REF: HQ2SD07-ITO220AC-064 REV B.

MARKING DIAGRAM

P/N = DEVICE MARKING
G = GREEN COMPOUND
YWW = DATE CODE
F = FACTORY CODE

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