

5A, 600V Ultrafast Rectifier

FEATURES

- High efficiency, low V_F
- High current capability
- High reliability
- High surge current capability
- Low power loss
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

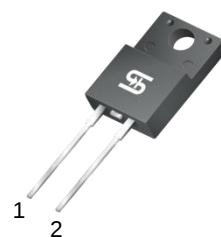
APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board AC/DC converter

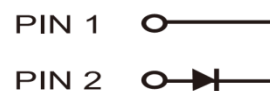
MECHANICAL DATA

- Case: ITO-220AC
- Molding compound meets UL 94V-0 flammability rating
- Packing code with suffix "G" means green compound (halogen-free)
- Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Mounting torque: 0.56 Nm max.
- Weight: 1.8g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	5	A
V_{RRM}	600	V
I_{FSM}	55	A
$T_J \text{ MAX}$	150	°C
Package	ITO-220AC	
Configuration	Single Die	



ITO-220AC



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	UF5JFC	UNIT
Marking code on the device		UF5JFC	
Repetitive peak reverse voltage	V_{RRM}	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	V
Forward current	$I_{F(AV)}$	5	A
Surge peak forward current, 8.3 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	55	A
Junction temperature	T_J	-55 to +150	°C
Storage temperature	T_{STG}	-55 to +150	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	LIMIT	UNIT
Junction-to-lead Thermal Resistance per diode	$R_{\theta JL}$	6.3	°C/W
Junction-to-ambient Thermal Resistance per diode	$R_{\theta JA}$	12	°C/W
Junction-to-case Thermal Resistance per diode	$R_{\theta JC}$	7.3	°C/W

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

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 2.5\text{A}, T_J = 25^\circ\text{C}$	V_F	1.3	1.8	V
	$I_F = 5.0\text{A}, T_J = 25^\circ\text{C}$		1.5	2.8	V
	$I_F = 2.5\text{A}, T_J = 125^\circ\text{C}$		1.1	1.6	V
	$I_F = 5.0\text{A}, T_J = 125^\circ\text{C}$		1.3	2.3	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	30	μA
	$T_J = 125^\circ\text{C}$		-	200	μA
Junction capacitance	1 MHz, $V_R = 4.0\text{V}$	C_J	30	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}$ $I_{RR} = 0.25\text{A}$	t_{rr}	-	25	ns

Notes:

1. Pulse test with $PW = 0.3\text{ ms}$
2. Pulse test with $PW = 30\text{ ms}$

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
UF5JFC (Note 1)	C0	G	ITO-220AC	50 / Tube

Note:

1. Whole series with green compound (halogen-free)

EXAMPLE P/N

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
UF5JFC C0G	UF5JFC	C0	G	Green compound

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

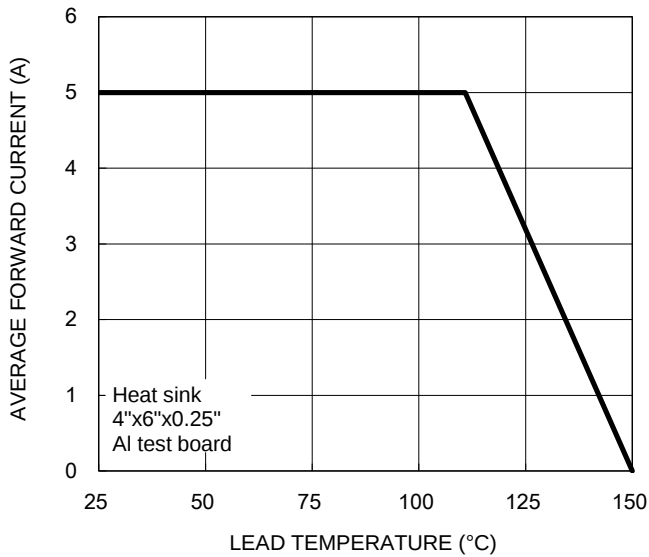


Fig.2 Typical Junction Capacitance

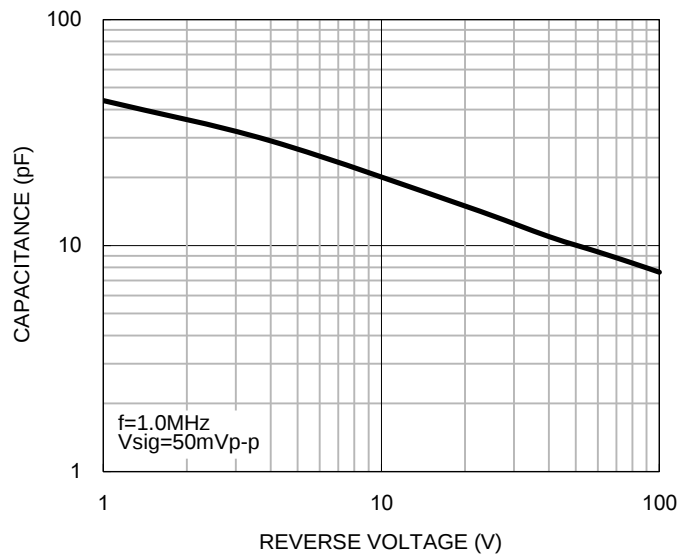


Fig.3 Typical Reverse Characteristics

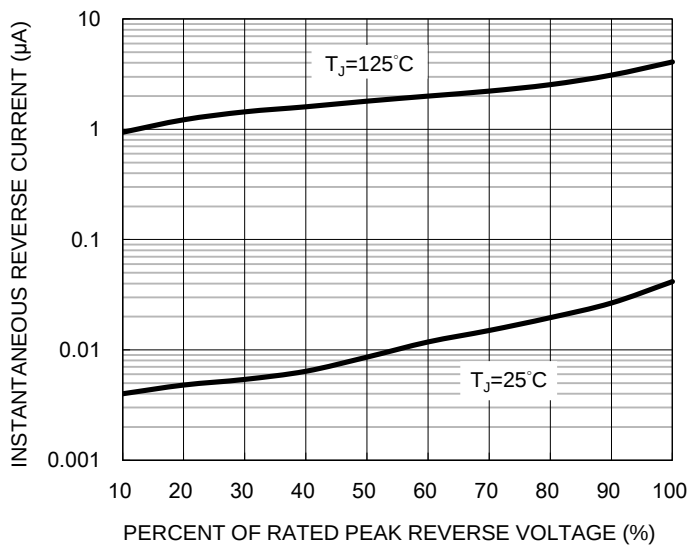
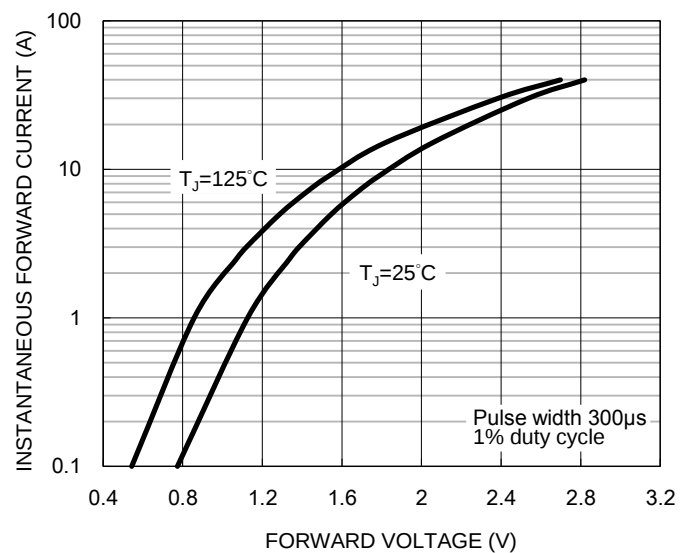
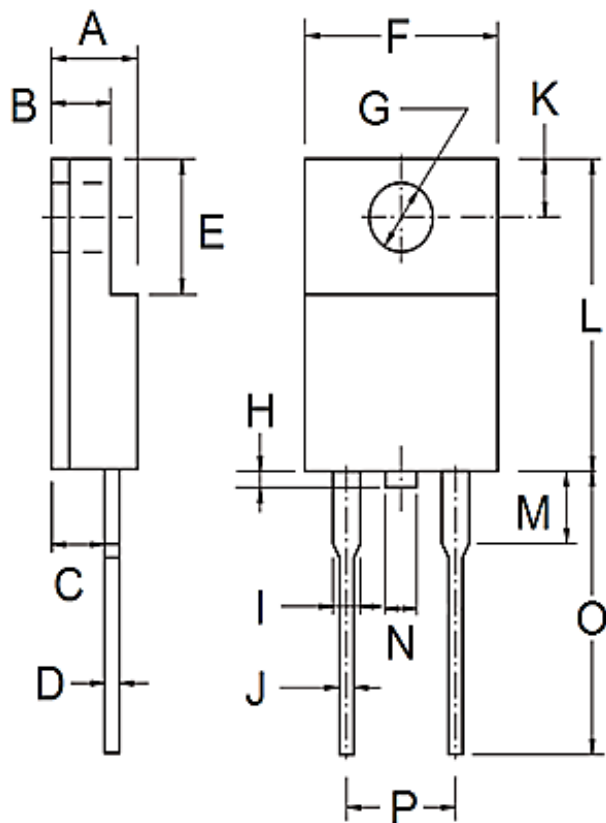


Fig.4 Typical Forward Characteristics



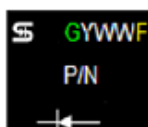
PACKAGE OUTLINE DIMENSIONS

ITO-220AC



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	4.30	4.70	0.169	0.185
B	2.50	3.10	0.098	0.122
C	2.30	2.90	0.091	0.114
D	0.46	0.76	0.018	0.030
E	6.30	6.90	0.248	0.272
F	9.60	10.30	0.378	0.406
G	3.00	3.40	0.118	0.134
H	0.00	1.60	0.000	0.063
I	0.95	1.45	0.037	0.057
J	0.50	0.90	0.020	0.035
K	2.40	3.20	0.094	0.126
L	14.80	15.50	0.583	0.610
M	-	4.10	-	0.161
N	-	1.80	-	0.071
O	12.60	13.80	0.496	0.543
P	4.95	5.20	0.195	0.205

MARKING DIAGRAM



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

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