

Isolated Ultra Fast Rectifier

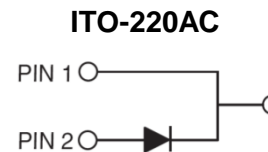
FEATURES

- Especially suited as boost diode on continuous mode power factor correctors
- Ideal Solution for hard switching condition
- High capability for high di/dt operation. Downsizing of mosfet and heatsink
- High surge current capability
- AEC-Q101 qualified (Green compound not involved)
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



DESCRIPTION

Especially suited as free wheeling or boost diode in continuous mode power factor correctors and other power switching applications. The low stored charge and ultrafast soft recovery minimizes ringing and electrical noise in power switching circuits. The family drastically cuts losses in the associated MOSFET when run at high dI_F/dt .



MECHANICAL DATA

Case: ITO-220AC

Molding compound, UL flammability classification rating 94V-0
Base P/N with suffix "G" on packing code - halogen-free, RoHS compliant

Terminal: Matte tin plated leads, solderable per JESD 22-B102
Meet JESD 201 class 1A whisker test

Polarity: As marked

Mounting torque: 5 in-lbs maximum

Weight: 1.7g (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	UGF8JD		UNIT
Maximum repetitive peak reverse voltage	V_{RRM}	600		V
Maximum average forward rectified current	$I_{F(AV)}$	8.0		A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	100		A
Maximum instantaneous forward voltage (Note 1) $I_F=8\text{ A}$	V_F	2.3		V
Maximum reverse current @ Rated V_R $T_J=25^\circ\text{C}$ $T_J=125^\circ\text{C}$	I_R	0.5		μA
		100		
Reverse recovery time $I_F=0.5\text{A}$, $I_{RR}=0.25\text{A}$, $I_R=1\text{A}$, $T_J=25^\circ\text{C}$ $I_F=1\text{A}$, $dI_F/dt=-50\text{A}/\mu\text{s}$, $V_R=30\text{V}$, $T_J=25^\circ\text{C}$	T_{rr}	TYP	MAX	ns
		13	-	
		-	30	
Reverse recovery charges $I_F=1\text{A}$, $dI_F/dt=-200\text{A}/\mu\text{s}$, $V_R=400\text{V}$, $T_J=125^\circ\text{C}$ $I_F=1\text{A}$, $dI_F/dt=-200\text{A}/\mu\text{s}$, $V_R=400\text{V}$, $T_J=125^\circ\text{C}$	Q_{rr}	TYP	MAX	nC
		90	-	
		I_{RM}	5	
Typical thermal resistance	$R_{\theta JC}$	4		$^\circ\text{C}/\text{W}$
Operating junction temperature range	T_J	- 55 to +150		$^\circ\text{C}$
Storage temperature range	T_{STG}	- 55 to +150		$^\circ\text{C}$

Note 1: Pulse test with $PW=300\ \mu\text{s}$, 1% duty cycle

ORDERING INFORMATION				
PART NO.	PACKING CODE	GREEN COMPOUND CODE	PACKAGE	PACKING
UGF8JD	C0	Suffix "G"	ITO-220AC	50 / Tube

EXAMPLE				
PREFERRED P/N	PART NO.	PACKING CODE	GREEN COMPOUND CODE	DESCRIPTION
UGF8JD C0	UGF8JD	C0		
UGF8JD C0G	UGF8JD	C0	G	Green compound

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

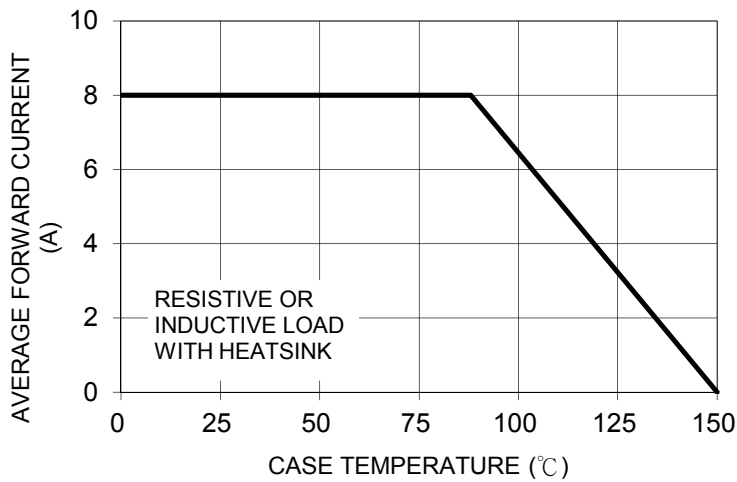


FIG. 2 MAXIMUM FORWARD SURGE CURRENT

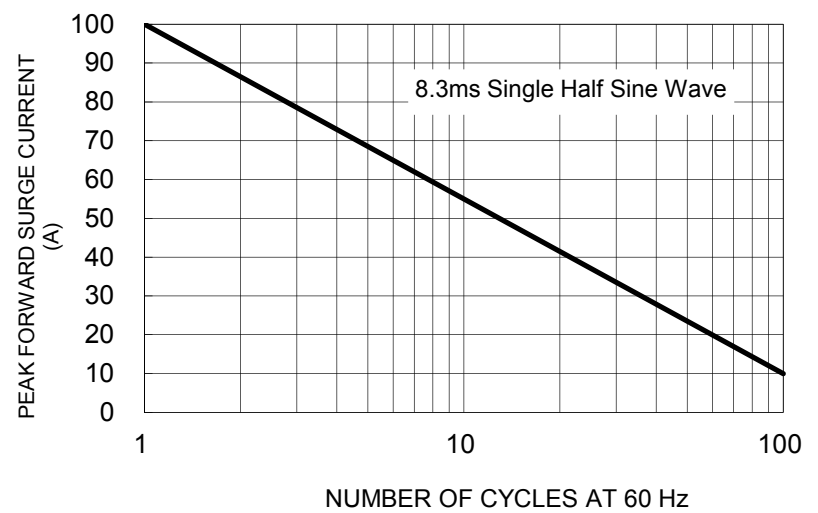


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

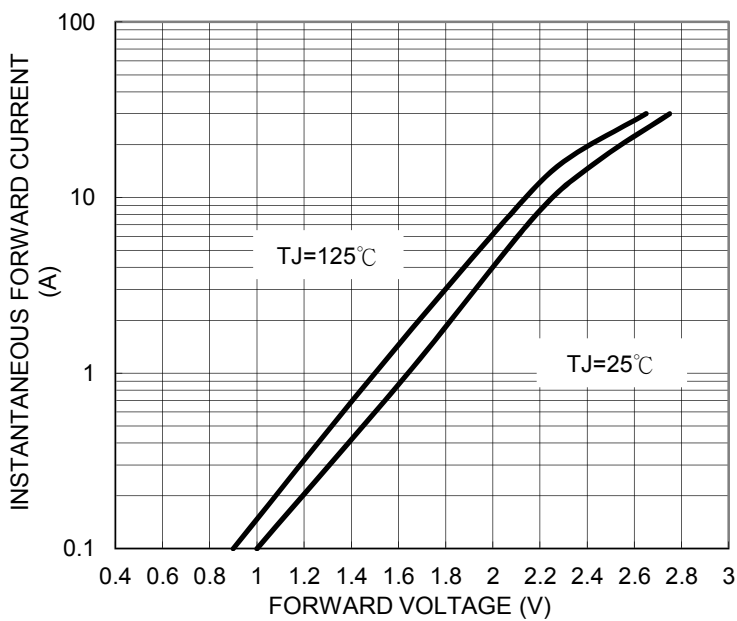


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

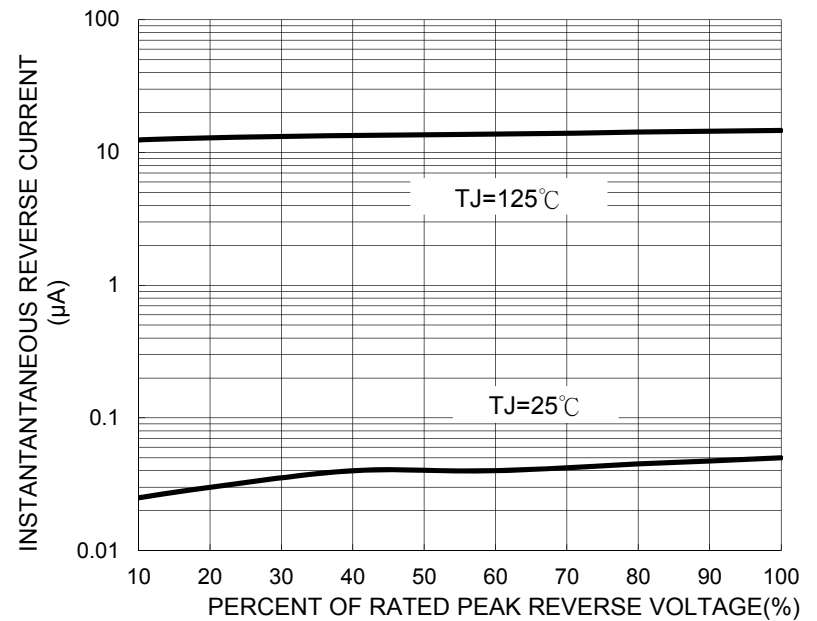
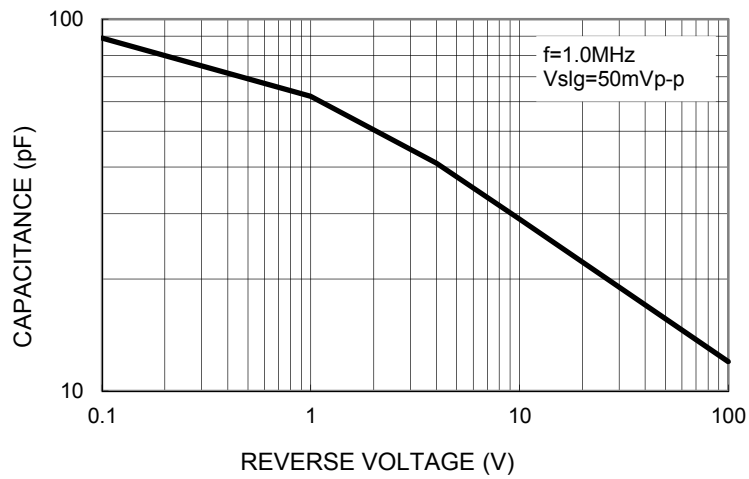
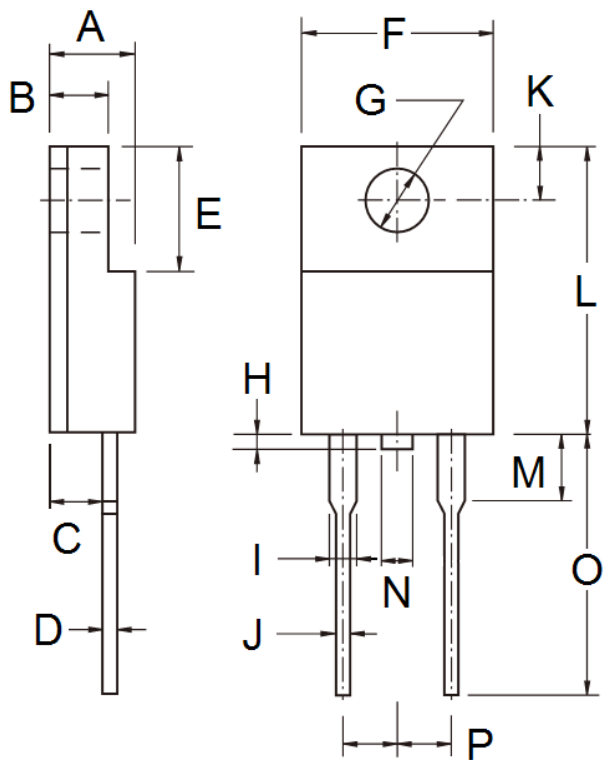


FIG. 5 TYPICAL JUNCTION CAPACITANCE



PACKAGE OUTLINE DIMENSIONS



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 = Specific Device Code
- G = Green Compound
- YWW = Date Code
- F = Factory Code