TAIWAN SEMICONDUCTOR

The Smartest Choice

UGF12J

12.0AMPS. Isolated Ultra Fast Rectifiers

ITO-220AC



Pb-Free

RoHS COMPLIANT

Features

- ✧ High efficiency, low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ Low power loss
- ✧ For use in low voltage, high frequency inverter, Free wheeling, and polarity protection application
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode

Mechanical Data

- ✧ Case: ITO-220AC
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ✧ Polarity: As marked
- ✧ High temperature soldering guaranteed: 260℃/10 seconds. 16",(4.06mm) from case.
- ✧ Weight: 1.7 grams

Ordering Information

Part No.	Package	Packing	Packing code	Packing code (Green)
UGF12J	ITO-220AC	50 / TUBE	C0	C0G

Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.

Parameter	Symbol	UGF12J	Unit
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	600	V
Maximum RMS Voltage	V_{RMS}	420	V
Maximum DC Blocking Voltage	V_{DC}	600	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	12	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	135	A
Maximum Instantaneous Forward Voltage (Note 1) @ 12 A / T_A=25℃	V_F	2.0	V
Maximum DC Reverse Current at Rated T_A=25 ℃ DC Blocking Voltage T_A=125 ℃	I_R	5 600	uA
Maximum Reverse Recovery Time (Note 2)	Trr	20	nS
Typical Thermal Resistance (Note 3)	$R_{\theta jC}$	4.5	^{O}C/W
Operating Temperature Range	T_J	- 55 to + 150	^{O}C
Storage Temperature Range	T_{STG}	- 55 to + 150	^{O}C

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

Note 3 : Mount on Heatsink size of 4" x 6" x 0.25" Al-Plate

Version:B13

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RATINGS AND CHARACTERISTIC CURVES (UGF12J)

FIG.1 FORWARD CURRENT DERATING CURVE

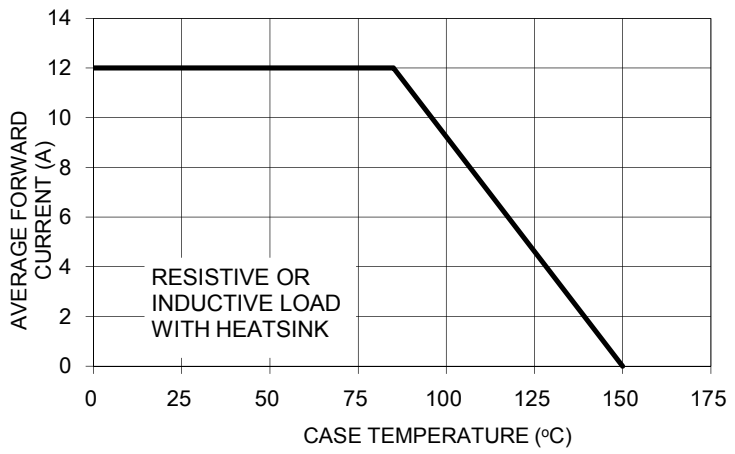


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

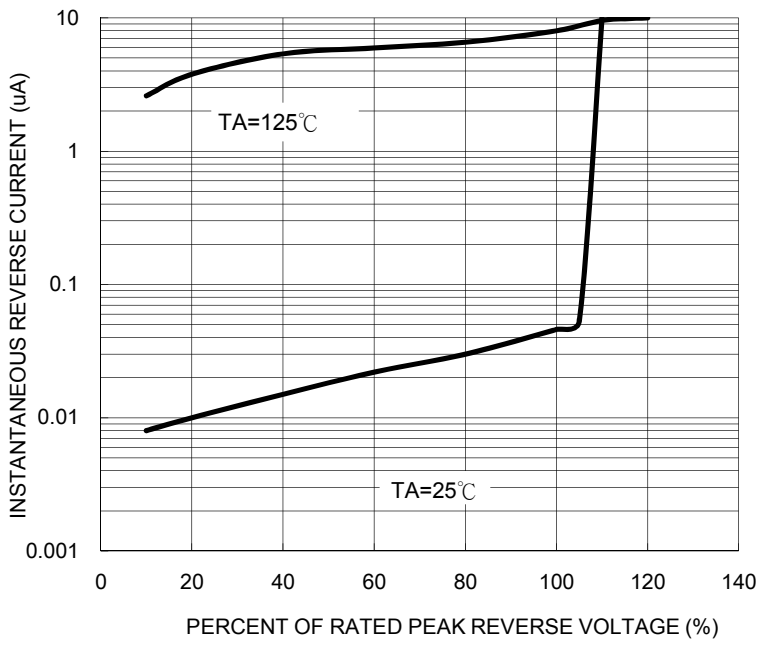


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

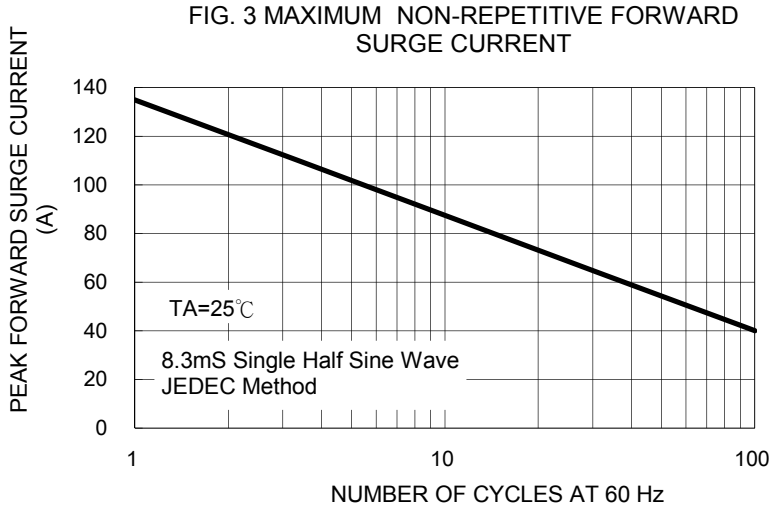


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

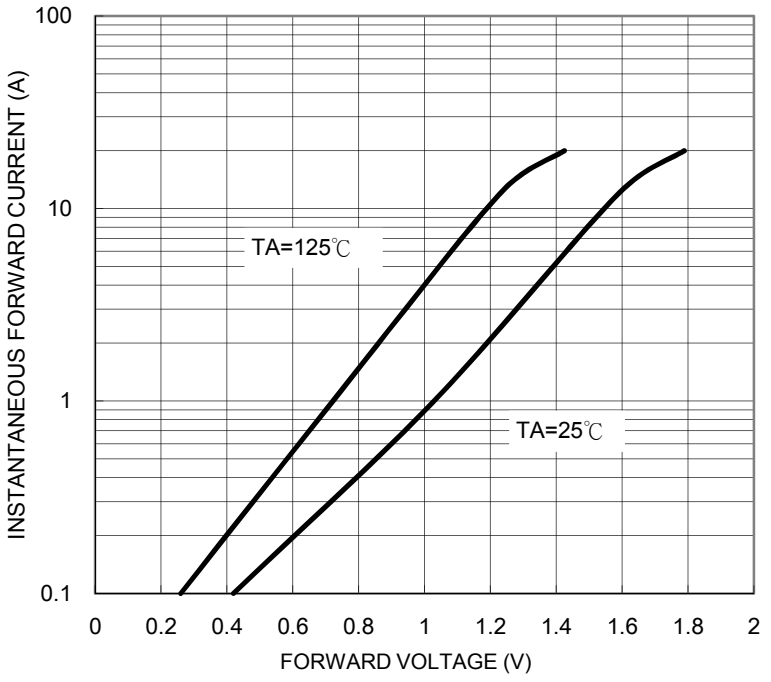
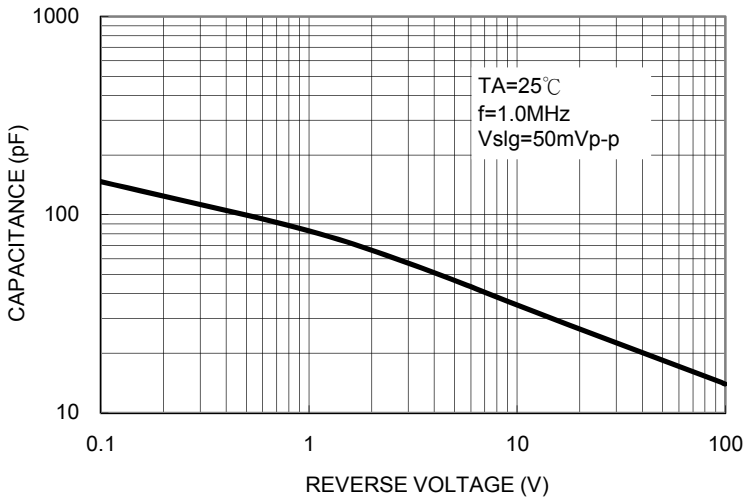


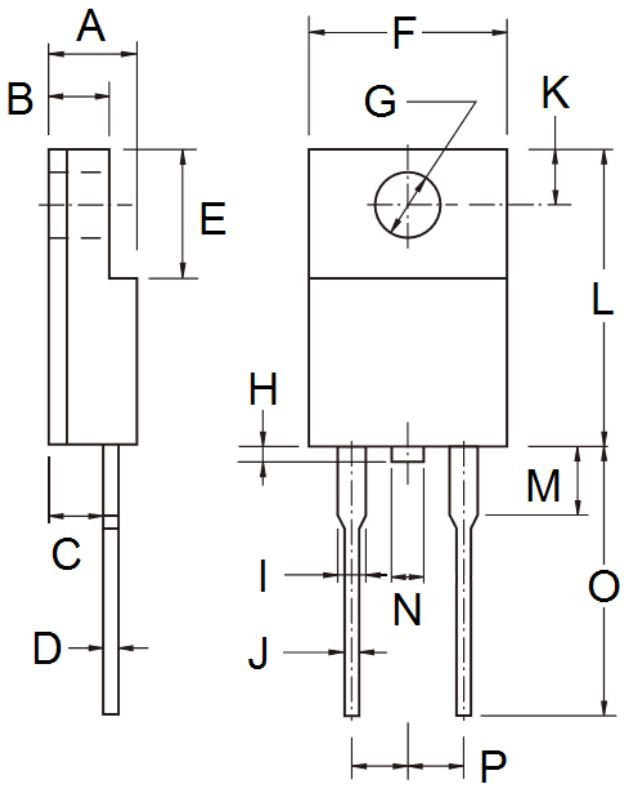
FIG. 5 TYPICAL JUNCTION CAPACITANCE



Ordering information

Part No.	Package	BULK Packing	Packing code	Packing code (Green)
UGF12J	ITO-220AC	50 / TUBE	C0	C0G

Dimensions



Case Positive

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	-	1.60	-	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