

## Switchmode Full Plastic Single Ultra-fast Power Rectifiers

Designed for use in switching power supplies, inverters and as free wheeling diodes. These state-of-the-art devices have the following

### Features

- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* 150°C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage, High Current Capability
- \* High-Switching Speed 50 Nanosecond Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory
- \* Flammability Classification 94V-0
- \* *Pb free*
- \* *In compliance with EU RoHs directives*



**ULTRA FAST  
RECTIFIERS**

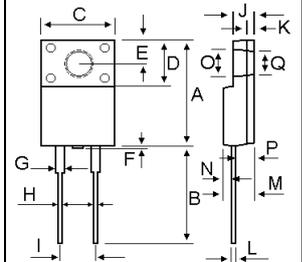
**15 AMPERES  
600 VOLTS**



**ITO-220AC**

### MAXIMUM RATINGS

Characteristic	Symbol	URAF1560	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	420	V
Average Rectifier Forward Current	$I_{F(AV)}$	15	A
Peak Repetitive Forward Current (Rate $V_R$ , Square Wave, 20kHz)	$I_{FM}$	15	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	$I_{FSM}$	225	A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +150	°C



DIM	MILLIMETERS	
	MIN	MAX
A	14.80	16.10
B	12.65	13.80
C	9.85	10.36
D	4.60	6.80
E	2.50	3.50
F	---	2.00
G	1.00	1.45
H	0.30	0.90
I	4.80	5.40
J	2.34	3.30
K	0.55	1.30
L	0.36	0.80
M	4.20	4.90
N	1.10	1.80
O	2.90	3.50
P	2.50	3.15
Q	2.90	3.50

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage ( $I_F = 15$ Amp $T_C = 25^\circ\text{C}$ ) ( $I_F = 15$ Amp $T_C = 125^\circ\text{C}$ )	$V_F$	---	1.20 1.00	1.60 ---	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C = 25^\circ\text{C}$ ) (Rated DC Voltage, $T_C = 125^\circ\text{C}$ )	$I_R$	---	0.01 5	10 ---	$\mu\text{A}$
Typical Thermal Resistance junction to case	$R_{\theta jc}$		2.0		°C/W
Reverse Recovery Time ( $I_F = 0.5$ A, $I_R = 1.0$ , $I_{rr} = 0.25$ A)	$T_{rr}$	---	35	50	ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f = 1$ MHz)	$C_P$		100		pF

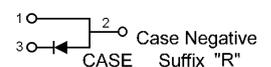
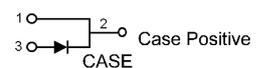


FIG-1 TYPICAL FORWARD CHARACTERISTICS

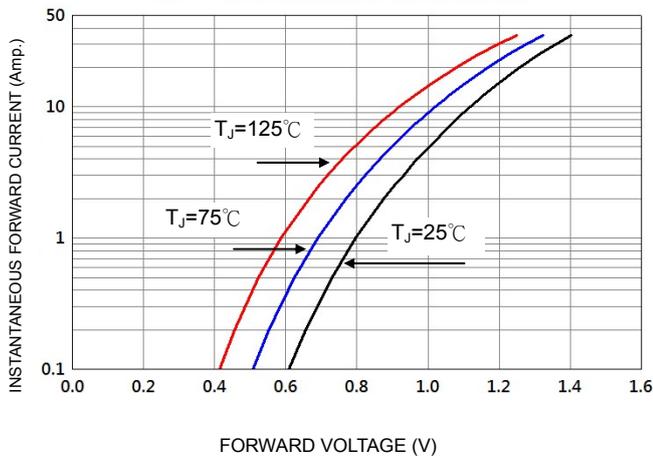


FIG-3 FORWARD CURRENT DERATING CURVE

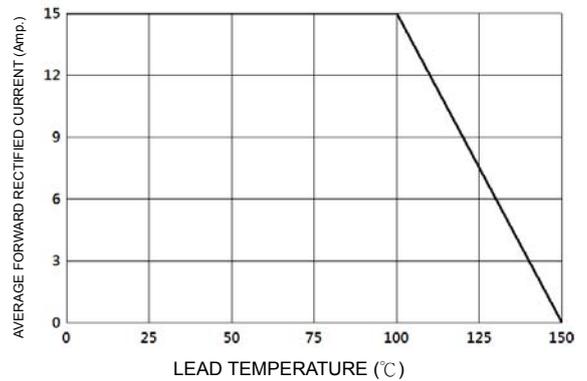


FIG-2 TYPICAL REVERSE CHARACTERISTICS

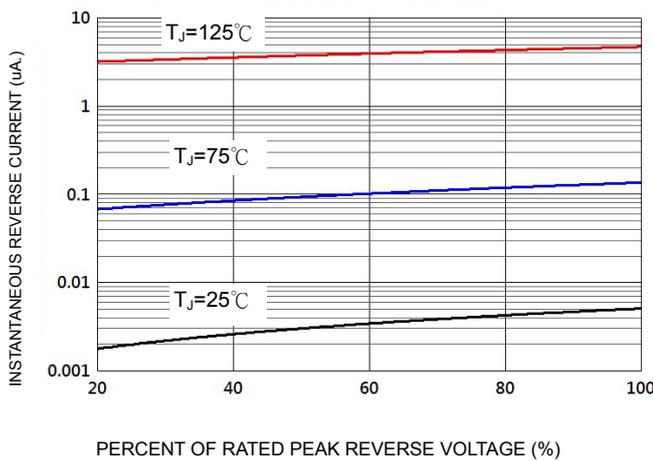


FIG-4 TYPICAL JUNCTION CAPACITANCE

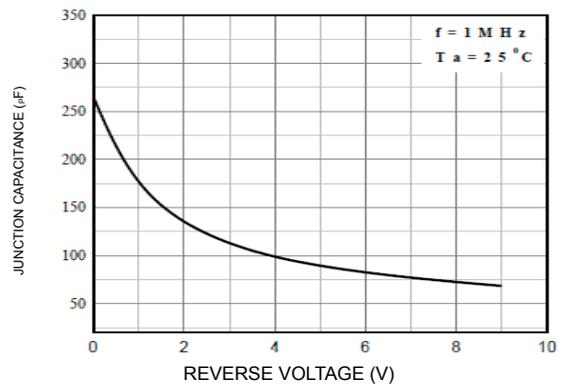
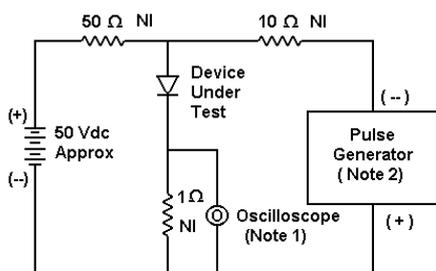
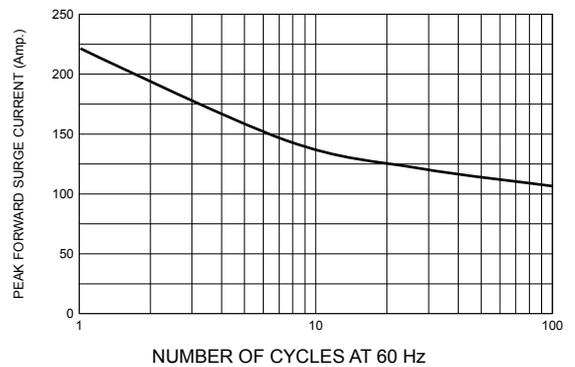
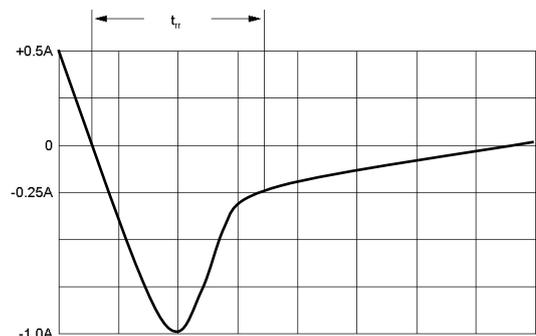


FIG-5 PEAK FORWARD SURGE CURRENT



- Notes:  
 1. Rise Time = 7 ns max. Input Impedance = 1 M $\Omega$ , 22 pF  
 2. Rise Time = 10 ns max. Input Impedance = 50  $\Omega$



Set time base for 10/20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

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