

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**

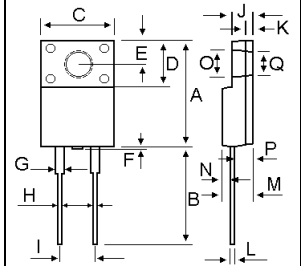
**20 AMPERES
400 VOLTS**



ITO-220AC

MAXIMUM RATINGS

Characteristic	Symbol	URAF2040	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	280	V
Average Rectifier Forward Current	$I_{F(AV)}$	20	A
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz)	I_{FM}	20	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	I_{FSM}	200	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 ($I_F=20$ Amp $T_C=25^\circ\text{C}$) ($I_F=20$ Amp $T_C=125^\circ\text{C}$)	V_F	---	1.12 0.96	1.50 ---	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 8	10 ---	uA
Reverse Recovery Time ($I_F=0.5$ A, $I_R=1.0$, $I_{rr}=0.25$ A)	T_{rr}	---	31	50	ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f=1$ MHz)	C_P		130		pF

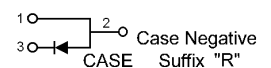
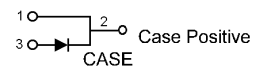


FIG-1 TYPICAL FORWARD CHARACTERISTICS

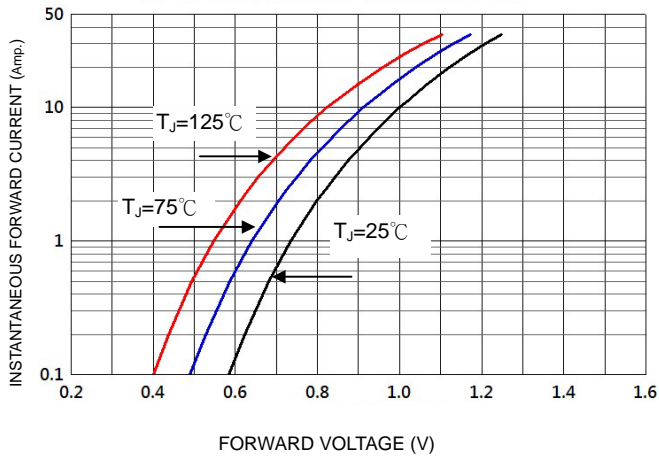


FIG-3 FORWARD CURRENT DERATING CURVE

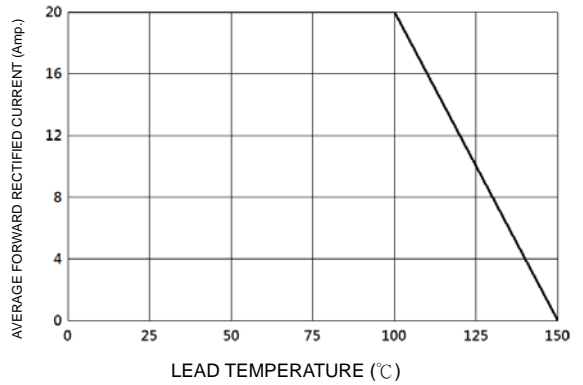


FIG-2 TYPICAL REVERSE CHARACTERISTICS

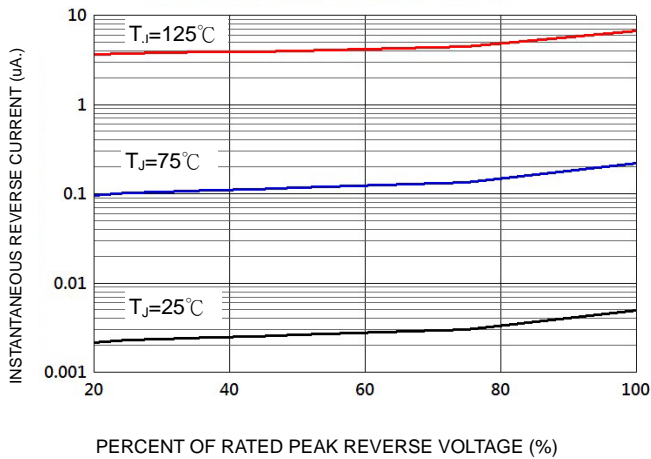


FIG-4 TYPICAL JUNCTION CAPACITANCE

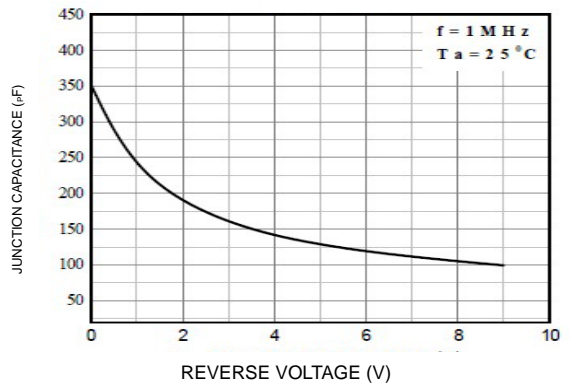
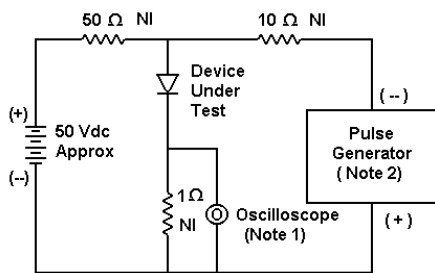
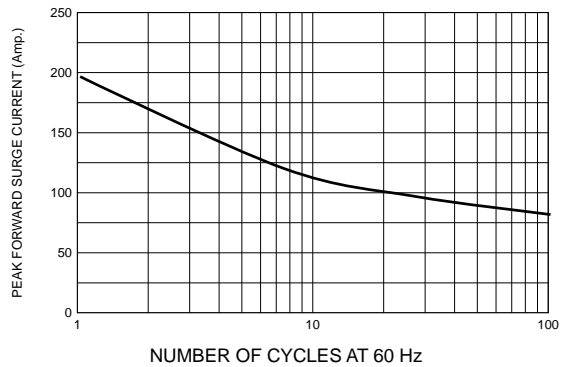
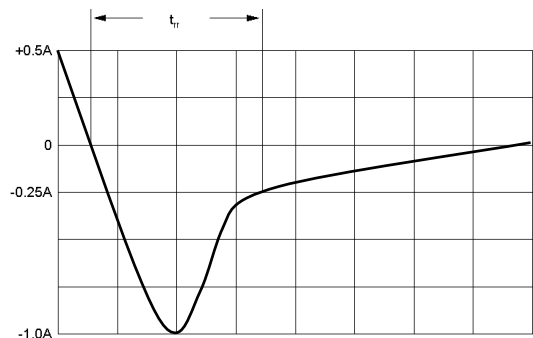


FIG-5 PEAK FORWARD SURGE CURRENT



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



Set time base for 10/20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

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