

## Switchmode Full Plastic Dual Ultrafast Power Rectifiers

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

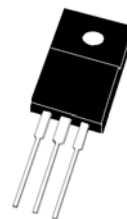
### Features

- \* 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-O
- \* **Pb free**
- \* **In compliance with EU RoHs directives**



### Ultrafast Power RECTIFIERS

**10 AMPERES  
400 VOLTS**



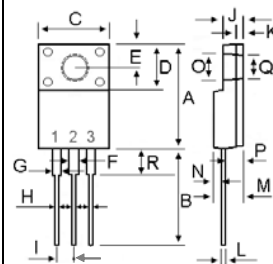
ITO-220AB

### MAXIMUM RATINGS

Characteristic	Symbol	UREF1040C	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 Total Device (Rated $V_R$ ), $T_C=100^\circ\text{C}$	$I_{F(AV)}$	5 10	A
Peak Repetitive Forward Current (Rate $V_R$ , Square Wave, 20kHz)	$I_{FM}$	10	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz)	$I_{FSM}$	100	A
Operating Junction Temperature	$T_{Jg}$	150	°C
Storage Temperature Range	$T_{stg}$	-65 to +150	°C

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage ( $I_F=5\text{ Amp } T_C=25^\circ\text{C}$ ) ( $I_F=5\text{ Amp } T_C=125^\circ\text{C}$ )	$V_F$	---	1.12 0.97	1.30 ---	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 2	5 ---	uA
Reverse Recovery Time ( $I_F=0.5\text{ A}$ , $I_R=1.0$ , $I_{rr}=0.25\text{ A}$ )	$T_{rr}$	---	22	50	ns
Typical Thermal Resistance junction to case	$R_{\theta jc}$		3.6		°C/w
Typical Junction Capacitance (Reverse Voltage of 4 volts & f=1 MHz)	$C_P$		32		pF



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	1.00	1.45
G	1.00	1.45
H	0.30	0.90
I	2.40	2.70
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
R	3.10	4.85

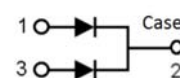


FIG-1 TYPICAL FORWARD CHARACTERISTICS

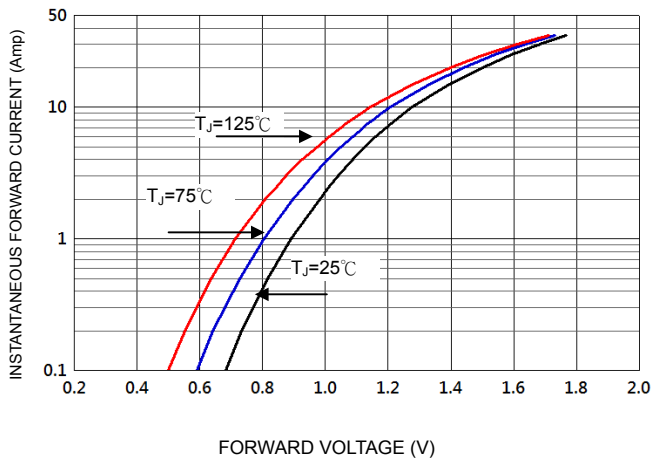


FIG-3 FORWARD CURRENT DERATING CURVE

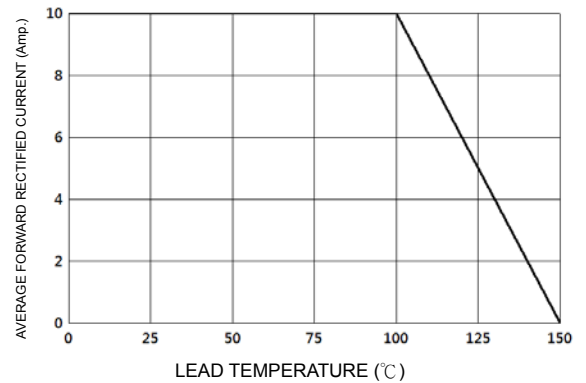


FIG-2 TYPICAL REVERSE CHARACTERISTICS

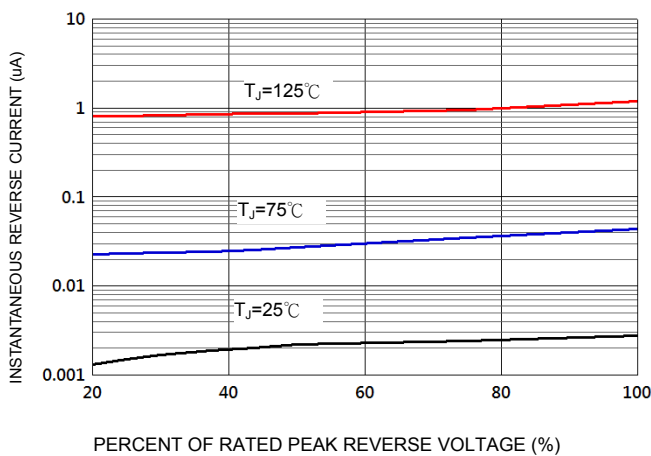


FIG-4 TYPICAL JUNCTION CAPACITANCE

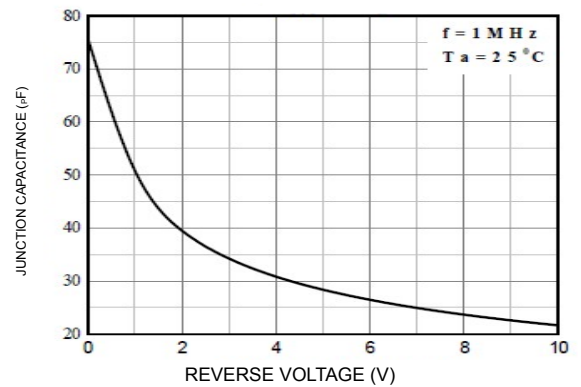
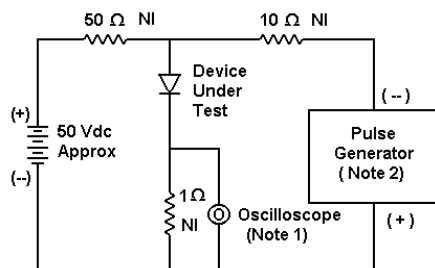
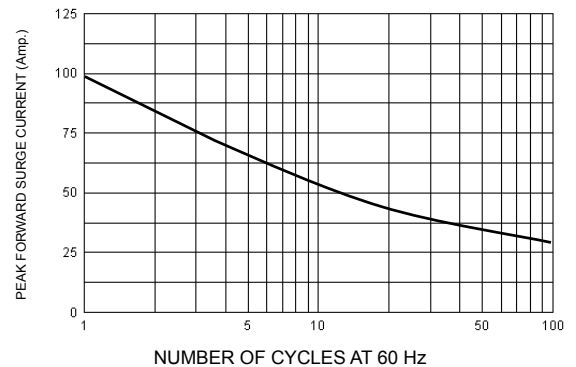
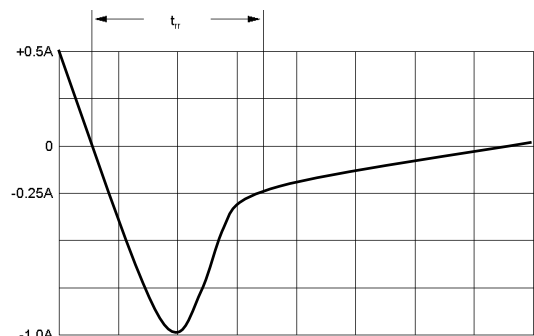


FIG-5 PEAK FORWARD SURGE CURRENT



- 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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