

## Switch mode 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
- \* High Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage , High Current Capability
- \* High-Switching Speed recovery Time
- \* Plastic Material used Carries Underwriters Laboratory  
Flammability Classification 94V-O
- \* Pb free
- \* In compliance with EU RoHs directives



**ULTRAFAST  
RECTIFIERS**

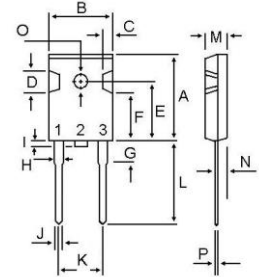
**60 AMPERES  
600 VOLTS**



**TO-3PA**

### MAXIMUM RATINGS

Characteristic	Symbol	UREA6060N	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	$I_{F(AV)}$	60	A
Peak Repetitive Forward Current (Rate $V_R$ , Square Wave, 20kHz)	$I_{FM}$	60	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz)	$I_{FSM}$	600	A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +150	°C



DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	---	1.25
J	0.89	1.53
K	10.52	11.32
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70

### ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage ( $I_F = 60$ Amp $T_C = 25^\circ\text{C}$ ) ( $I_F = 60$ Amp $T_C = 125^\circ\text{C}$ )	$V_F$	---	1.45 1.15	1.68 ---	V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C = 25^\circ\text{C}$ ) ( Rated DC Voltage, $T_C = 125^\circ\text{C}$ )	$I_R$	---	0.05 32	10 ---	$\mu\text{A}$
Reverse Recovery Time ( $I_F = 0.5$ A, $I_R = 1.0$ , $I_{rr} = 0.25$ A )	$T_{rr}$	---	41	50	ns
Typical Thermal Resistance junction to case	$R_{\theta jc}$		6.8		°C/w
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f = 1$ MHz)	$C_P$		400		pF

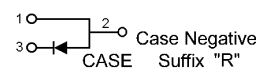
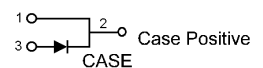


FIG-1 TYPICAL FORWARD CHARACTERISTICS

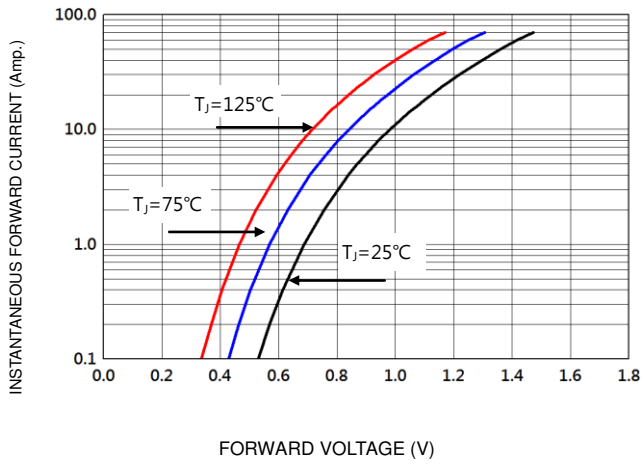


FIG-3 FORWARD CURRENT DERATING CURVE

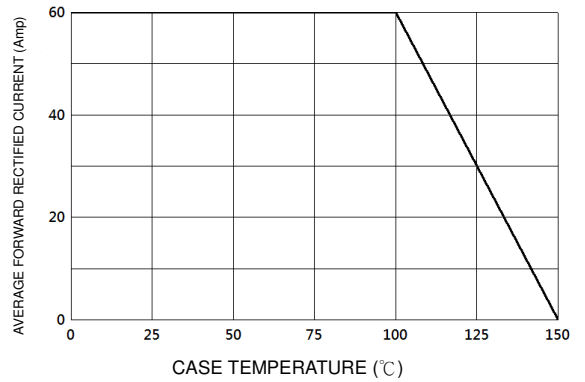


FIG-2 TYPICAL REVERSE CHARACTERISTICS

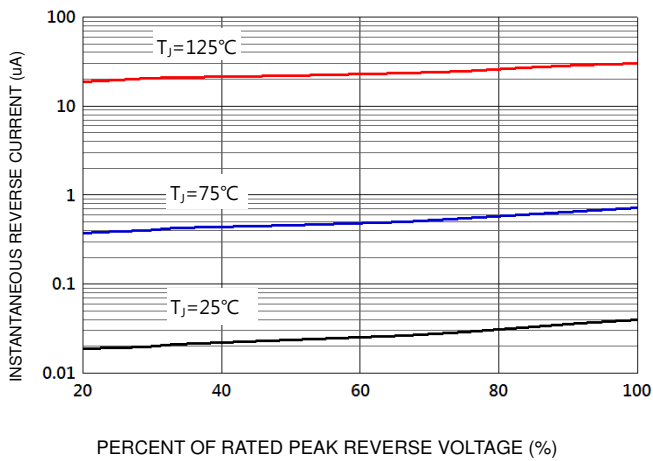
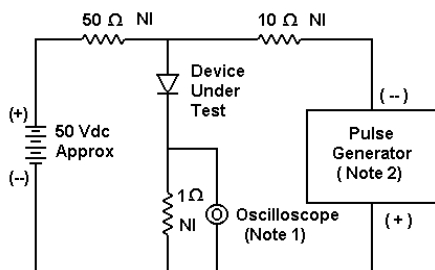
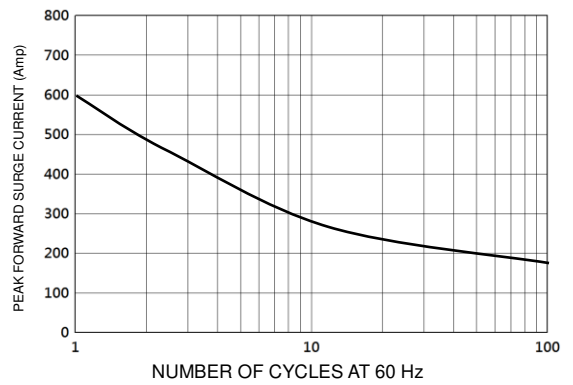
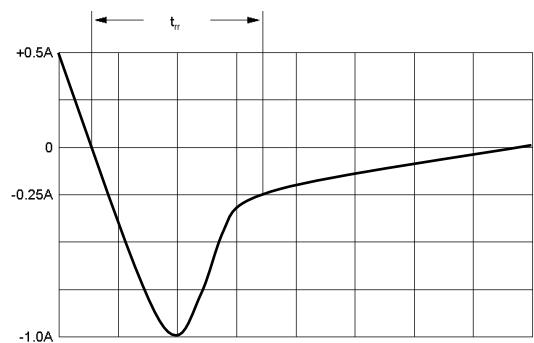


FIG-4 PEAK FORWARD SURGE CURRENT



- 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-5 Reverse Recovery Time Characteristic and Test Circuit Diagram

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