

Switch mode 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-O
- * Pb free
- * In compliance with EU RoHs directives



**ULTRA FAST
RECTIFIERS**

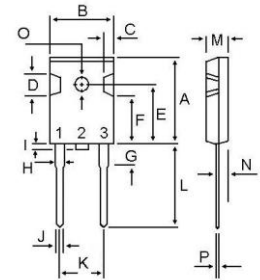
**30 AMPERES
400 VOLTS**



TO-3PA

MAXIMUM RATINGS

Characteristic	Symbol	UREA3040N	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	$I_{F(AV)}$	30	A
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz)	I_{FM}	30	A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz)	I_{FSM}	450	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 ($I_F = 30$ Amp $T_C = 25^\circ\text{C}$) ($I_F = 30$ Amp $T_C = 125^\circ\text{C}$)	V_F	---	1.17 0.97	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 20	15 ---	uA
Reverse Recovery Time ($I_F = 0.5$ A, $I_R = 1.0$, $I_{rr} = 0.25$ A)	T_{rr}	---	37	50	ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f = 1$ MHz)	C_P		280		pF

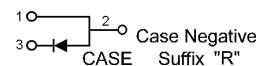
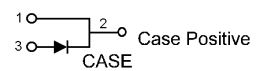


FIG-1 TYPICAL FORWARD CHARACTERISTICS

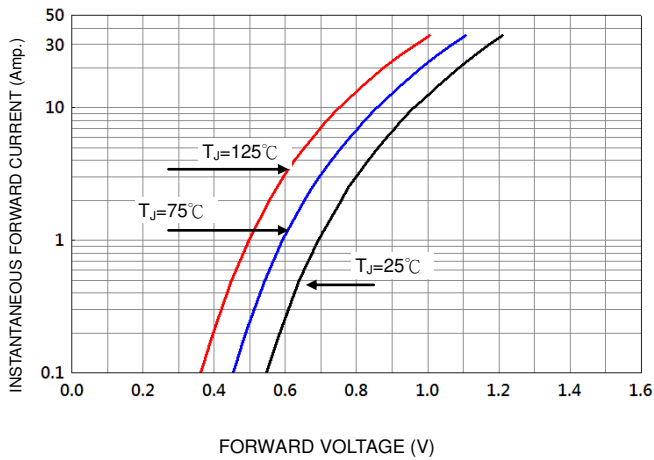


FIG-3 FORWARD CURRENT DERATING CURVE

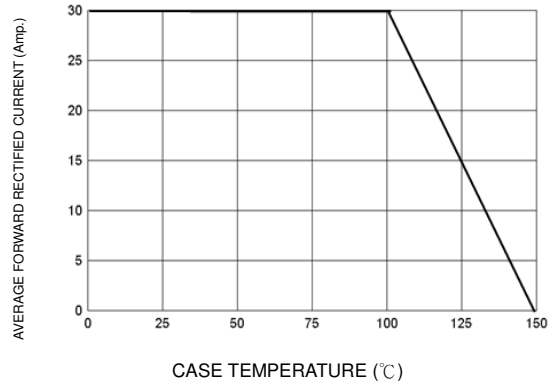


FIG-2 TYPICAL REVERSE CHARACTERISTICS

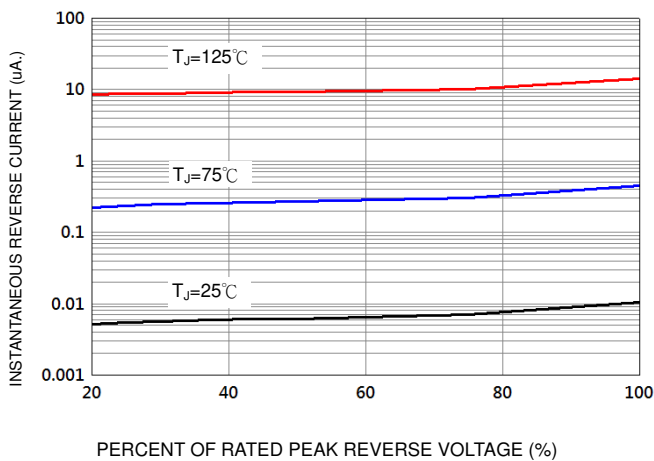


FIG-4 TYPICAL JUNCTION CAPACITANCE

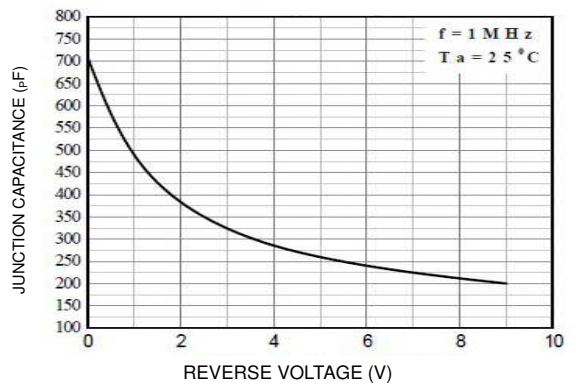
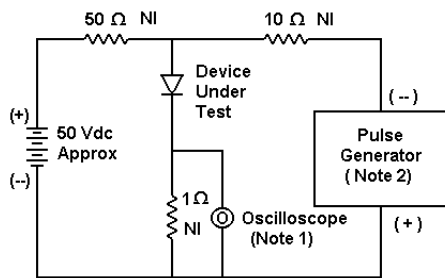
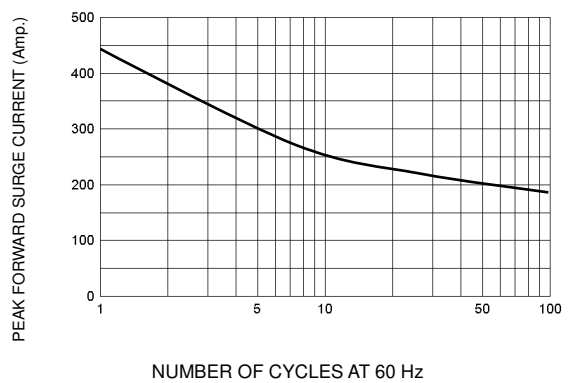
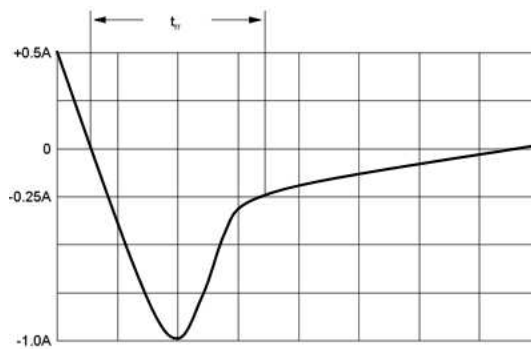


FIG-5 PEAK FORWARD SURGE CURRENT



- 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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