

## Switchmode 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

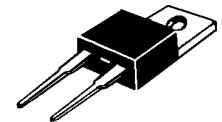
### Features

- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* Glass Passivated chip junctions
- \* 150°C 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*



**ULTRA FAST  
RECTIFIERS**

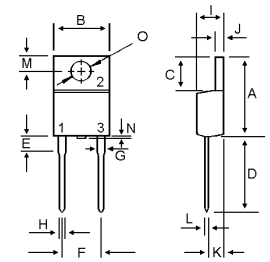
**30 AMPERES  
200 VOLTS**



**TO-220A**

### MAXIMUM RATINGS

Characteristic	Symbol	UE30A20	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	140	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 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	14.68	16.00
B	9.78	10.42
C	5.02	6.60
D	13.00	14.62
E	3.10	4.19
F	4.82	5.34
G	1.10	1.67
H	0.69	1.01
I	4.22	4.98
J	1.14	1.40
K	2.20	3.30
L	0.28	0.61
M	2.48	3.00
N	---	2.00
O	3.50	4.00

### 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 $T_C = 125^\circ\text{C}$ )	$V_F$	---	0.97 0.78	1.0 ---	V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C = 25^\circ\text{C}$ ) ( Rated DC Voltage, $T_C = 125^\circ\text{C}$ )	$I_R$	---	0.02 30	15 ---	$\mu\text{A}$
Reverse Recovery Time ( $I_F = 0.5$ A, $I_R = 1.0$ , $t_{rr} = 0.25$ A )	$T_{rr}$	---	33	50	ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f = 1$ MHz)	$C_P$		340		$\mu\text{F}$

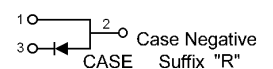
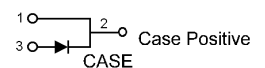


FIG-1 TYPICAL FORWARD CHARACTERISTICS

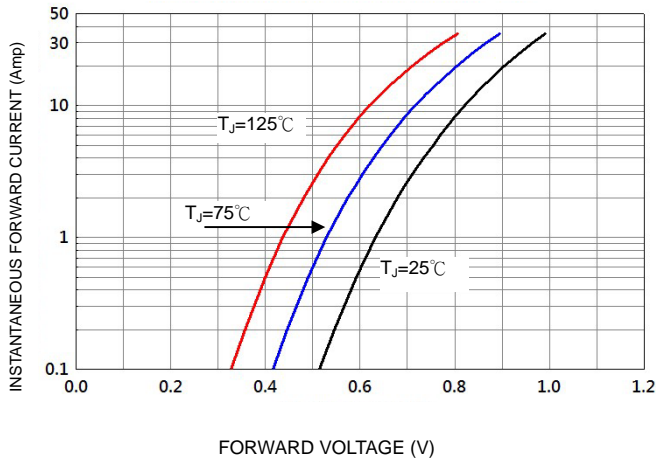


FIG-3 FORWARD CURRENT DERATING CURVE

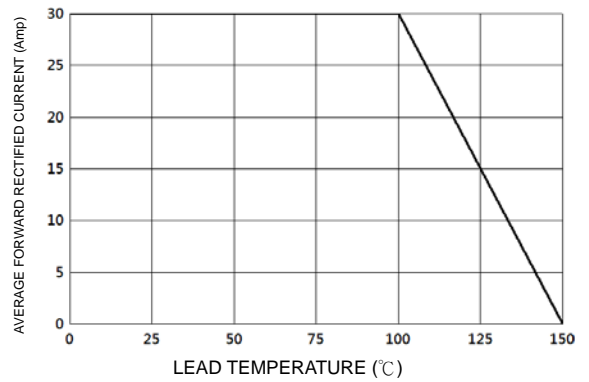


FIG-2 TYPICAL REVERSE CHARACTERISTICS

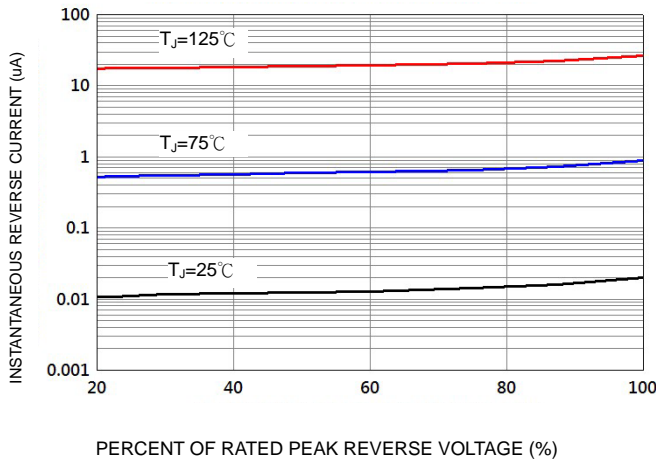


FIG-4 TYPICAL JUNCTION CAPACITANCE

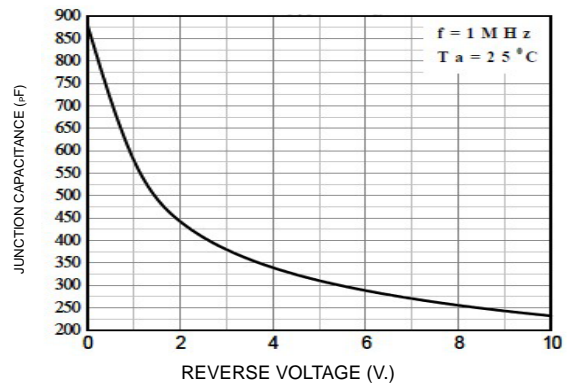
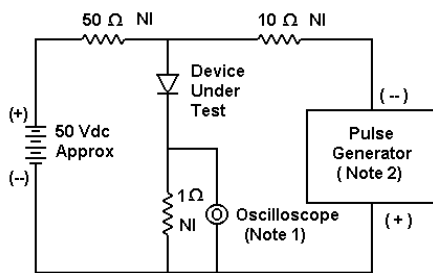
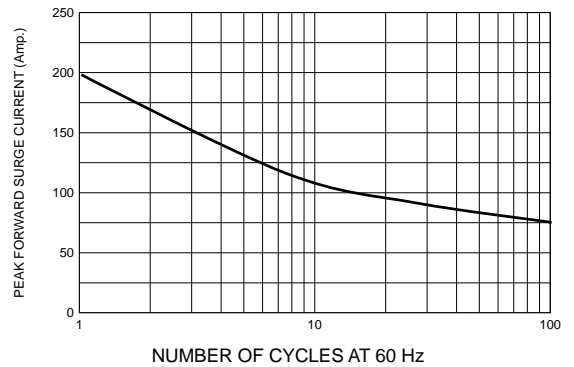
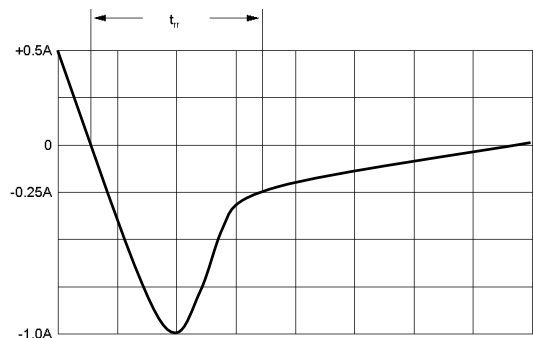


FIG-5 PEAK FORWARD SURGE CURRENT



- 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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