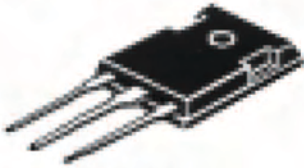


# Ultra Fast Rectifiers



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

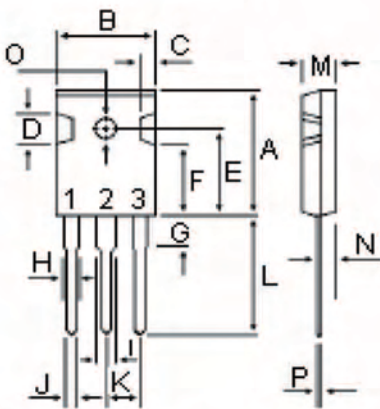
## Switch mode Dual Ultrafast Power Rectifiers



### Features:

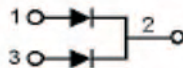
- Glass passivated chip junctions.
- Low reverse leakage current.
- Fast switching for high efficiency.
- 150°C operating junction temperature.
- Low stored charge majority carrier conduction.
- Low forward voltage, high current capability.
- Plastic material used carries Underwriters Laboratory Flammability classification 94V-O.

**30 Amperes  
200 Volts  
TO-3P**



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	2.92	3.23
J	0.89	1.53
K	5.26	5.66
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

Dimensions : Millimetres



**Common Cathode**

### Part Number Table

Description	Part Number
Ultra Fast Rectifiers	MUR3020WT

## Maximum Ratings

Characteristic	Symbol	MUR3020WT	Units
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	
Average Rectifier Forward Current Per Leg Per Total Device	$I_F$ (AV)	15 30	A
Peak Repetitive Forward Current (Rate $V_R$ , Square Wave, 20kHz)	$I_{FM}$	30	
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz)	$I_{FSM}$	300	
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +150	°C

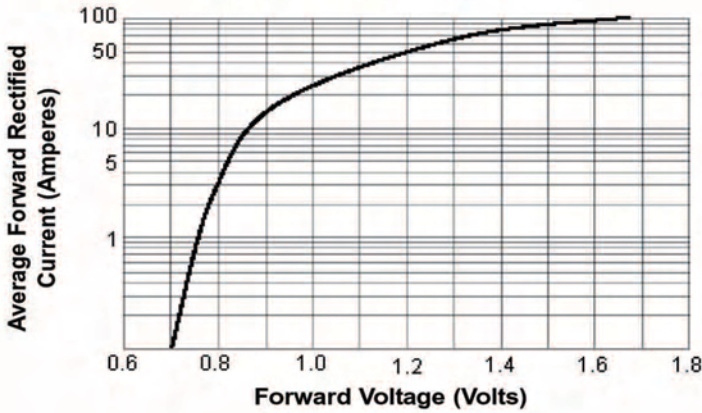
## Electrical Characteristics

Characteristic	Symbol	MUR3020WT	Units
Maximum Instantaneous Forward Voltage ( $I_F = 15$ Amperes $T_C = 25^\circ\text{C}$ ) ( $I_F = 15$ Amperes $T_C = 125^\circ\text{C}$ )	$V_F$	0.975 0.880	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C = 25^\circ\text{C}$ ) (Rated DC Voltage, $T_C = 150^\circ\text{C}$ )	$I_R$	10 500	$\mu\text{A}$
Reverse Recovery Time ( $I_F = 0.5\text{A}$ , $I_R = 1.0$ $I_{rr} = 0.25\text{A}$ )	$T_{rr}$	35	ns
Typical Junction Capacitance (Reverse Voltage of 4 volts and $f = 1$ MHz)	$C_P$	250	pF

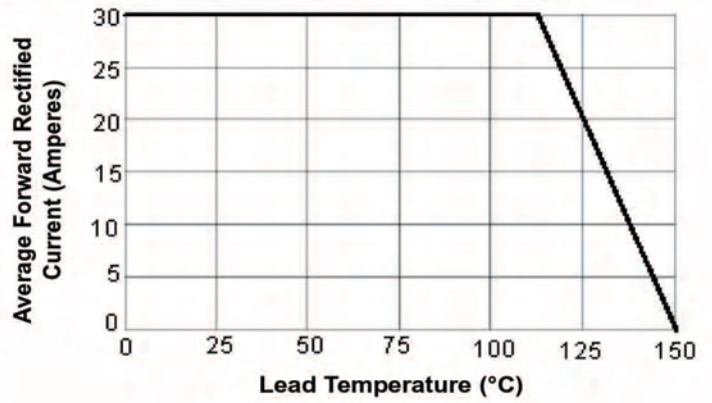
# Ultra Fast Rectifiers



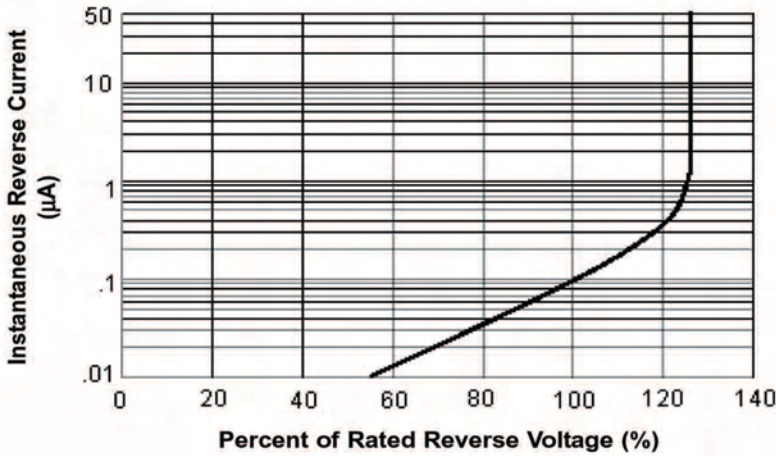
Typical Forward Characteristics



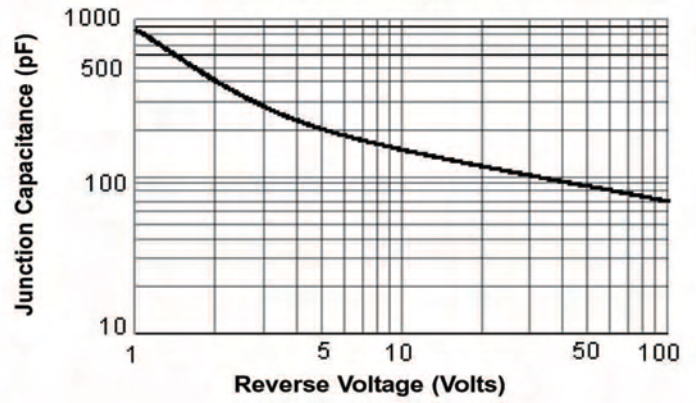
Forward Current Derating Curve



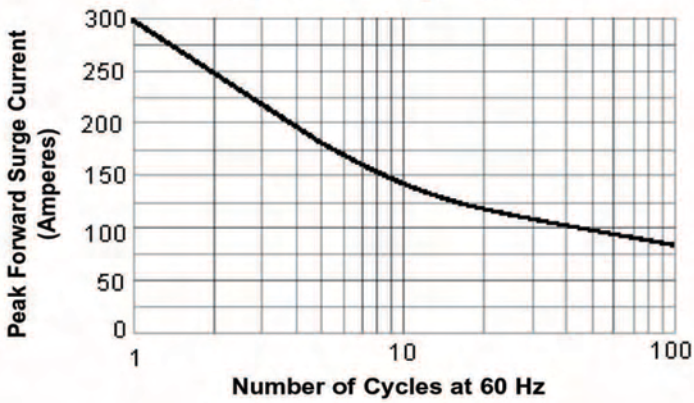
Typical Reverse Characteristics

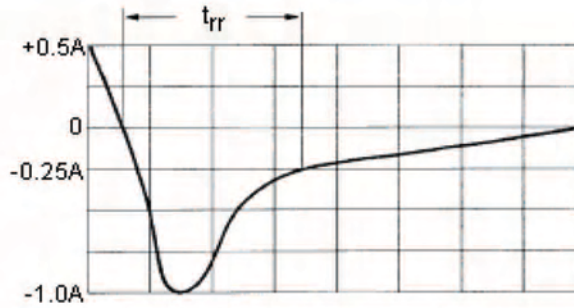
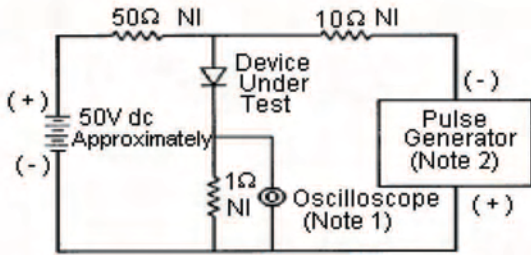


Typical Junction Capacitance



Peak Forward Surge Current





Set time base for 10/20 ns/cm

Reverse Recovery Time Characteristic and Test Circuit Diagram

## Notes:

1. Rise Time = 7 ns maximum input impedance = 1M $\Omega$ , 22pF.
2. Rise Time = 10 ns maximum input impedance = 50 $\Omega$ .

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