

# 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:

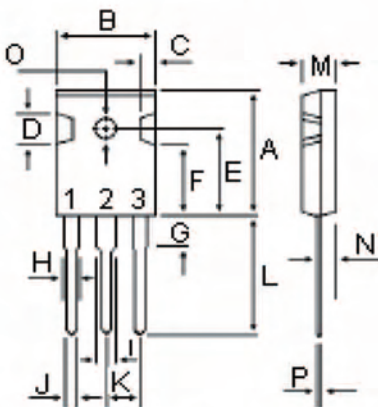
## Switch mode Dual Ultrafast Power Rectifiers



### Features:

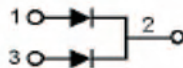
- Glass passivated chip junctions.
- Low reverse leakage current.
- Fast switching for high efficiency.
- 150°C operating junction temperature.
- Low stored charge majority carrier conduction.
- Low forward voltage, high current capability.
- Plastic material used carries Underwriters Laboratory Flammability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

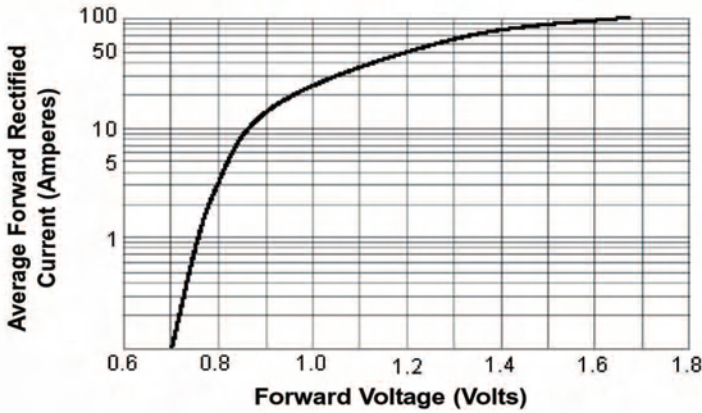
## Electrical Characteristics

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

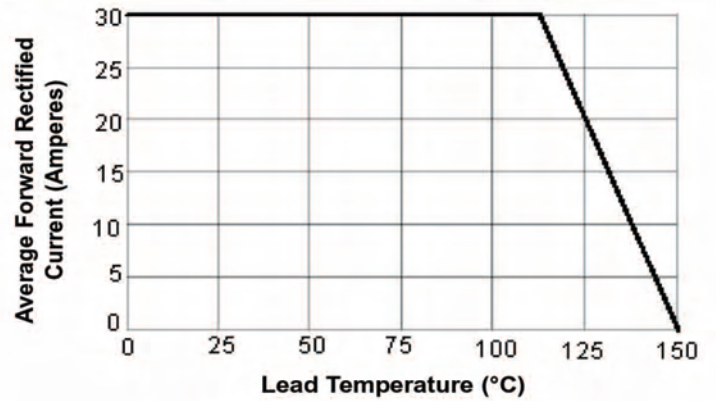
# Ultra Fast Rectifiers



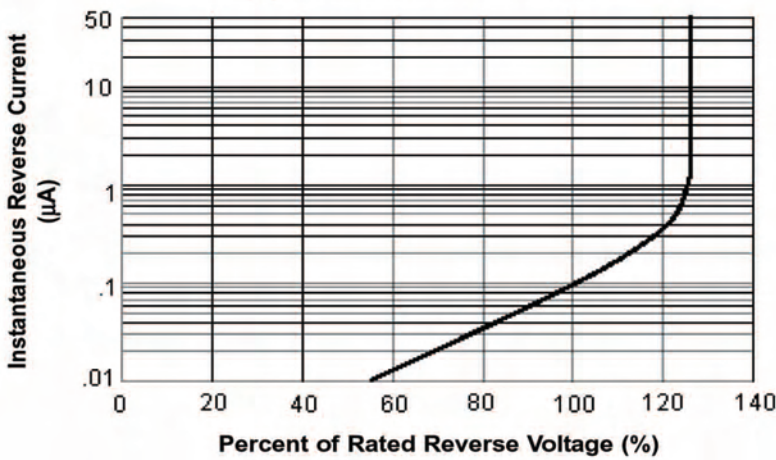
Typical Forward Characteristics



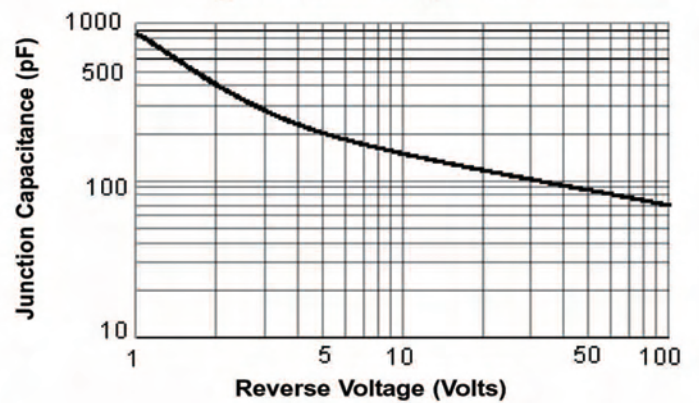
Forward Current Derating Curve



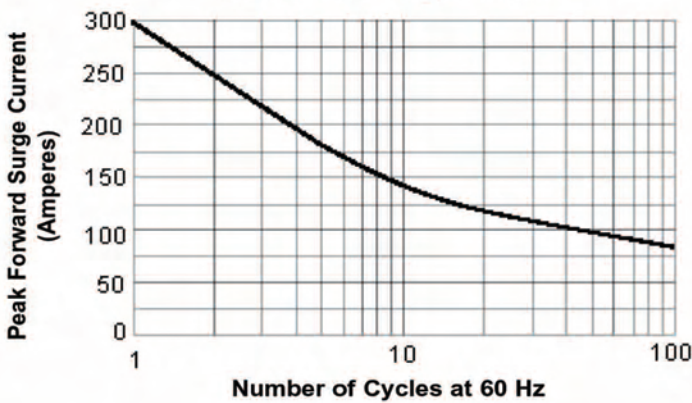
Typical Reverse Characteristics

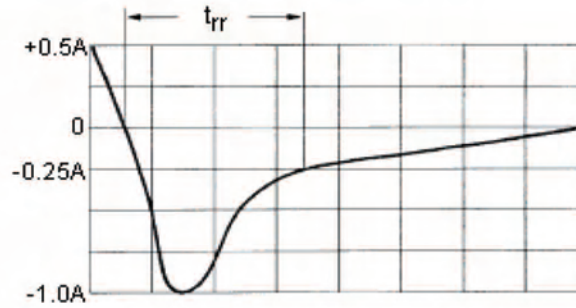
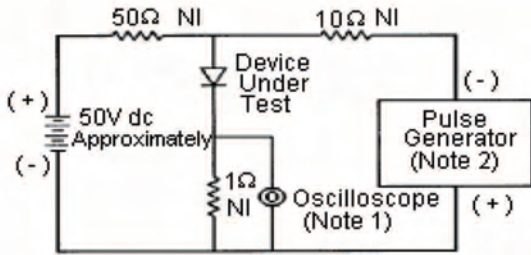


Typical Junction Capacitance



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 $\Omega$ .

**Disclaimer** This data sheet and its contents (the "Information") belong to the Premier Farnell Group (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. SPC Multicom is the registered trademark of the Group. © Premier Farnell plc 2010.