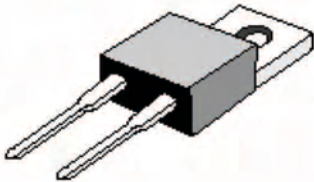


# Ultra Fast Rectifiers



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

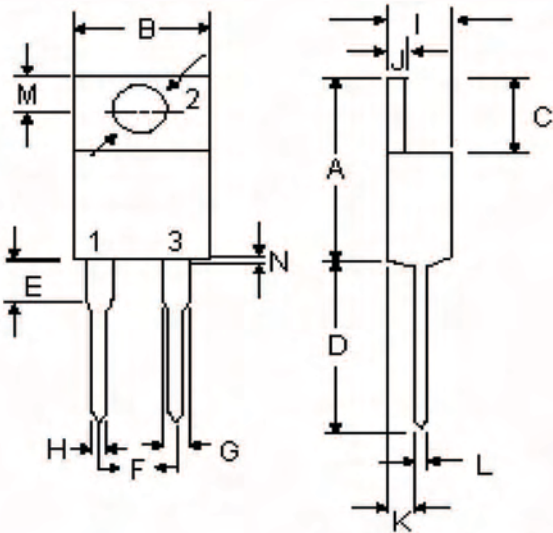
## Ultra Fast Recovery Rectifier Diodes



### 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 50 nanosecond recovery time.
- Plastic material used carries Underwriters Laboratory Flammability classification 94V-O.

15 Amperes  
TO-220A



DIM	MILLIMETERS	
	MIN	MAX
A	14.68	15.32
B	9.78	10.42
C	6.01	6.52
D	13.06	14.62
E	3.57	4.07
F	4.83	5.33
G	1.12	1.36
H	0.72	0.96
I	4.22	4.98
J	1.14	1.36
K	2.20	2.97
L	0.33	0.55
M	2.48	2.98
N	-	1.00
O	3.70	3.90

Dimensions : Millimetres

### Part Number Table

Description	Part Number
Ultra Fast Rectifiers	MUR1540
Ultra Fast Rectifiers	MUR1560

## Maximum Ratings

Characteristic	Symbol	MUR1540	MUR1560	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	400	600	V
RMS Reverse Voltage	$V_R (RMS)$	280	420	
Average Rectifier Forward Current	$I_F (AV)$	15		A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz)	$I_{FSM}$	225		
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +150		°C

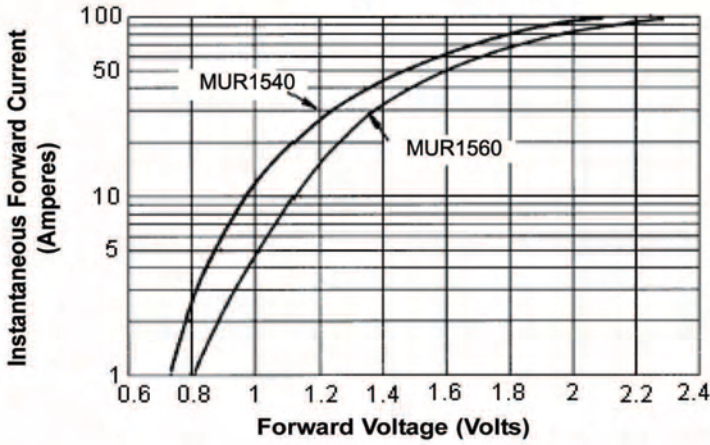
## Electrical Characteristics

Characteristic	Symbol	MUR1540	MUR1560	Units
Maximum Instantaneous Forward Voltage ( $I_F = 15$ Amperes $T_C = 25^\circ\text{C}$ ) ( $I_F = 15$ Amperes $T_C = 100^\circ\text{C}$ )	$V_F$	1.30 1.16	1.50 1.37	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C = 25^\circ\text{C}$ ) (Rated DC Voltage, $T_C = 100^\circ\text{C}$ )	$I_R$	10 700		$\mu\text{A}$
Reverse Recovery Time ( $I_F = 0.5\text{A}$ , $I_R = 1.0\text{A}$ , $I_{rr} = 0.25\text{A}$ )	$T_{rr}$	50		ns
Typical Junction Capacitance (Reverse Voltage of 4 volts and $f = 1$ MHz)	$C_p$	150	120	pF

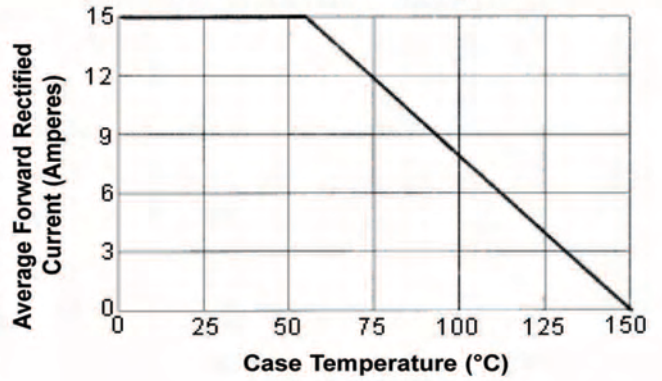
# Ultra Fast Rectifiers



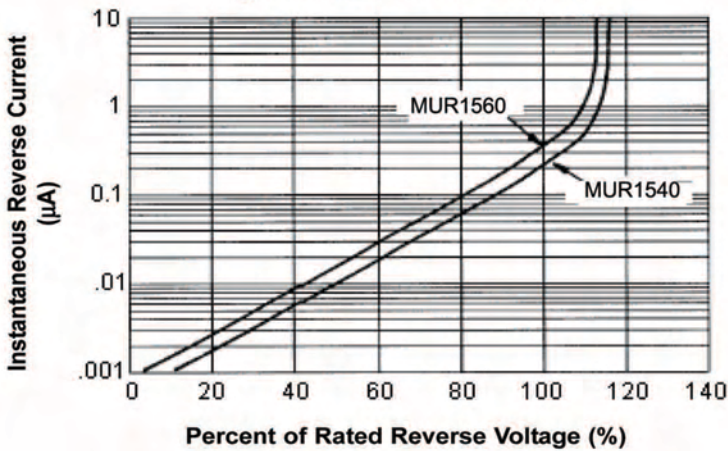
Typical Forward Characteristics



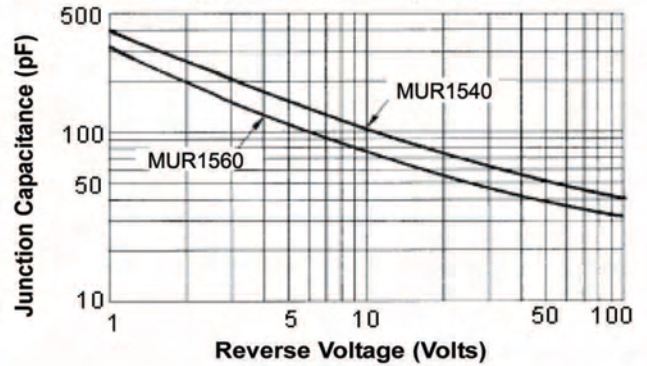
Forward Current Derating Curve



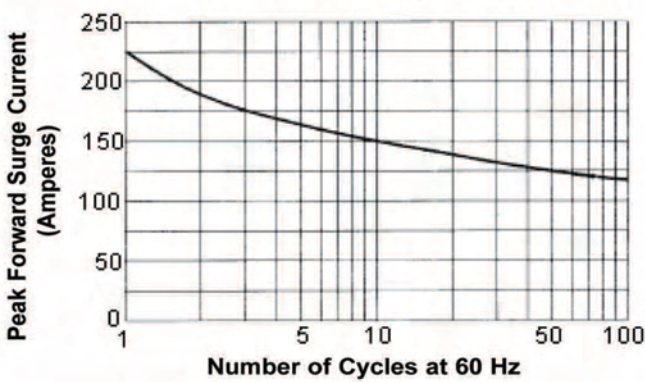
Typical Reverse Characteristics

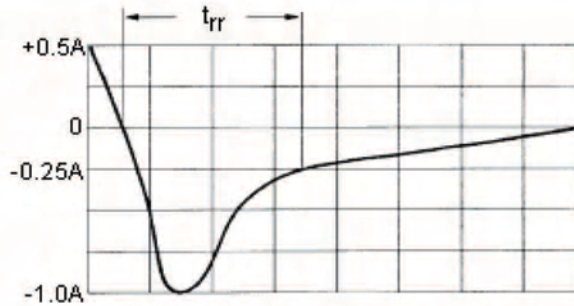
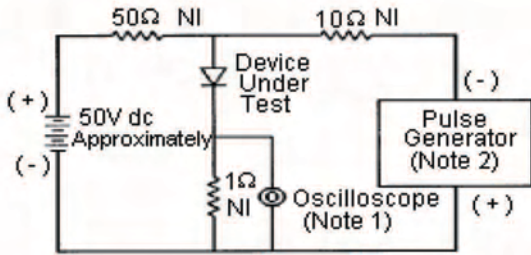


Typical Junction Capacitance



Peak Forward Surge Current





Set time base for 10/20 ns/div

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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