# Ultra Fast Rectifiers

multicomp PRO

RoHS Compliant

## 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-0
- For Part Number MUR1540, marking is “U15A40”

## Specifications

Reverse Voltage : 400 and 600 Volts
Forward Current : 30 Amperes

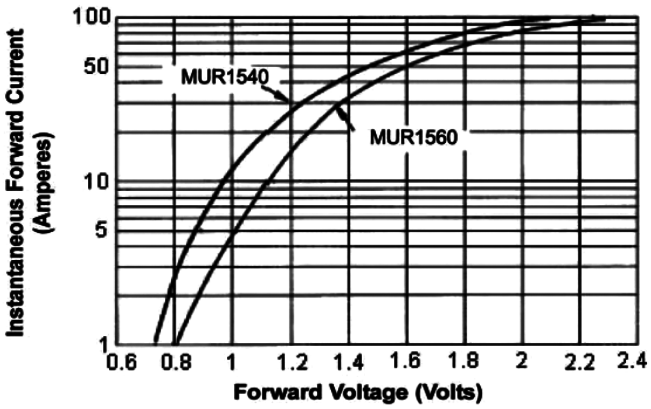
## Maximum Ratings

| Characteristic | Symbol | MUR1540 | MUR1560 | Units |
|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 400 | 600 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 280 | 420 | |
| Average Rectifier Forward Current | $I_{F(AV)}$ | 15 | | A |
| Peak Repetitive Forward Current<br>(Rate $V_R$, Square Wave, 20kHz) | $I_{FM}$ | 20 | | |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-ware, single phase, 60Hz) | $I_{FSM}$ | 225 | | |
| Operating and Storage Junction Temperature Range | $T_J$, $T_{STG}$ | -65 to +150 | | °C |

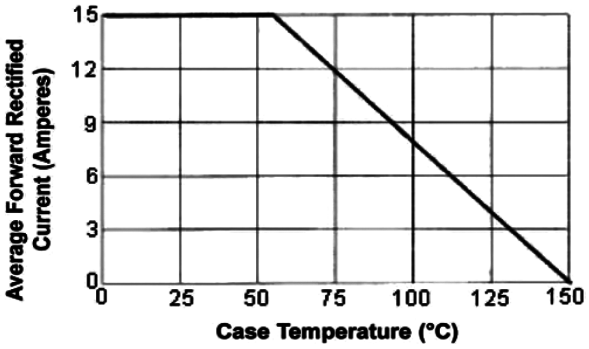
## Electrical Characteristics

| Characteristic | Symbol | MUR1540 | MUR1560 | Units |
|---|---|---|---|---|
| Maximum Instantaneous Forward Voltage<br>($I_F$ = 15 Amperes Tc = 25°C)<br>($I_F$ = 15 Amperes Tc = 125°C) | $V_F$ | 1.3<br>1.16 | 1.5<br>1 .37 | V |
| Maximum Instantaneous Reverse Current<br>(Rated DC Voltage, Tc = 25°C)<br>(Rated DC Voltage, Tc = 125°C) | $I_R$ | 10<br>700 | | mA |
| Reverse Recovery Time<br>($I_F$ = 0.5A, $I_R$ = 1A, $I_{RR}$ = 0.25A) | $T_{RR}$ | 50 | | ns |
| Typical Junction Capacitance<br>(Reverse Voltage of 4 Volts and f = 1MHz) | $C_P$ | 150 | 120 | pF |

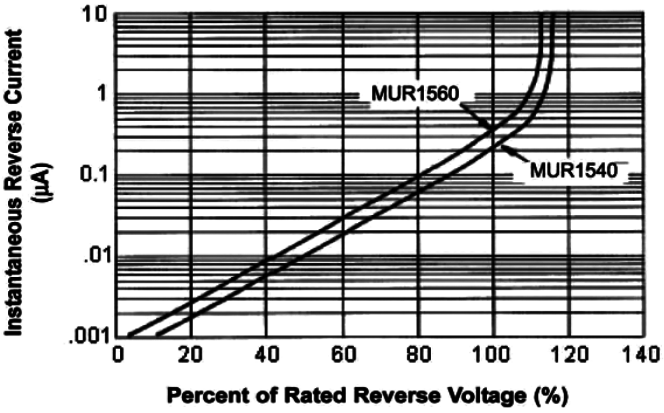
Typical Forward Characteristics



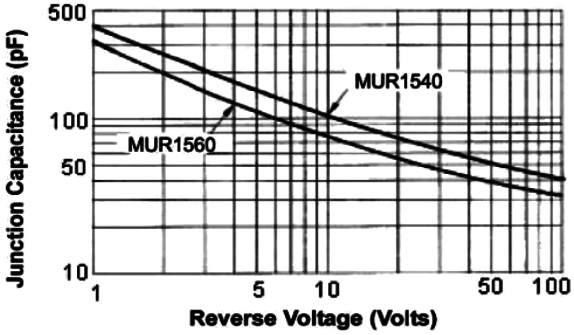

Forward Current Derating Curve



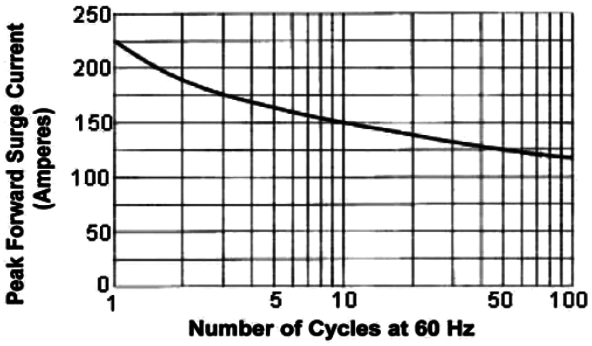

Typical Reverse Characteristics

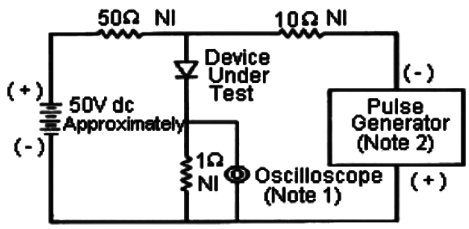


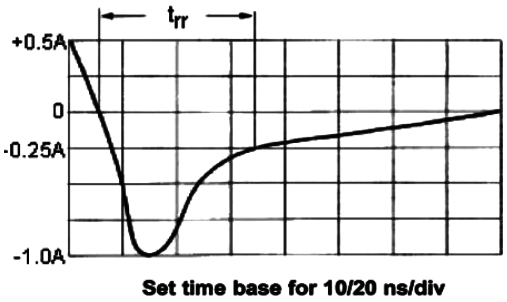

Typical Junction Capacitance




Peak Forward Surge Current





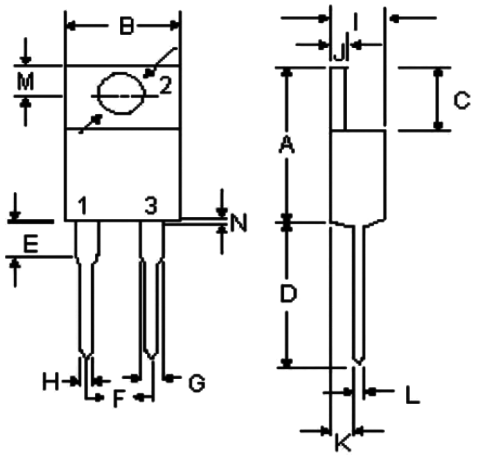




Reverse Recovery Time Characteristic and Test Circuit Diagram

Notes:
1. Rise Time = 7ns maximum input impedance = 1MΩ, 22pF.
2. Rise Time = 10ns maximum input impedance = 50Ω

## Diagram

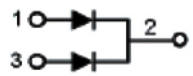
**TO-220A**




| Dim. | 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 |

| Dim. | Min. | Max. |
|---|---|---|
| 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 |
| O | 3.7 | 3.9 |

**Common Cathode**




## Part Number Table

| Description | Part Number |
|---|---|
| Ultra Fast Rectifiers, 400V | MUR1540 |
| Ultra Fast Rectifiers, 600V | MUR1560 |

Dimensions : Millimetres