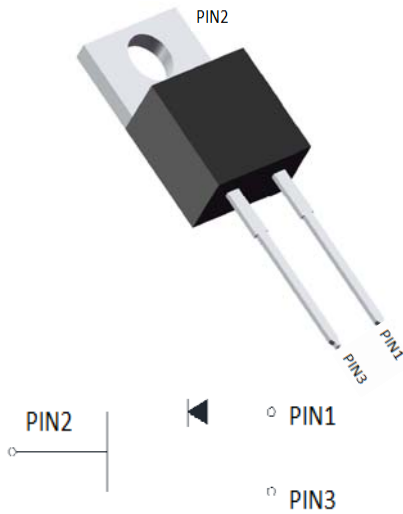


## Ultra-Fast Recovery Diodes 15A FRED



### Features

- Adopt FRED chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

### Typical Applications

Typical applications are in switching power supplies, converters, freewheeling diodes, and reverse battery protection.

### Mechanical Data

- **Package:** TO-220AC  
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** As marked

### ■Maximum Ratings (T<sub>j</sub>=25°C Unless otherwise specified)

| PARAMETER  | SYMBOL           | UNIT             | MUR1560L   |
|--|------------------|------------------|------------|
| Device marking code  |                  |                  | MUR1560L   |
| Repetitive Peak Reverse Voltage  | VRRM             | V                | 600        |
| Average Rectified Output Current @60Hz sine wave, R-load, T <sub>c</sub> (FIG.1)         | I <sub>O</sub>   | A                | 15         |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25°C | I <sub>FSM</sub> | A                | 150        |
| Current Squared Time @1ms≤t≤8.3ms T <sub>j</sub> =25°C,                                  | I <sup>2</sup> t | A <sup>2</sup> s | 93         |
| Storage Temperature  | T <sub>stg</sub> | °C               | -55 ~ +175 |
| Junction Temperature   | T <sub>j</sub>   | °C               | -55 ~ +175 |
| Typical Junction capacitance @4V,1MHz  | C <sub>j</sub>   | pF               | 92         |



# MUR1560L

## ■Electrical Characteristics

| PARAMETER   | SYMBOL     | UNIT | TEST CONDITIONS                     | Min                                  | Typ   | Max    |   |
|---|------------|------|-------------------------------------|--------------------------------------|-------|--------|---|
| Instantaneous forward voltage drop per diode              | $V_{FM}$   | V    | IFM=15.0A @Tj=25°C                  | -                                    | 1.9   | 2.8    |   |
|   |            |      | IFM=15.0A @Tj=150°C                 | -                                    | 1.5   | -      |   |
| DC reverse current at rated DC blocking voltage per diode | $I_{RRM1}$ | uA   | VRM=VRRM<br>Tj=25°C                 | -                                    | -     | 10     |   |
|   | $I_{RRM2}$ |      | VRM=VRRM<br>Tj=150°C                | -                                    | 30    | 200    |   |
| Reverse Recovery Time                                     | $T_{rr}$   | ns   | IF=0.5A IRM=1A<br>IRR=0.25A Tj=25°C | -                                    | 20    | 25     |   |
|   |            |      | Tj=25°C                             | -                                    | 37.45 | -      |   |
|   |            |      | Tj=125°C                            | -                                    | 69.15 | -      |   |
| Peak recovery current                                     | $I_{RRM}$  | A    | Tj=25°C                             | IF=15A<br>di/dt=-200A/us<br>VRM=200V | -     | 2.45   | - |
|   |            |      | Tj=125°C                            |                                      | -     | 5.75   | - |
| Reverse recovery charge                                   | $Q_{rr}$   | nC   | Tj=25°C                             |                                      | -     | 74.62  | - |
|   |            |      | Tj=125°C                            |                                      | -     | 200.70 | - |

## ■Thermal Characteristics (Tj=25°C Unless otherwise specified)

| PARAMETER          |                           | SYMBOL           | UNIT | MUR1560L |
|--------------------|---------------------------|------------------|------|----------|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | °CW  | 2.0      |
| Thermal Resistance | Between junction and Air  | $R_{\theta J-A}$ | °CW  | 50       |

## ■Ordering Information (Example)

| PREFERED P/N | UNIT WEIGHT(g)  | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|--------------|-----------------|-----------------------|-------------------------|----------------------------|---------------|
| MUR1560L     | Approximate 1.8 | 50                    | 1000                    | 5000                       | Tube          |



# MUR1560L

## ■ Characteristics (Typical)

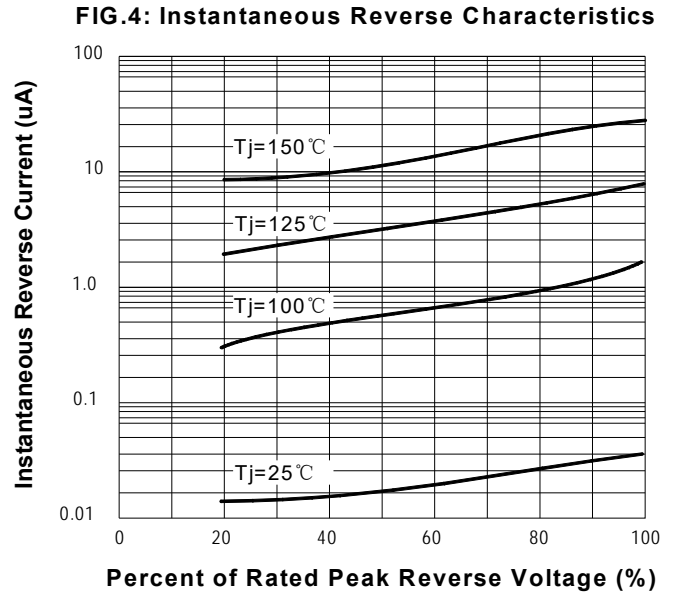
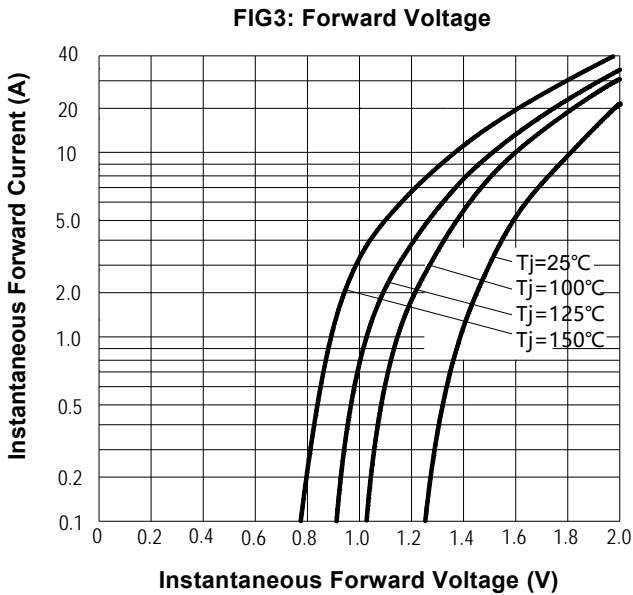
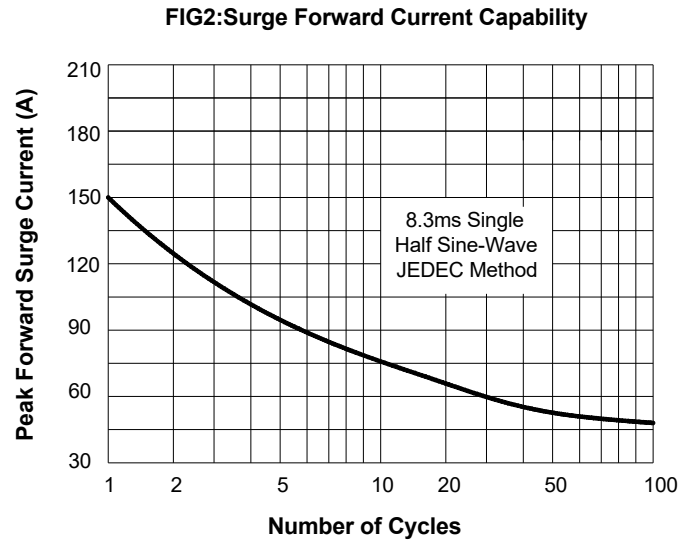
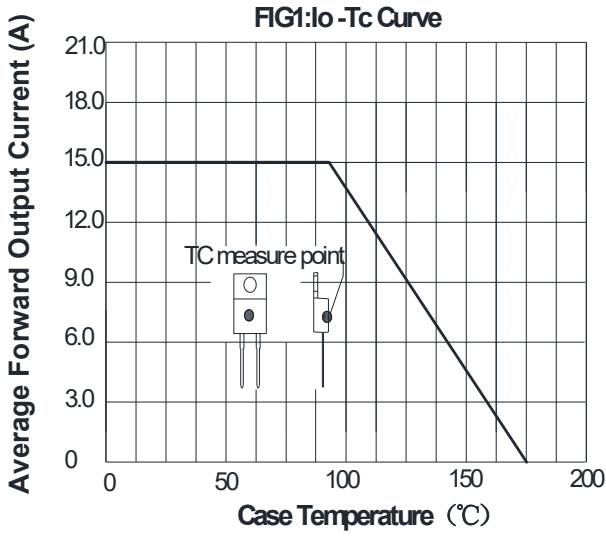
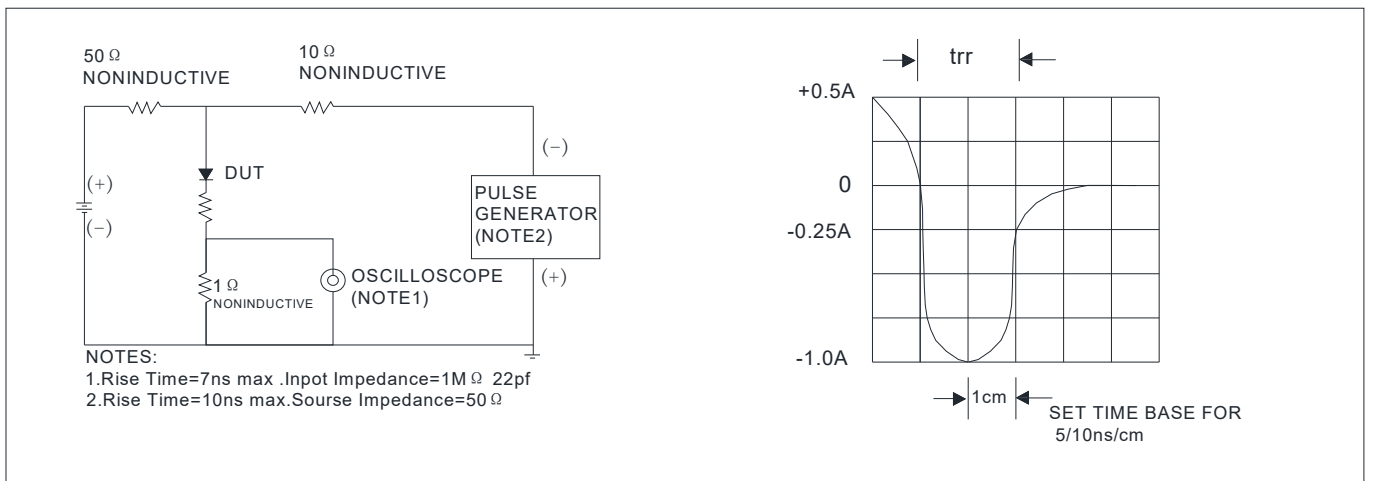


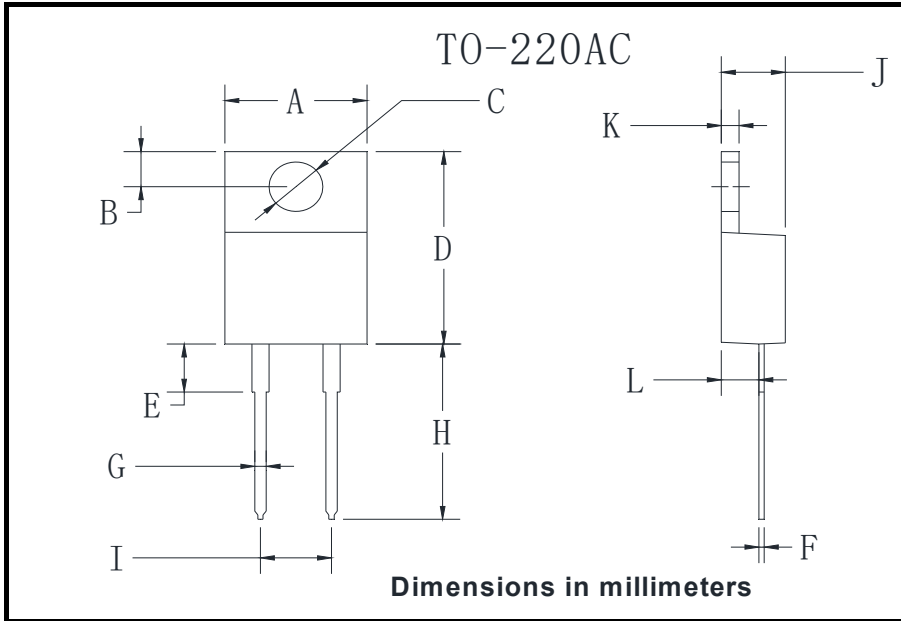
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





# MUR1560L

## ■Outline Dimensions



| TO-220AC |       |       |
|----------|-------|-------|
| Dim      | Min   | Max   |
| A        | 9.95  | 10.35 |
| B        | 2.55  | 2.95  |
| C        | 3.75  | 4.05  |
| D        | 14.95 | 15.25 |
| E        | 3.75  | 4.25  |
| F        | 0.26  | 0.5   |
| G        | 0.68  | 0.94  |
| H        | 13.3  | 13.9  |
| I        | 4.86  | 5.26  |
| J        | 4.38  | 4.78  |
| K        | 1.14  | 1.4   |
| L        | 2.37  | 2.79  |



## MUR1560L

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