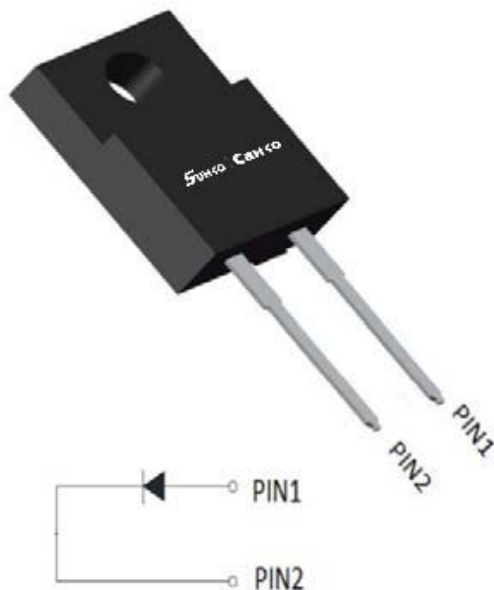


## Ultra-Fast Recovery Diodes 10A FRED



### 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:** ITO-220AC  
Molding compound meets UL 94 V-0 flammability rating, -
- **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             | MUR1060FL  |
|---------------------------------------------------------------------------------------------|------------------|------------------|------------|
| Device marking code                                                                         |                  |                  | MUR1060FL  |
| Repetitive Peak Reverse Voltage                                                             | VRRM             | V                | 600        |
| Average Rectified Output Current<br>@60Hz sine wave, R-load, T <sub>c</sub> (FIG.1)         | I <sub>O</sub>   | A                | 10         |
| Surge(Non-repetitive)Forward Current<br>@60Hz half sine-wave, 1 cycle, T <sub>j</sub> =25°C | I <sub>FSM</sub> | A                | 50         |
| Current Squared Time @1ms≤t≤8.3ms<br>T <sub>j</sub> =25°C,                                  | I <sup>2</sup> t | A <sup>2</sup> s | 12.5       |
| 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               | 42         |
| Mounting torque<br>@recommend torque: 5kg·cm                                                | Tor              | kg·cm            | 8          |

# MUR1060FL

## ■Electrical Characteristics

| PARAMETER                                                 | SYMBOL     | UNIT | TEST CONDITIONS                      | Min | Typ    | Max |
|-----------------------------------------------------------|------------|------|--------------------------------------|-----|--------|-----|
| Instantaneous forward voltage drop per diode              | $V_{FM}$   | V    | IFM=10.0A @Tj=25°C                   | -   | 2.25   | 3.2 |
|                                                           |            |      | IFM=10.0A @Tj=150°C                  |     |        | 2.2 |
| 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                 | -   | 25     | 50  |
| Reverse Recovery Time                                     | Trr        | ns   | IF=0.5A IRRM=1A<br>IRR=0.25A Tj=25°C | -   | 17     | 25  |
|                                                           |            |      | Tj=25°C                              |     | 60.56  |     |
|                                                           |            |      | Tj=125°C                             |     | 111.70 |     |
| Peak recovery current                                     | $I_{RRM}$  | A    | Tj=25°C                              | -   | 2.45   | -   |
|                                                           |            |      | Tj=125°C                             | -   | 4.35   | -   |
| Reverse recovery charge                                   | Qrr        | nC   | Tj=25°C                              | -   | 78.58  | -   |
|                                                           |            |      | Tj=125°C                             | -   | 245.59 | -   |

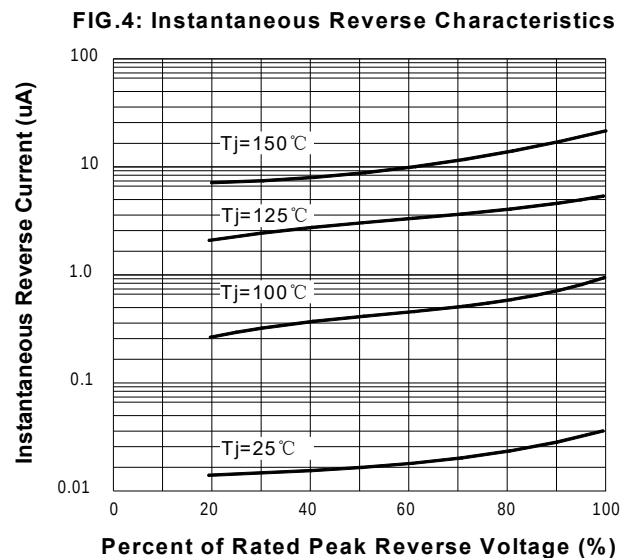
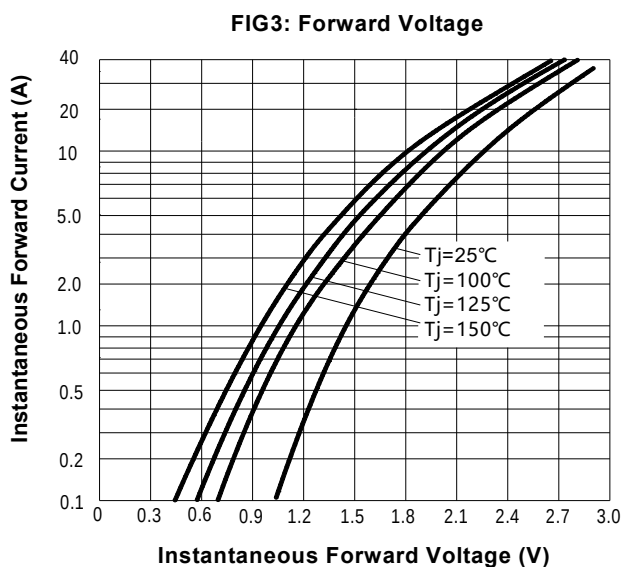
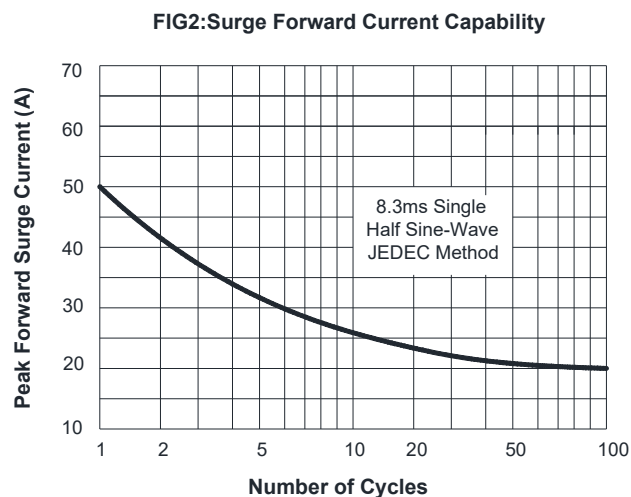
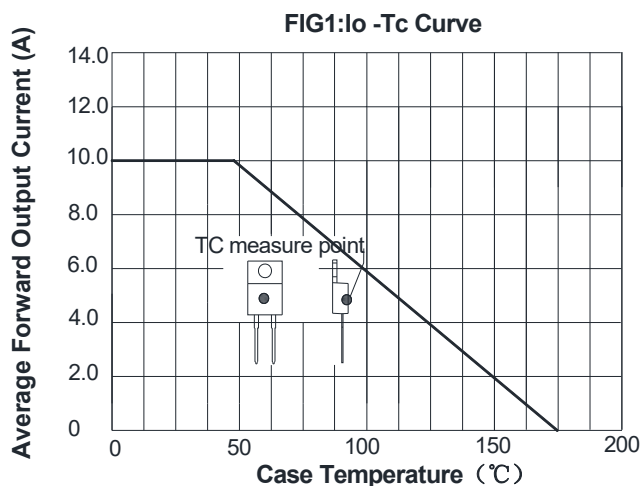
## ■Thermal Characteristics (Tj=25°C Unless otherwise specified)

| PARAMETER          |                           | SYMBOL | UNIT | MUR1060FL |
|--------------------|---------------------------|--------|------|-----------|
| Thermal Resistance | Between junction and case | RθJ-C  | °CW  | 4.0       |
| Thermal Resistance | Between junction and Air  | RθJ-A  | °CW  | 50        |

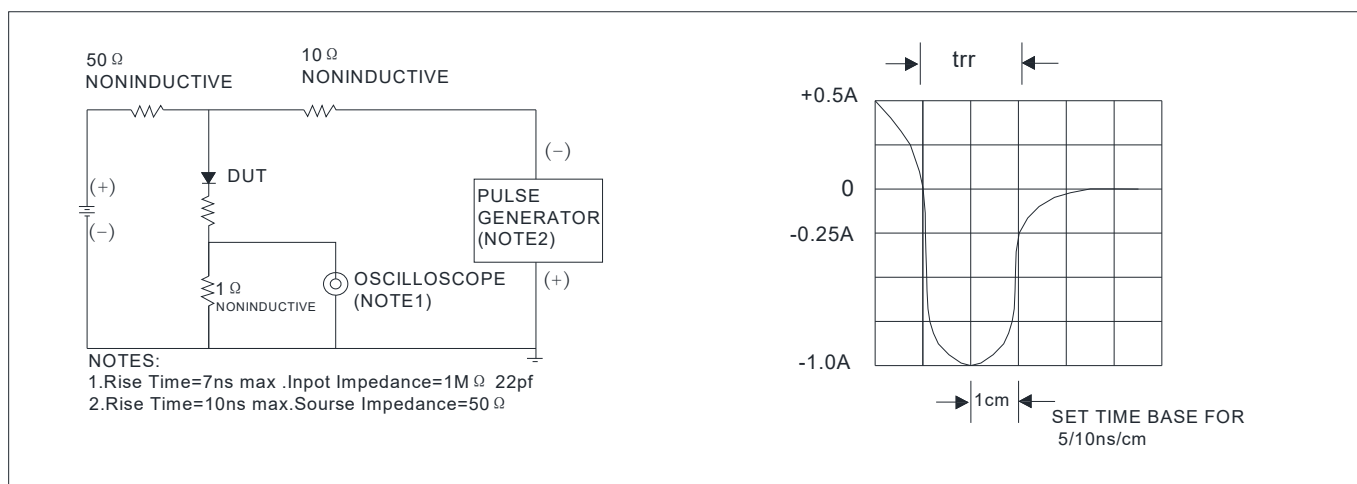
## ■Ordering Information (Example)

| PREFERRED P/N | UNIT WEIGHT(g)  | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|-----------------|----------------------|-------------------------|----------------------------|---------------|
| MUR1060FL     | Approximate 1.6 | 50                   | 1000                    | 5000                       | Tube          |

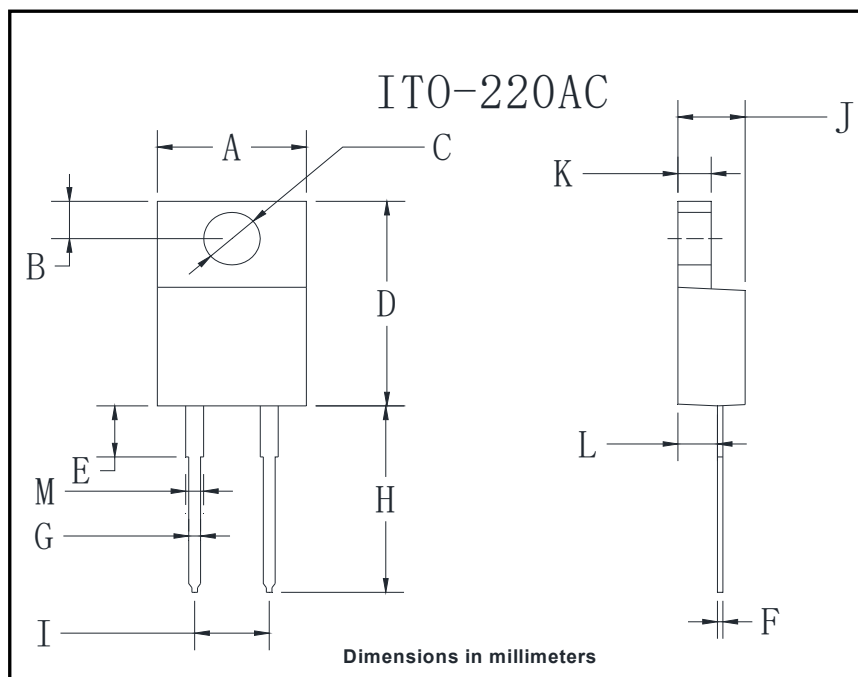
## ■ Characteristics (Typical)



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



■Outline Dimensions



| ITO-220AC |       |       |
|-----------|-------|-------|
| Dim       | Min   | Max   |
| A         | 9.8   | 10.2  |
| B         | 2.25  | 2.75  |
| C         | 2.95  | 3.45  |
| D         | 14.75 | 15.25 |
| E         | 3.5   | 4.1   |
| F         | 0.45  | 0.75  |
| G         | 0.45  | 0.75  |
| H         | 13.35 | 14.15 |
| I         | 4.97  | 5.23  |
| J         | 4.3   | 4.8   |
| K         | 2.5   | 2.74  |
| L         | 2.58  | 2.82  |
| M         | 1.03  | 1.43  |

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