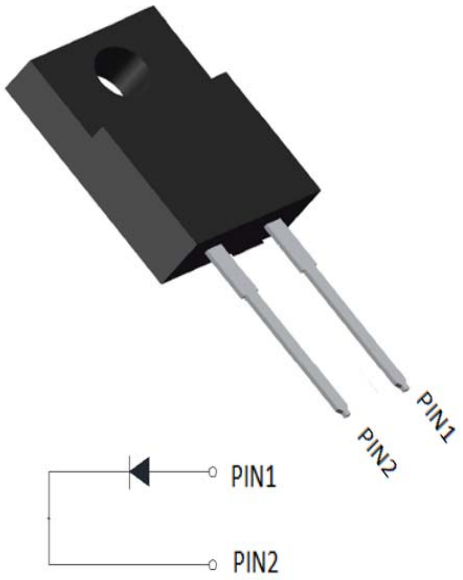
# Ultra-Fast Recovery Diodes 12A FRED




## 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, RoHS-compliant
- **Terminals**: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity**: As marked

## ■Maximum Ratings ($T_j$=25℃ Unless otherwise specified）

| PARAMETER | SYMBOL | UNIT | MUR1260FL |
|---|---|---|---|
| Device marking code | | | MUR1260FL |
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | V | 600 |
| Average Rectified Output Current @60Hz sine wave, R-load, $T_C$(FIG.1) | $I_O$ | A | 12 |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, $T_j$=25℃ | $I_{FSM}$ | A | 120 |
| Current Squared Time @1ms≤t≤8.3ms Tj=25℃， | $I^2t$ | $A^2s$ | 93 |
| Storage Temperature | $T_{stg}$ | ℃ | -55 ~ +175 |
| Junction Temperature | $T_j$ | ℃ | -55 ~ +175 |
| Typical Junction capacitance @4V,1MHz | Cj | pF | 92 |
| Mounting torque @recommend torque：5kg·cm | Tor | kg·cm | 8 |

## ■Electrical Characteristics

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | | Min | Typ | Max |
|---|---|---|---|---|---|---|---|
| Instantaneous forward voltage drop per diode | $V_{FM}$ | V | IFM=12.0A @Tj=25℃ | | - | 2.4 | 3.0 |
| | | | IFM=12.0A @Tj=150℃ | | - | 2.0 | 2.4 |
| DC reverse current at rated DC blocking voltage per diode | $I_{RRM1}$ | uA | VRM=VRRM Tj=25℃ | | - | - | 10 |
| | $I_{RRM2}$ | | VRM=VRRM Tj=150℃ | | - | 30 | 200 |
| Reverse Recovery Time | $T_{rr}$ | ns | IF=0.5A IRM=1A IRR=0.25A Tj=25℃ | | - | 20 | 25 |
| | | | Tj=25℃ | IF=12A di/dt=-200A/us VRM=200V | | 34.5 | |
| | | | Tj=125℃ | | | 66.5 | |
| Peak recovery current | $I_{RRM}$ | A | Tj=25℃ | | - | 2.45 | - |
| | | | Tj=125℃ | | - | 5.55 | - |
| Reverse recovery charge | $Q_{rr}$ | nC | Tj=25℃ | | - | 42.5 | - |
| | | | Tj=125℃ | | - | 186.5 | - |

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

| PARAMETER | | SYMBOL | UNIT | MUR1260FL |
|---|---|---|---|---|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | ℃/W | 4.0 |
| Thermal Resistance | Between junction and Air | $R_{\theta J-A}$ | ℃/W | 50 |

## ■Ordering Information (Example)

| PREFERED P/N | UNIT WEIGHT(g) | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---|---|---|---|---|---|
| MUR1260FL | Approximate 1.6 | 50 | 1000 | 5000 | Tube |

## ■Characteristics (Typical)

FIG1:Io -Tc Curve

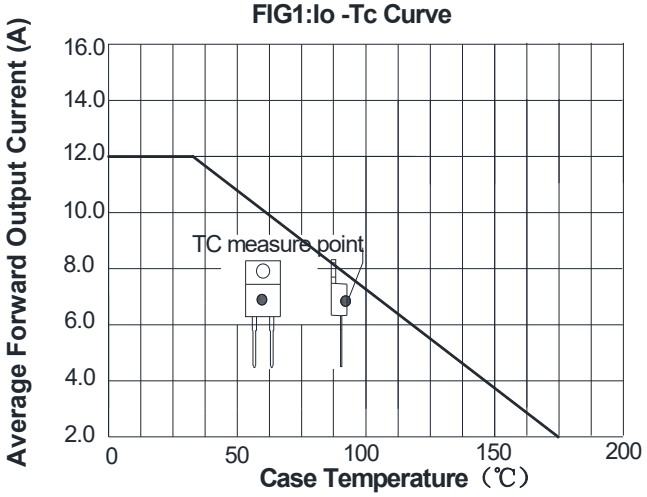



FIG2:Surge Forward Current Capability

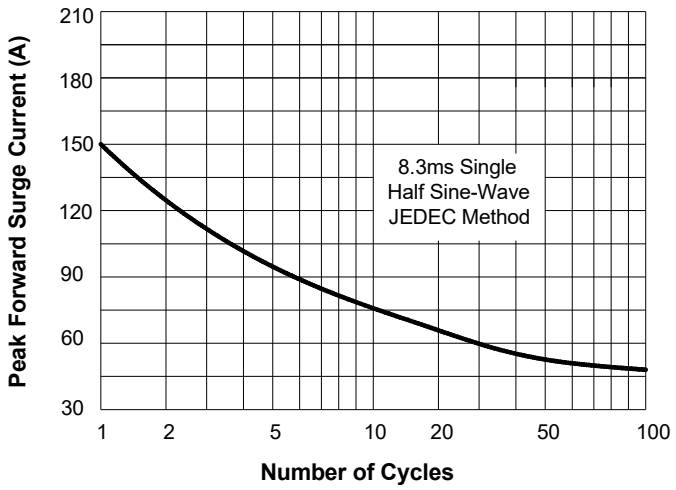



FIG3: Forward Voltage

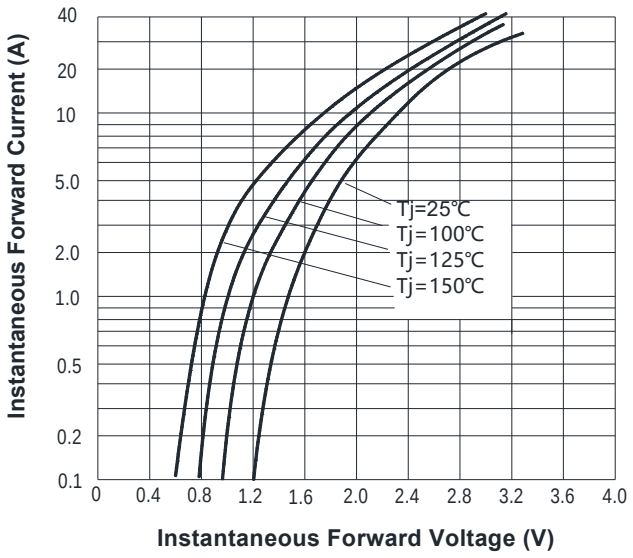



FIG.4: Instantaneous Reverse Characteristics

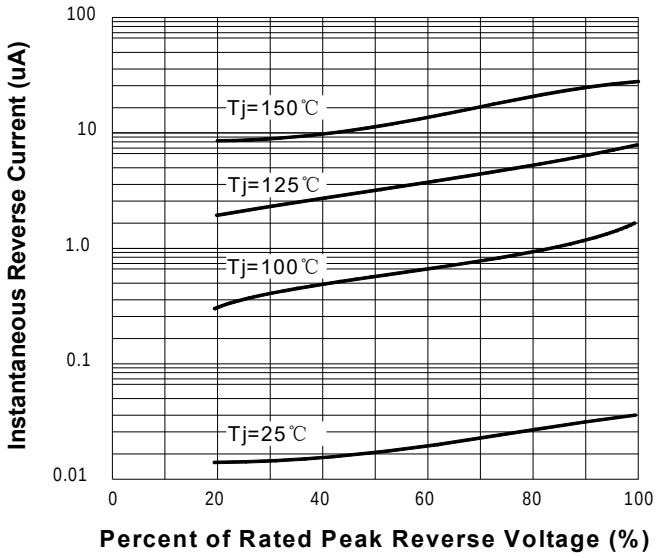
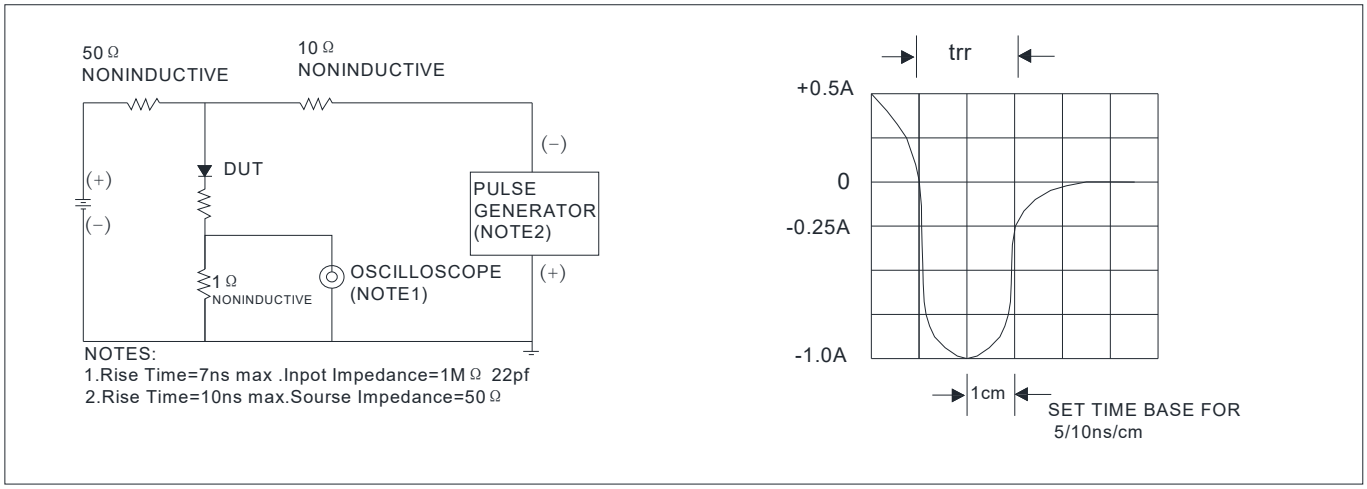
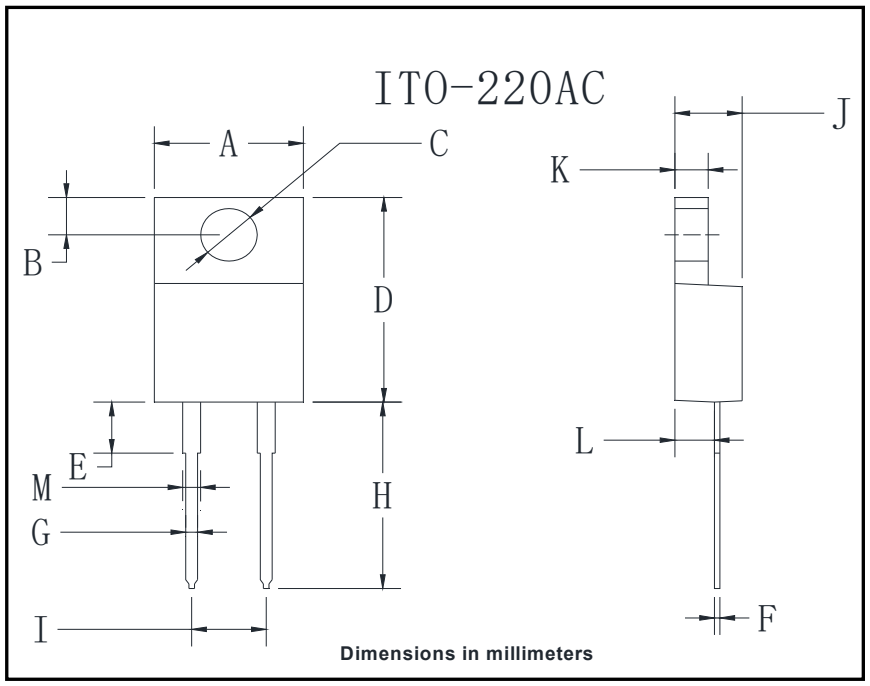



FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



## ■Outline Dimensions




| ITO-220AC | | |
|---|---|---|
| Dim | Min | Max |
| A | 9.7 | 10.7 |
| B | 2.15 | 3.25 |
| C | 2.6 | 3.8 |
| D | 14.4 | 15.9 |
| E | 3.1 | 4.5 |
| F | 0.4 | 0.8 |
| G | 0.4 | 0.9 |
| H | 12.7 | 14.2 |
| I | 3.6 | 5.9 |
| J | 3.9 | 5.1 |
| K | 2.1 | 3.56 |
| L | 2.1 | 3.2 |
| M | 1.0 | 1.8 |

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