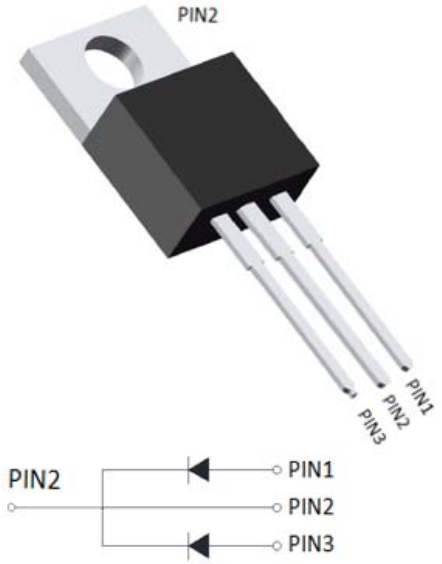
# Ultra-Fast Recovery Diodes 10A*2 FRED




## 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-220AB
  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 (Tj=25℃ Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MUR2020CT |
|---|---|---|---|
| Device marking code | | | MUR2020CT |
| Repetitive Peak Reverse Voltage | $V_{RRM}$ | V | 200 |
| Average Rectified Output Current @60Hz sine wave, R-load, $T_C$(FIG.1) | $I_O$ | A | 20 |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Tj=25℃ | $I_{FSM}$ | A | 120 |
| Current Squared Time @1ms≤t≤8.3ms Tj=25℃, | $I^2t$ | $A^2s$ | 60 |
| Storage Temperature | Tstg | ℃ | -55 ~ +175 |
| Junction Temperature | Tj | ℃ | -55 ~ +175 |
| Typical Junction capacitance @4V,1MHz | Cj | pF | 150 |

## ■Electrical Characteristics

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | | Min | Typ | Max |
|---|---|---|---|---|---|---|---|
| Instantaneous forward voltage drop per diode | $V_{FM}$ | V | $I_{FM}$=10.0A @Tj=25℃ | | - | 0.90 | 1.0 |
| | | | $I_{FM}$=10.0A @Tj=150℃ | | | 0.78 | 0.9 |
| DC reverse current at rated DC blocking voltage per diode | $I_{RRM1}$ | uA | $V_{RM}$=$V_{RRM}$ Tj=25℃ | | - | - | 5 |
| | $I_{RRM2}$ | | $V_{RM}$=$V_{RRM}$ Tj=150℃ | | - | 30 | 100 |
| Reverse Recovery Time | Trr | ns | $I_F$=0.5A $I_{RM}$=1A $I_{RR}$=0.25A Tj=25℃ | | - | 25 | 35 |
| | | | Tj=25℃ | IF=10A di/dt=-200A/us $V_{RM}$=100V | - | 34.5 | - |
| | | | Tj=125℃ | | - | 50.0 | - |
| Peak recovery current | $I_{RRM}$ | A | Tj=25℃ | | | 5.35 | - |
| | | | Tj=125℃ | | - | 8.25 | - |
| Reverse recovery charge | Qrr | nC | Tj=25℃ | | - | 90.5 | - |
| | | | Tj=125℃ | | - | 200.0 | - |

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

| PARAMETER | | SYMBOL | UNIT | MUR2020CT |
|---|---|---|---|---|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | ℃/W | 2.0 |
| 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 |
|---|---|---|---|---|---|
| MUR2020CT | Approximate 1.88 | 50 | 1000 | 5000 | Tube |

## ■Characteristics (Typical)

FIG1:Io -Tc Curve

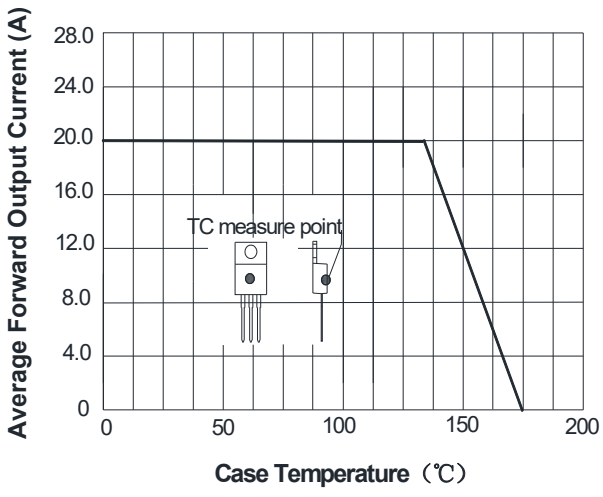



FIG2:Surge Forward Current Capability

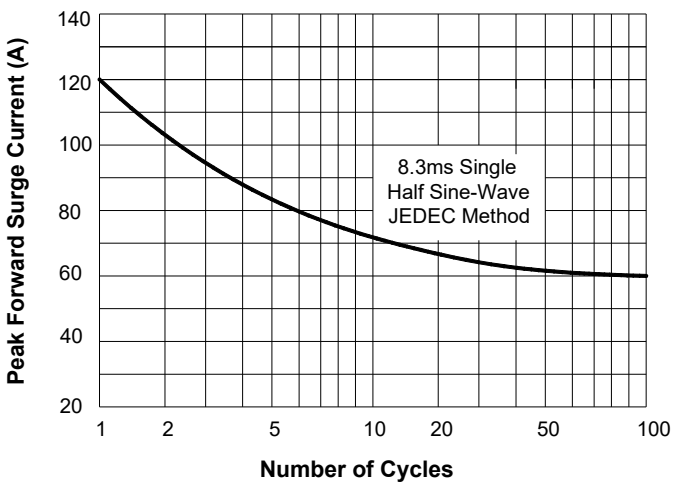


**FIG3: Forward Voltage**

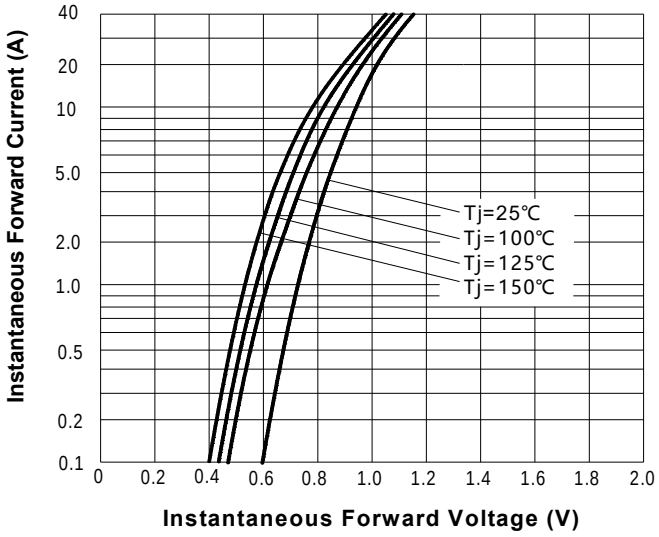



**FIG.4: Instantaneous Reverse Characteristics**

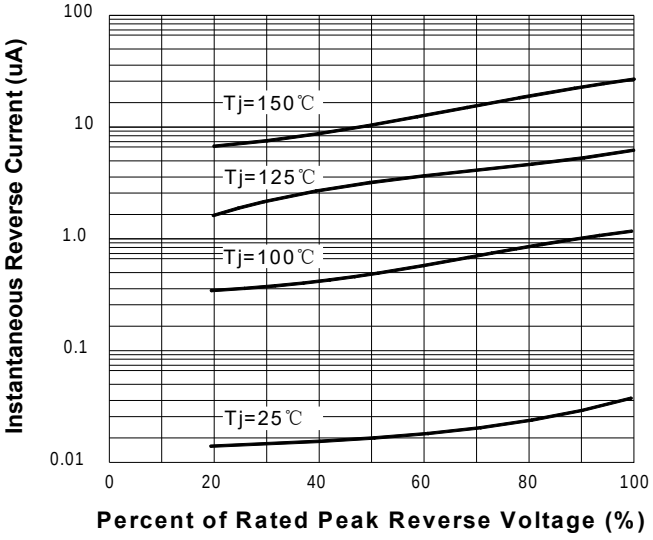
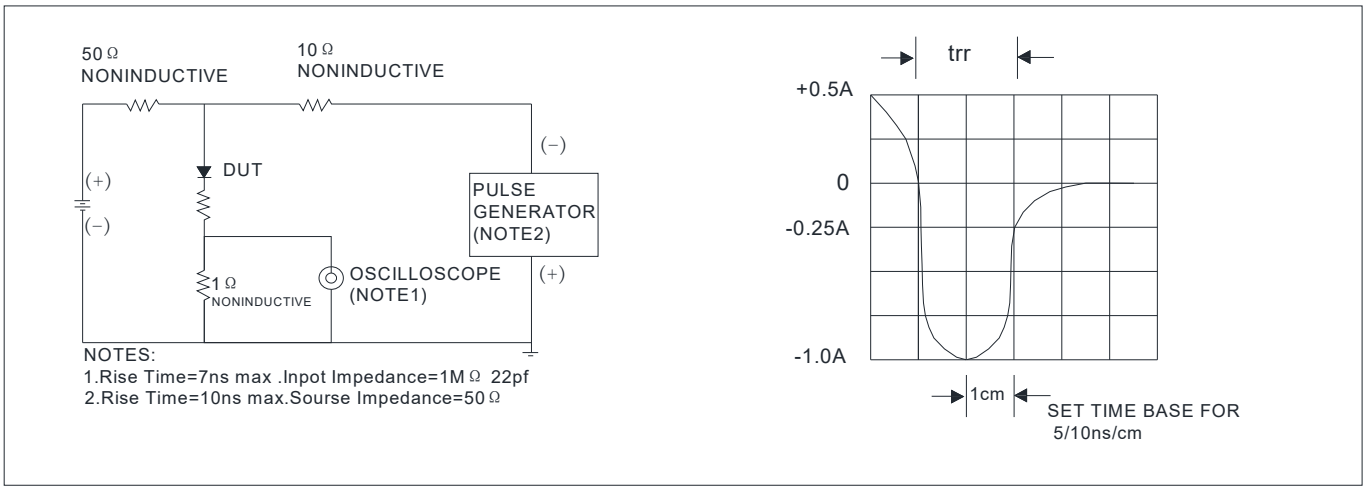
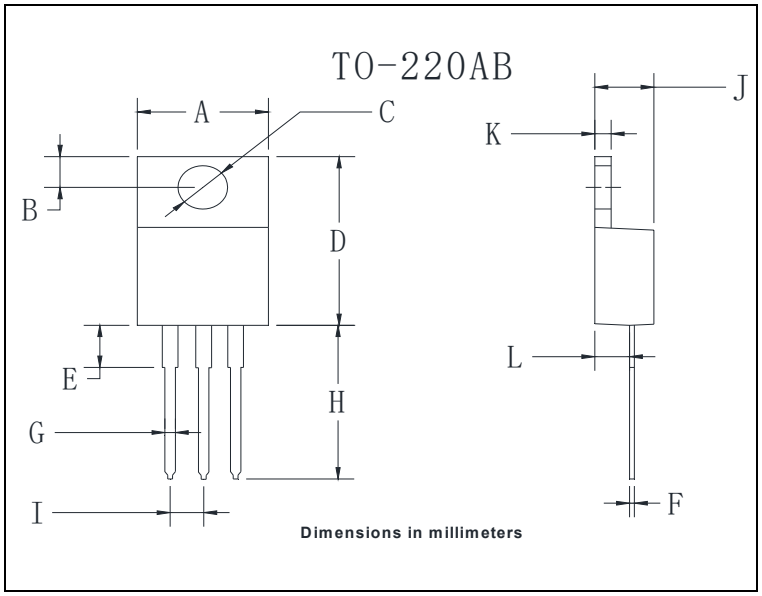



**FIG.5: Diagram of circuit and Testing wave form of reverse recovery time**



## ■Outline Dimensions




| TO-220AB | | |
|---|---|---|
| Dim | Min | Max |
| A | 9.95 | 10.35 |
| B | 2.55 | 2.95 |
| C | 3.8 | 4.0 |
| D | 14.95 | 15.25 |
| E | 3.75 | 4.25 |
| F | 0.26 | 0.5 |
| G | 0.68 | 0.94 |
| H | 13.4 | 13.9 |
| I | 2.35 | 2.65 |
| J | 4.38 | 4.78 |
| K | 1.14 | 1.4 |
| L | 2.37 | 2.79 |

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