

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, RoHS-compliant

Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102

Polarity: As marked

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| | | | |
|--|-----------|------------------|------------|
| Repetitive Peak Reverse Voltage | V_{RRM} | V | 200 |
| Average Rectified Output Current @60Hz sine wave, R-load, Tc(FIG.1) | I_O | A | 10 |
| 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 ² s | 60 |
| Storage Temperature | T_{stg} | | -55 ~ +175 |
| Junction Temperature | T_j | | -55 ~ +175 |
| Typical Junction capacitance @4V,1MHz | C_j | pF | 150 |
| Mounting torque @recommend torque 5kg cm | Tor | kg cm | 8 |



MUR1020F

Electrical Characteristics

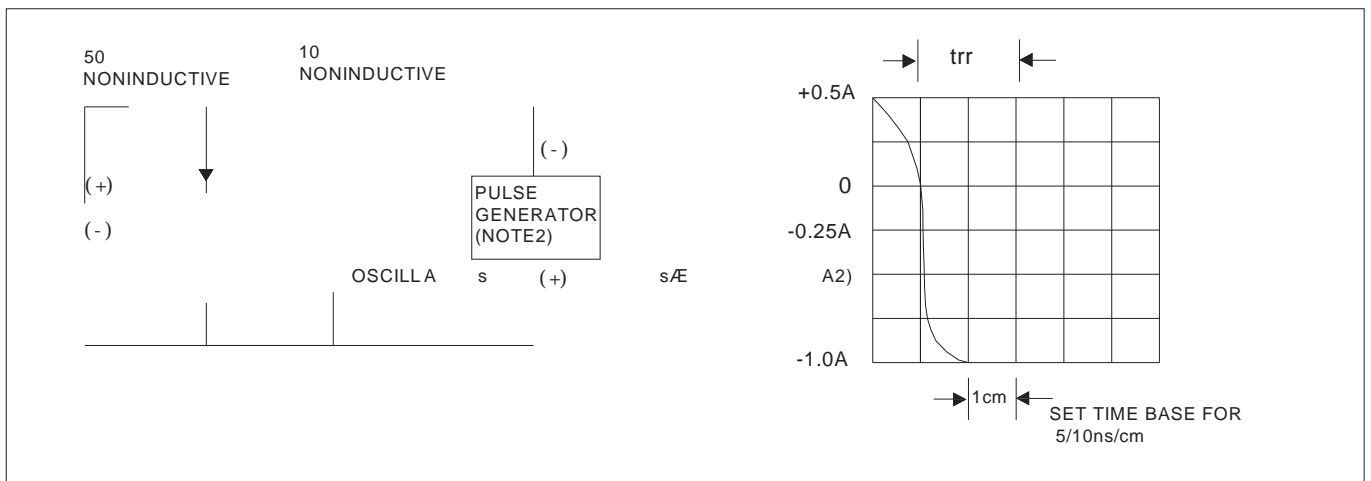
| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | Min | Typ | Max |
|---|------------|------|---|-----|------|-----|
| Instantaneous forward voltage drop per diode | V_{FM} | V | $I_{FM}=10.0A @ T_j=25$ | - | 0.90 | 1.0 |
| | | | $I_{FM}=10.0A @ T_j=150$ | | 0.78 | 0.9 |
| DC reverse current at rated DC blocking voltage per diode | I_{RRM1} | uA | $V_{RM}=V_{RRM}$ $T_j=25$ | - | - | 5 |
| | I_{RRM2} | | $V_{RM}=V_{RRM}$ $T_j=150$ | - | 30 | 50 |
| Reverse Recovery Time | T_{RR} | ns | $I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25$ | - | 25 | 35 |
| | | | $T_j=25$ | | 30 | - |
| | | | $T_j=125$ | - | 47 | - |

$I_F=10A$
 $di/dt=-200A/us$
 $V_{RM}=100V$



Characteristics (Typical)

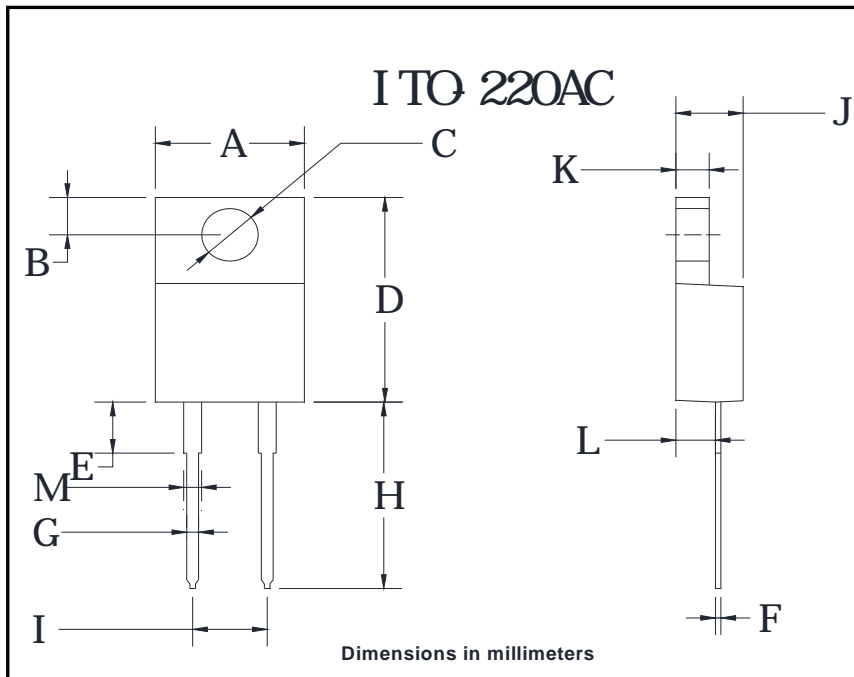
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





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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 |

