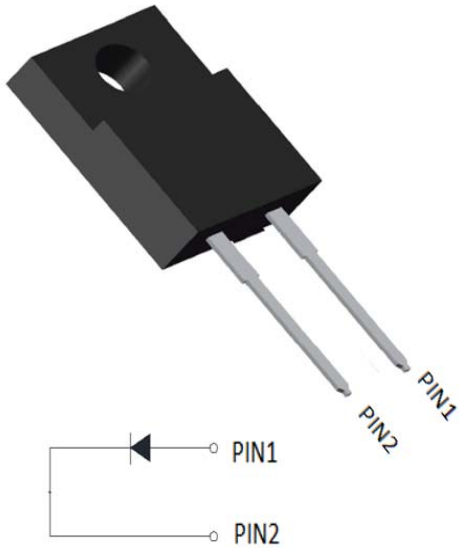


Ultra-Fast Recovery Diodes 5A FRED Pt



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 (Ta=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MUR540F |
|--|-----------|------------------|------------|
| Device marking code | | | MUR540F |
| Repetitive Peak Reverse Voltage | V_{RRM} | V | 400 |
| Average Rectified Output Current @60Hz sine wave, R-load, Tc(FIG.1) | I_O | A | 5 |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, Ta=25°C | I_{FSM} | A | 50 |
| Current Squared Time @1ms≤t≤8.3ms Tj=25°C, | I^2t | A ² s | 10 |
| Storage Temperature | T_{stg} | °C | -55 ~ +150 |
| Junction Temperature | T_j | °C | -55 ~ +150 |
| Junction capacitance @4V,1MHz | C_j | pF | 50 |



MUR540F

■Electrical Characteristics

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | Min | Typ | Max | |
|---|------------|------|--|---|------|-------|---|
| Instantaneous forward voltage drop per diode | V_{FM} | V | $I_{FM}=5.0A @T_j=25^{\circ}C$ | - | 1.15 | 1.25 | |
| | | | $I_{FM}=5.0A @T_j=150^{\circ}C$ | | 0.9 | 1 | |
| DC reverse current at rated DC blocking voltage per diode | I_{RRM1} | uA | $V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$ | - | - | 5 | |
| | I_{RRM2} | | $V_{RM}=V_{RRM}$ $T_j=150^{\circ}C$ | - | 25 | 50 | |
| Reverse Recovery Time | T_{RR} | ns | $I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$ | - | 25 | 35 | |
| Peak recovery current | I_{RRM} | A | $T_j=25^{\circ}C$ | $I_F=5A$ $di/dt=-200A/us$ $V_{RM}=200V$ | - | 3.49 | - |
| | | | $T_j=125^{\circ}C$ | | - | 5.71 | - |
| Reverse recovery charge | Q_{rr} | nC | $T_j=25^{\circ}C$ | | - | 55.22 | - |
| | | | $T_j=125^{\circ}C$ | | - | 130 | - |

■Thermal Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

| PARAMETER | | SYMBOL | UNIT | MUR540F |
|--------------------|---------------------------|------------------|---------------|---------|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | $^{\circ}C/W$ | 4.0 |
| | Between junction and Air | $R_{\theta J-A}$ | $^{\circ}C/W$ | 50 |

■Ordering Information (Example)

| PREFERED P/N | UNIT WEIGHT(g) | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|--------------|-----------------|-----------------------|-------------------------|----------------------------|---------------|
| MUR540F | Approximate 1.6 | 50 | 1000 | 5000 | Tube |

■Characteristics (Typical)

FIG1: $I_o - T_c$ Curve

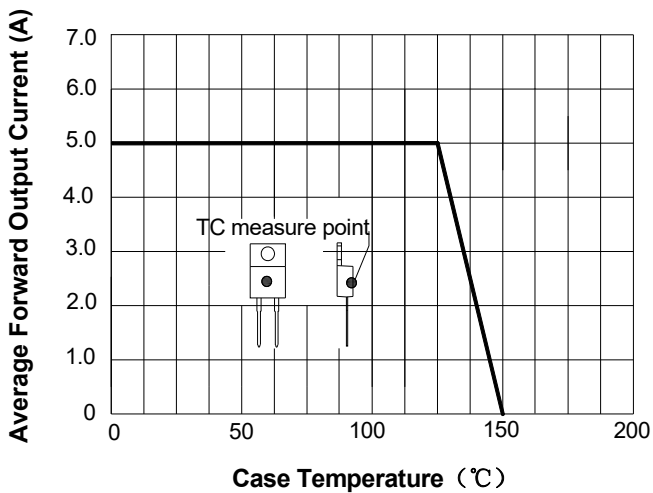


FIG2: Surge Forward Current Capability

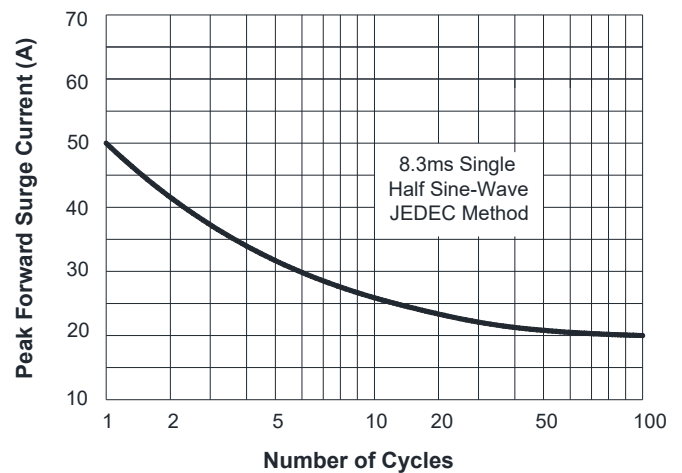


FIG3: Forward Voltage

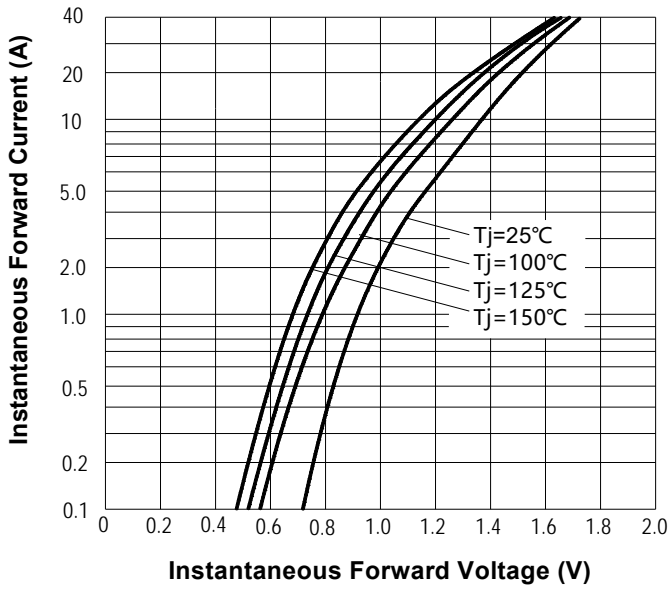


FIG.4: Instantaneous Reverse Characteristics

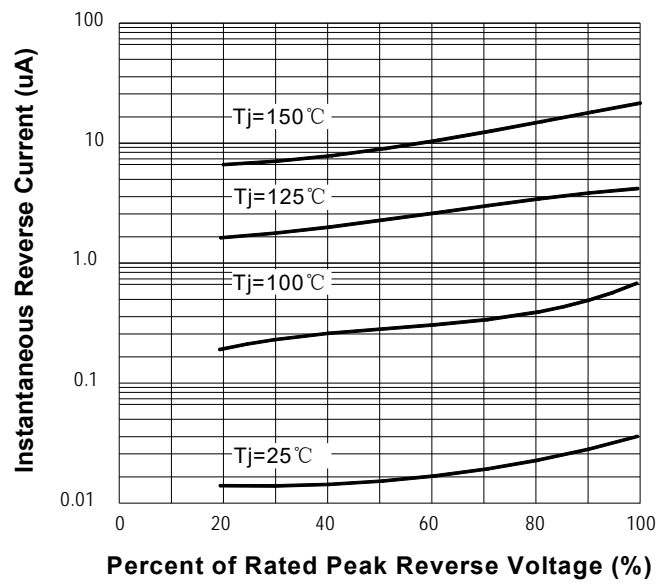
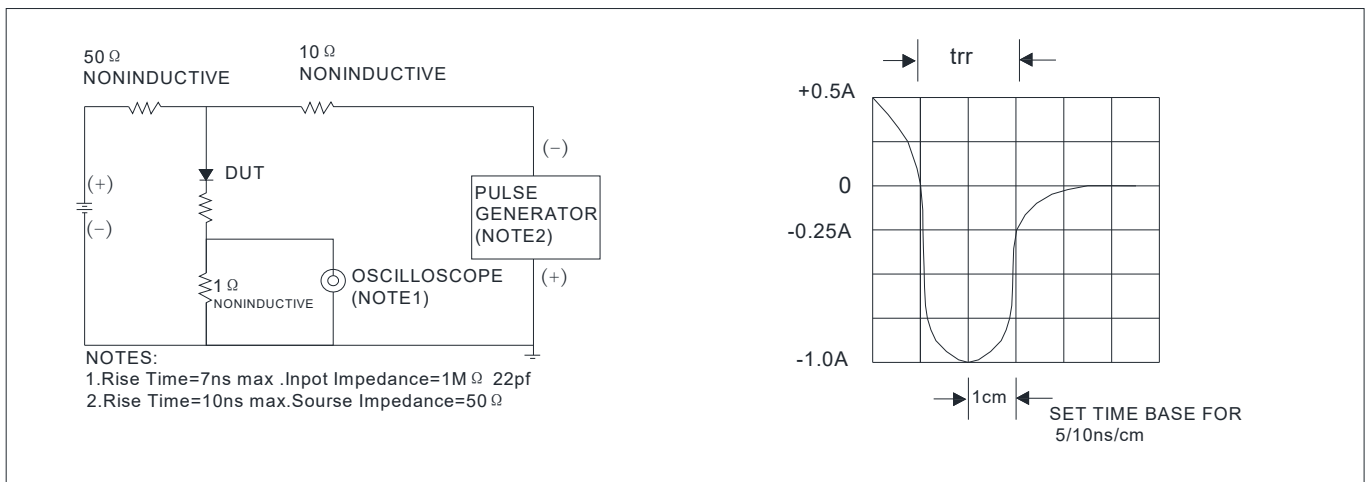


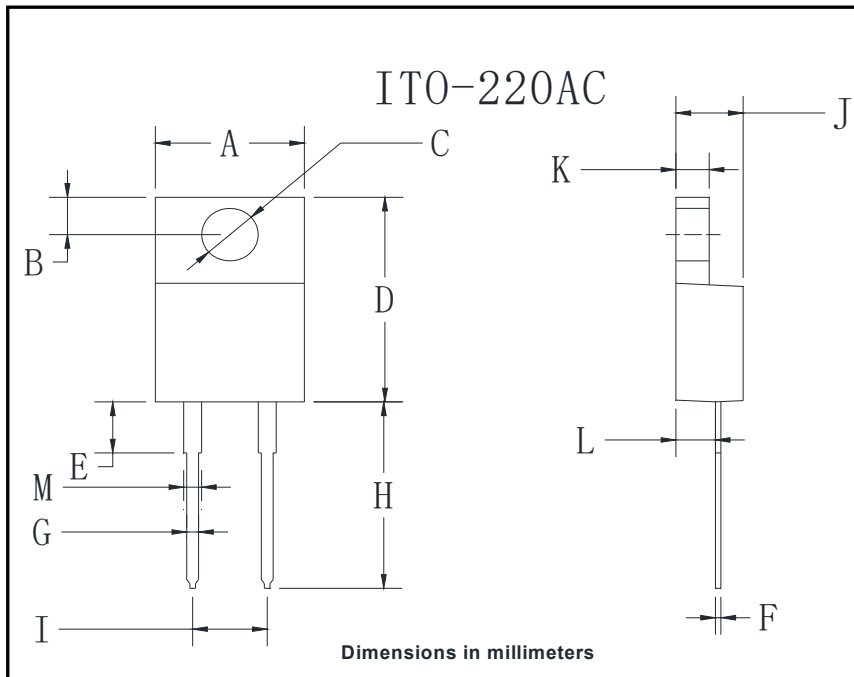
FIG.5: Diagram of circuit and Testing wave form of reverse recovery time





MUR540F

■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 |



MUR540F

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