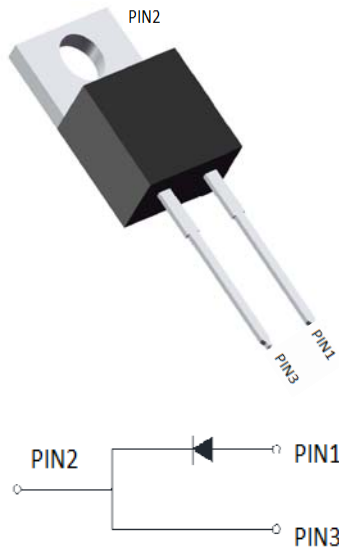


Ultra-Fast Recovery Diodes 15A FRED



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-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_a=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MURL1560 |
|--|------------------|------------------|------------|
| Device marking code | | | MURL1560 |
| Repetitive Peak Reverse Voltage | VRRM | V | 600 |
| Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1) | I _O | A | 15 |
| Surge(Non-repetitive)Forward Current @60Hz half sine-wave, 1 cycle, T _a =25°C | I _{FSM} | A | 150 |
| Current Squared Time @1ms≤t≤8.3ms T _j =25°C, | I ² t | A ² s | 93 |
| Storage Temperature | T _{stg} | °C | -55 ~ +175 |
| Junction Temperature | T _j | °C | -55 ~ +175 |
| Typical Junction capacitance @4V,1MHz | C _j | pF | 92 |



MURL1560

■Electrical Characteristics

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | Min | Typ | Max |
|---|------------|------|-------------------------------------|-----|--------|-----|
| Instantaneous forward voltage drop per diode | V_{FM} | V | IFM=15.0A @Tj=25°C | - | 1.35 | 1.5 |
| | | | IFM=15.0A @Tj=150°C | - | 1.18 | - |
| DC reverse current at rated DC blocking voltage per diode | I_{RRM1} | uA | VRM=VRRM Tj=25°C | - | - | 10 |
| | I_{RRM2} | | VRM=VRRM Tj=150°C | - | 30 | 200 |
| Reverse Recovery Time | T_{rr} | ns | IF=0.5A IRM=1A IRR=0.25A Tj=25°C | - | 40 | 75 |
| | | | Tj=25°C | - | 82.54 | - |
| | | | Tj=125°C | - | 127.02 | - |
| Peak recovery current | I_{RRM} | A | Tj=25°C | - | 6.50 | - |
| | | | Tj=125°C | - | 12.05 | - |
| Reverse recovery charge | Q_{rr} | nC | Tj=25°C | - | 265.77 | - |
| | | | Tj=125°C | - | 778.94 | - |

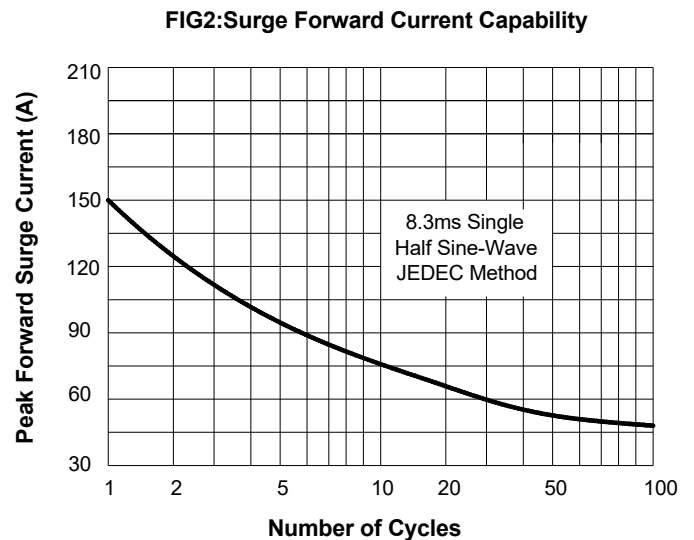
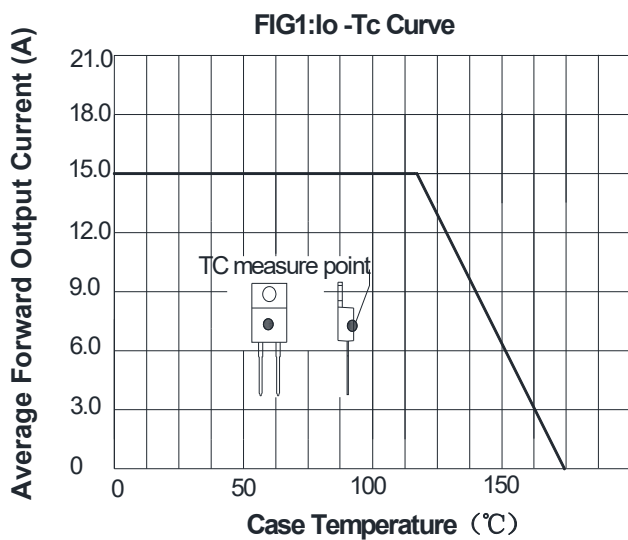
■Thermal Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER | | SYMBOL | UNIT | MURL1560 |
|--------------------|---------------------------|------------------|------|----------|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | °CW | 2.0 |
| Thermal Resistance | Between junction and Air | $R_{\theta J-A}$ | °CW | 50 |

■Ordering Information (Example)

| PREFERRED P/N | UNIT WEIGHT(g) | MINIIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|-----------------|-----------------------|-------------------------|----------------------------|---------------|
| MURL1560 | Approximate 1.8 | 50 | 1000 | 5000 | Tube |

■Characteristics (Typical)



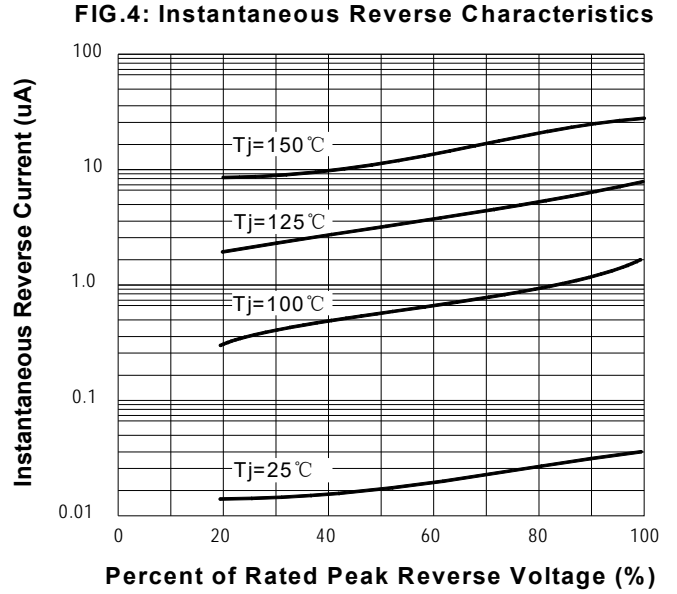
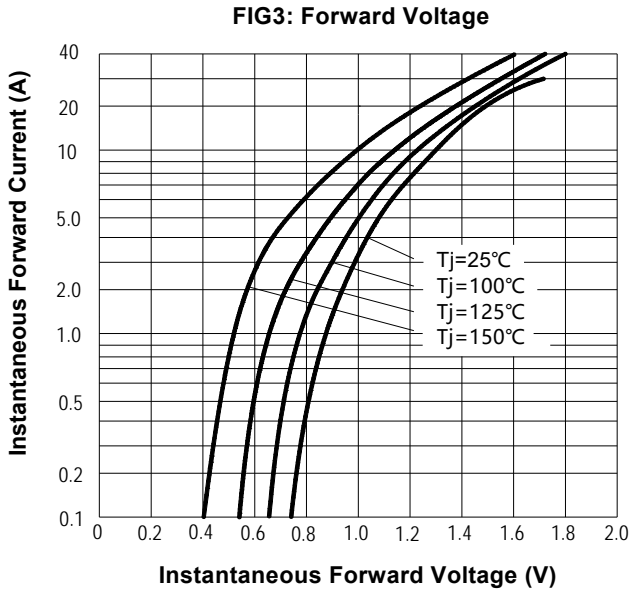
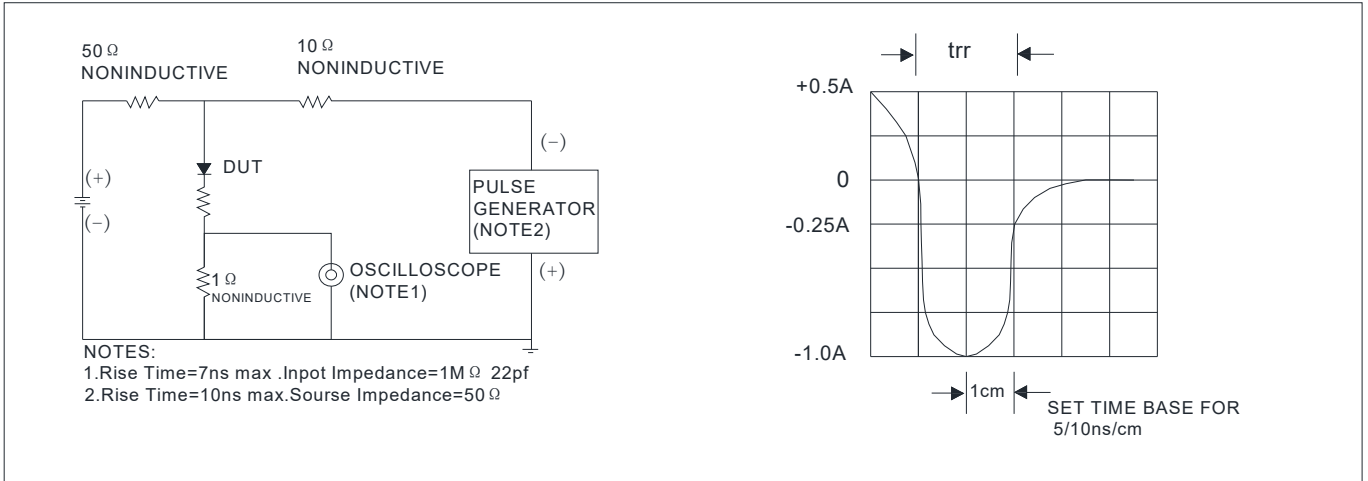
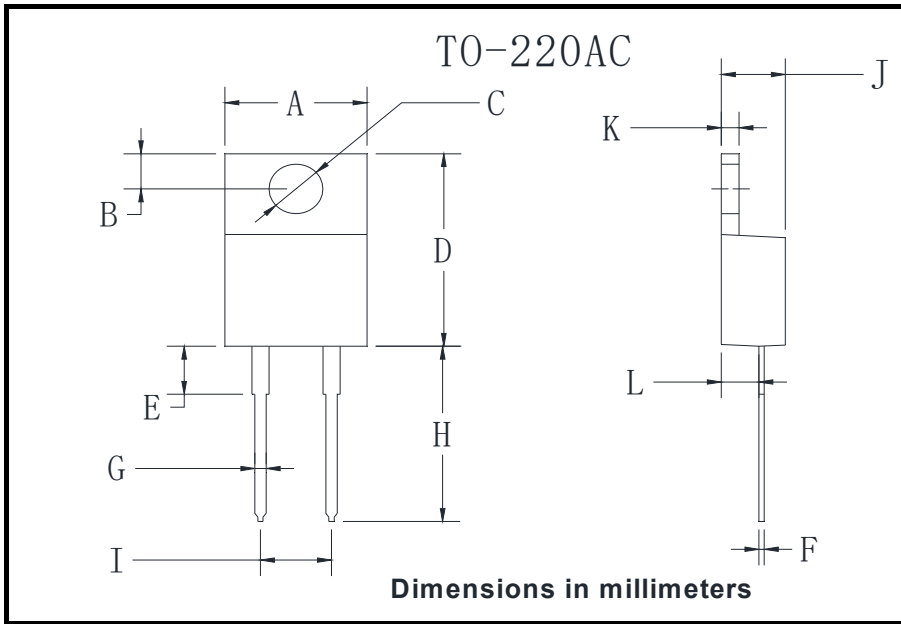


FIG.5: Diagram of circuit and Testing wave form of reverse recovery time



■Outline Dimensions



| TO-220AC | | |
|----------|-------|-------|
| Dim | Min | Max |
| A | 9.95 | 10.35 |
| B | 2.55 | 2.95 |
| C | 3.75 | 4.05 |
| D | 14.95 | 15.25 |
| E | 3.75 | 4.25 |
| F | 0.26 | 0.5 |
| G | 0.68 | 0.94 |
| H | 13.3 | 13.9 |
| I | 4.86 | 5.26 |
| J | 4.38 | 4.78 |
| K | 1.14 | 1.4 |
| L | 2.37 | 2.79 |



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