

Ultra-Fast Recovery Diodes 8A FRED

Features

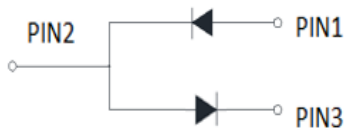
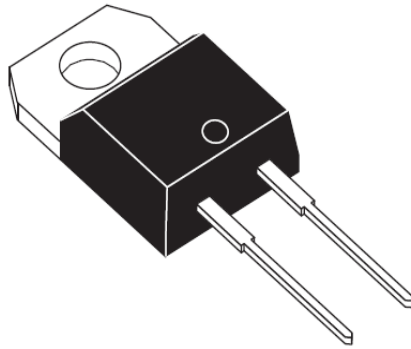
- Adopt FRED chip
- Low forward Voltage drop
- Fast reverse recovery time
- High frequency operation
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- Guard ring for enhanced ruggedness and long term reliability

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_j=25°C Unless otherwise specified)

| PARAMETER | SYMBOL | UNIT | MURIS860UC |
|--|------------------|------------------|------------|
| Device marking code | | | MURIS860UC |
| Repetitive Peak Reverse Voltage | V _{RRM} | V | 600 |
| Average Rectified Output Current @60Hz sine wave, R-load, T _c (FIG.1) | I _o | A | 8 |
| Surge(Non-repetitive) Forward Current @60Hz half sine-wave, 1 cycle, T _j =25°C | I _{FSM} | A | 100 |
| Current Squared Time @1ms≤t≤8.3ms T _j =25°C, | I ² t | A ² s | 41.5 |
| Storage Temperature | T _{stg} | °C | -55 ~ +150 |
| Junction Temperature | T _j | °C | -55 ~ +150 |
| Typical Junction capacitance @4V, 1MHz | C _j | pF | 35 |



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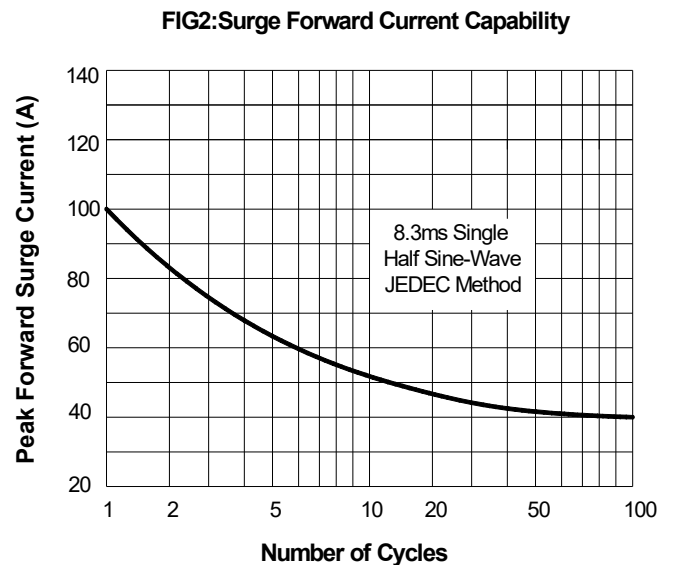
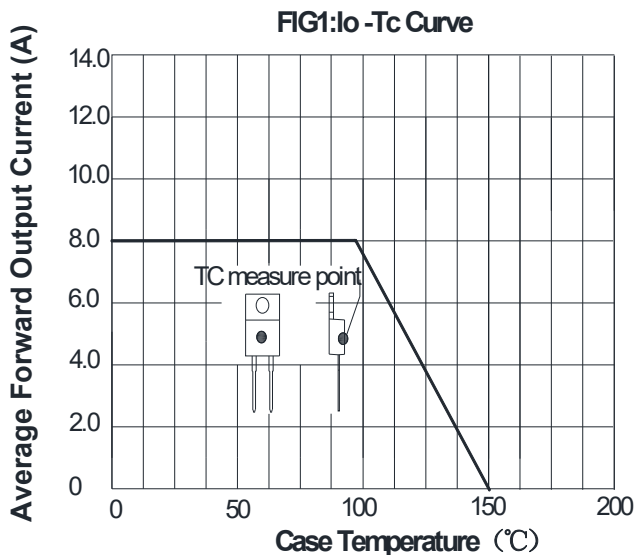
■Electrical Characteristics

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | Min | Typ | Max | |
|---|------------|---------|--|--|-------|-------|---|
| Instantaneous forward voltage drop per diode | V_{FM} | V | $I_{FM}=8.0A @T_j=25^{\circ}C$ | - | 2.57 | 3.60 | |
| | | | $I_{FM}=8.0A @T_j=125^{\circ}C$ | - | 2.05 | 3.00 | |
| DC reverse current at rated DC blocking voltage per diode | I_{RRM1} | μA | $V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$ | - | - | 10 | |
| | I_{RRM2} | | $V_{RM}=V_{RRM}$ $T_j=125^{\circ}C$ | - | - | 100 | |
| Reverse Recovery Time | T_{rr} | ns | $I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$ | - | 13 | 25 | |
| | | | $T_j=25^{\circ}C$ | | 31.29 | | |
| | | | $T_j=125^{\circ}C$ | | 45.06 | | |
| Peak recovery current | I_{RRM} | A | $T_j=25^{\circ}C$ | $I_F=8A$ $di/dt=-200A/\mu s$ $V_{RM}=200V$ | - | 1.65 | - |
| | | | $T_j=125^{\circ}C$ | | - | 4.18 | - |
| Reverse recovery charge | Q_{rr} | nC | $T_j=25^{\circ}C$ | | - | 25.83 | - |
| | | | $T_j=125^{\circ}C$ | | - | 94.11 | - |

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

| PARAMETER | | SYMBOL | UNIT | MURIS860UC |
|--------------------|---------------------------|------------------|---------------|------------|
| Thermal Resistance | Between junction and case | $R_{\theta j-c}$ | $^{\circ}C/W$ | 2.6 |

■Characteristics (Typical)





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FIG3: Forward Voltage

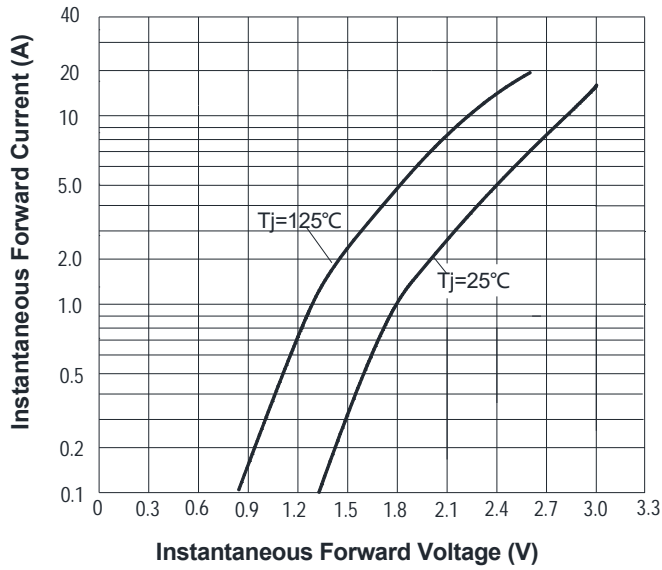
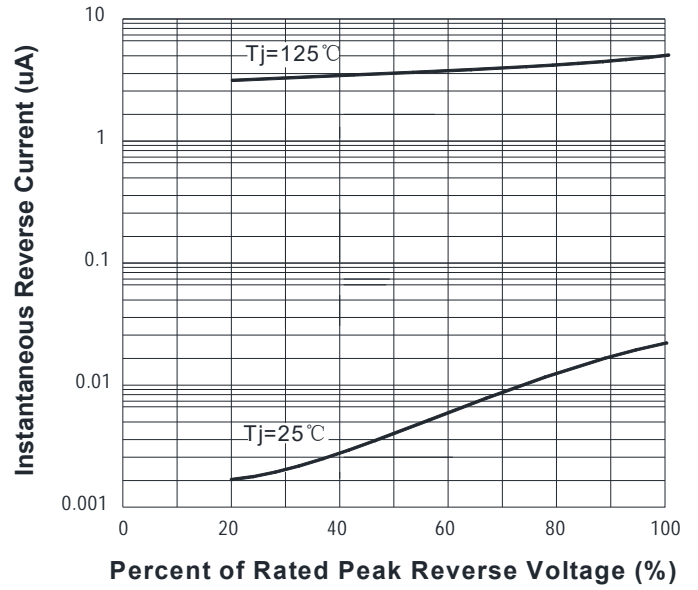
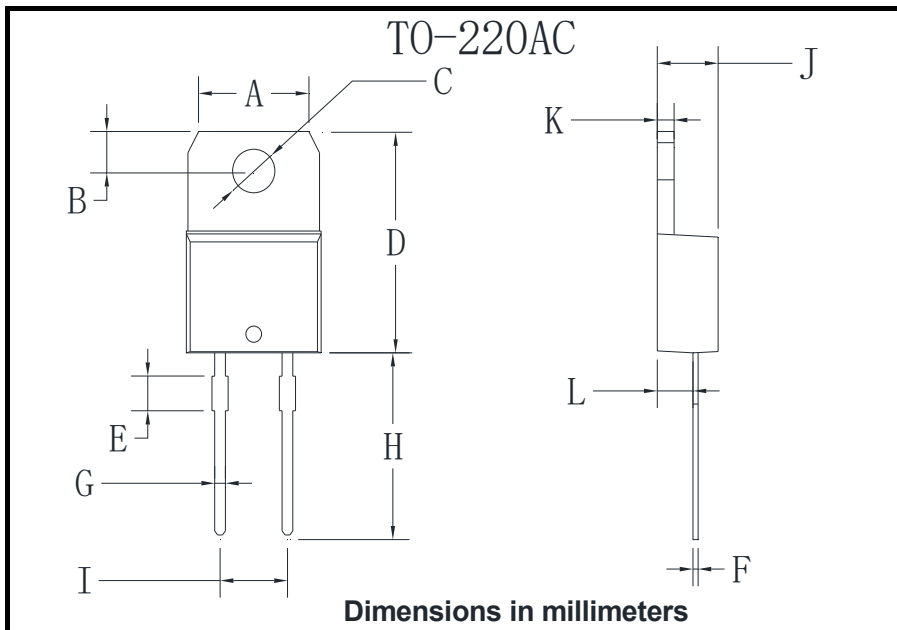


FIG.4: Instantaneous Reverse Characteristics



■ Outline Dimensions



| TO-220AC | | |
|----------|----------|-------|
| Dim | Min | Max |
| A | 7.80 | 8.20 |
| B | 2.73 | 2.87 |
| C | 3.75 | 3.80 |
| D | 15.37 | 15.63 |
| E | 2.30 | 2.38 |
| F | 0.45 | 0.60 |
| G | 0.77 | 0.85 |
| H | 13.28 | 13.42 |
| I | 5.08 BSC | |
| J | 4.42 | 4.52 |
| K | 1.26 | 1.28 |
| L | 2.49 | 2.69 |



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