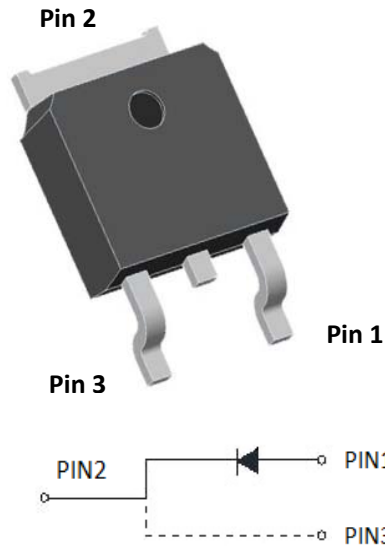


Ultra-Fast Recovery Diodes 8A FRED



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-252
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 | MUR8120DL |
|---|------------------|------------------|------------|
| Device marking code | | | MUR8120DL |
| Repetitive Peak Reverse Voltage | V _{RRM} | V | 1200 |
| 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 | 40 |
| Current Squared Time @1ms≤t≤8.3ms T _j =25°C, | I ² t | A ² s | 6.64 |
| Storage Temperature | T _{stg} | °C | -55 ~ +150 |
| Junction Temperature | T _j | °C | -55 ~ +150 |
| Junction capacitance @4V,1MHz | C _j | pF | 23 |



MUR8120DL

■Electrical Characteristics

| PARAMETER | SYMBOL | UNIT | TEST CONDITIONS | Min | Typ | Max | |
|---|------------|------|--|---|------|------|---|
| Instantaneous forward voltage drop per diode | V_{FM} | V | $I_{FM}=8.0A$ @ $T_j=25^{\circ}C$ | - | 2.41 | 3.20 | |
| | | | $I_{FM}=8.0A$ @ $T_j=125^{\circ}C$ | - | 2.0 | 2.50 | |
| DC reverse current at rated DC blocking voltage per diode | I_{RRM1} | uA | $V_{RM}=V_{RRM}$ $T_j=25^{\circ}C$ | - | - | 5.0 | |
| | I_{RRM2} | | $V_{RM}=V_{RRM}$ $T_j=125^{\circ}C$ | - | - | 200 | |
| Reverse Recovery Time | T_{rr} | ns | $I_F=0.5A$ $I_{RM}=1A$ $I_{RR}=0.25A$ $T_j=25^{\circ}C$ | - | 25 | 50 | |
| | | | $T_j=25^{\circ}C$ | - | 173 | - | |
| | | | $T_j=125^{\circ}C$ | - | 254 | - | |
| Peak recovery current | I_{RRM} | A | $T_j=25^{\circ}C$ | $I_F=8A$ $di/dt=-200A/us$ $V_{RM}=400V$ | - | 3.15 | - |
| | | | $T_j=125^{\circ}C$ | | - | 5.41 | - |
| Reverse recovery charge | Q_{rr} | nC | $T_j=25^{\circ}C$ | | - | 272 | - |
| | | | $T_j=125^{\circ}C$ | | - | 688 | - |

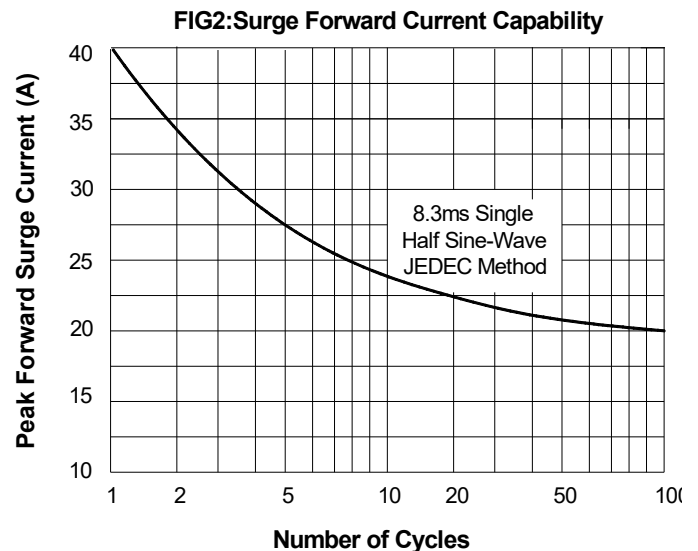
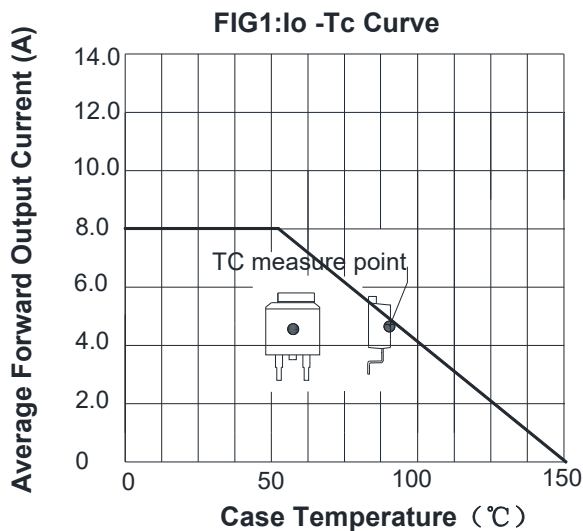
■Thermal Characteristics ($T_j=25^{\circ}C$ Unless otherwise specified)

| PARAMETER | | SYMBOL | UNIT | MUR8120DL |
|--------------------|---------------------------|------------------|---------------|-----------|
| Thermal Resistance | Between junction and case | $R_{\theta J-C}$ | $^{\circ}C/W$ | 5.0 |
| Thermal Resistance | Between junction and Air | $R_{\theta J-A}$ | $^{\circ}C/W$ | 50 |

■Ordering Information (Example)

| PREFERRED P/N | UNIT WEIGHT(g) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|------------------|----------------------|-------------------------|----------------------------|---------------|
| MUR8120DL | Approximate 0.31 | 2500 | 2500 | 25000 | Reel |

■Characteristics (Typical)





MUR8120DL

FIG3: Forward Voltage

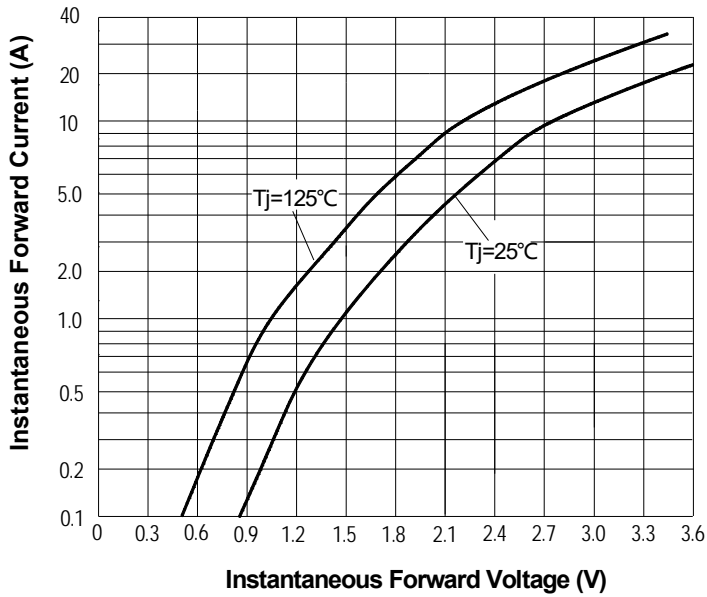
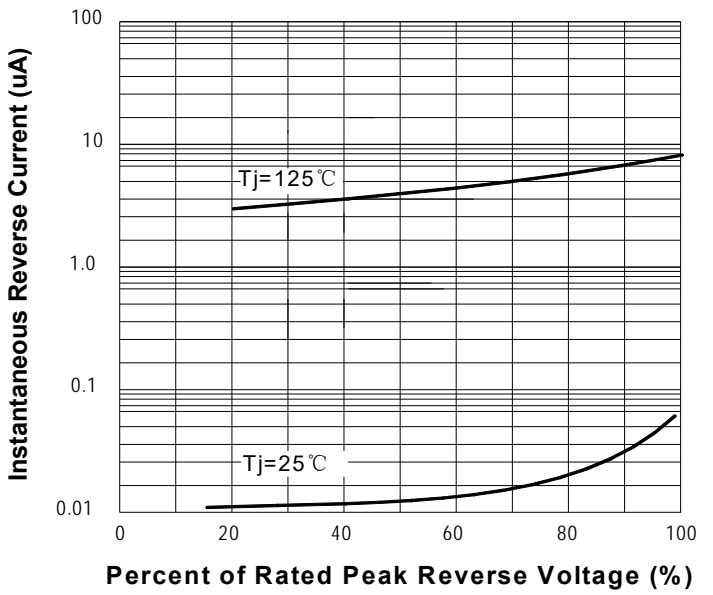
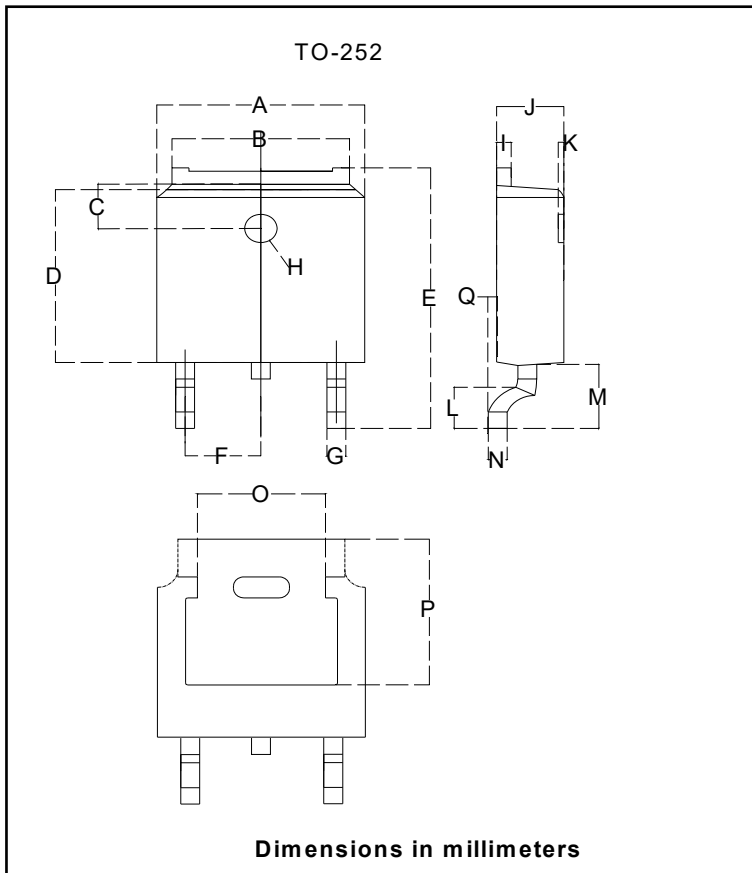


FIG.4: Instantaneous Reverse Characteristics



Outline Dimensions

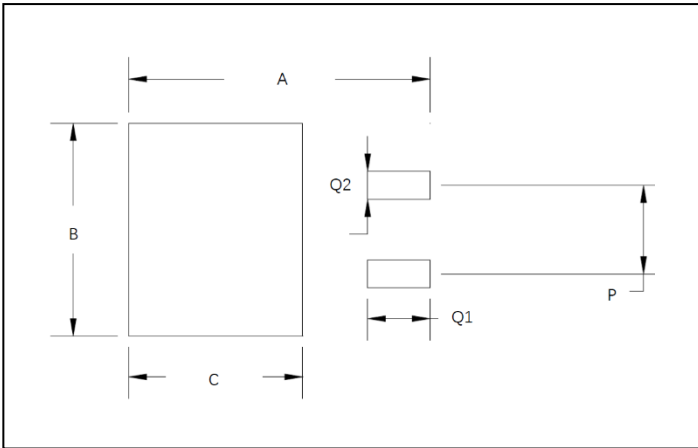


| TO-252 | | |
|--------|---------|---------|
| Dim | Min | Max |
| A | 6.500 | 6.700 |
| B | 5.100 | 5.460 |
| C | 1.400 | 1.800 |
| D | 6.000 | 6.200 |
| E | 10.000 | 10.400 |
| F | 2.166 | 2.366 |
| G | 0.660 | 0.860 |
| H | Φ 1.050 | Φ 1.350 |
| I | 0.460 | 0.580 |
| J | 2.200 | 2.400 |
| K | 0 | 0.300 |
| L | 0.890 | 2.290 |
| M | 2.730 | 3.080 |
| N | 0.430 | 0.580 |
| O | 4.20 | 4.95 |
| P | 5.15 | 5.45 |
| Q | 0 | 0.2 |



MUR8120DL

■Suggested Pad Layout



| Dim | Millimeters |
|-----|-------------|
| A | 11.4 |
| B | 6.74 |
| C | 6.23 |
| P | 4.56 |
| Q1 | 2.28 |
| Q2 | 1.52 |



MUR8120DL

Disclaimer

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