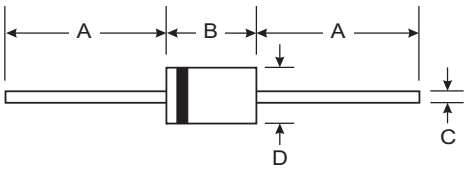
# MUR140 - MUR160

## 1.0A SUPER-FAST RECTIFIER

## Features

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 35A Peak
- Ideally Suited for Automated Assembly
- **Lead Free Finish, RoHS Compliant (Note 5)**




## Mechanical Data

- Case: DO-41
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish — Bright Tin. Solderable per MIL-STD-202, Method 208
- Marking: MUR140: R140
  MUR160: R160
- Polarity: Cathode Band
- Mounting Position: Any
- Weight: 0.35 grams (approximate)

| DO-41 Plastic | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 25.40 | — |
| **B** | 4.06 | 5.21 |
| **C** | 0.71 | 0.864 |
| **D** | 2.00 | 2.72 |
| **All Dimensions in mm** | | |

## Maximum Ratings and Electrical Characteristics

@ $T_A$ = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

| Characteristic | Symbol | MUR140 | MUR160 | Unit |
|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 400 | 600 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 283 | 424 | V |
| Average Rectified Output Current @ $T_T$ = 120°C | $I_O$ | 1.0 | | A |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method) | $I_{FSM}$ | 35 | | A |
| Forward Voltage @ $I_F$ = 1.0A, $T_J$ = 25°C<br>@ $I_F$ = 1.0A, $T_J$ = 150°C | $V_{FM}$ | 1.25<br>1.05 | | V |
| Peak Reverse Current @ $T_A$ = 25°C<br>at Rated DC Blocking Voltage @ $T_A$ = 150°C | $I_{RM}$ | 5.0<br>150 | | μA |
| Reverse Recovery Time (Note 2) | $t_{rr}$ | 50 | | ns |
| Reverse Recovery Time (Note 3) | $t_{rr}$ | 75 | | ns |
| Forward Recovery Time (Note 4) | $t_{fr}$ | 50 | | ns |
| Typical Junction Capacitance (Note 1) | $C_j$ | 45 | | pF |
| Typical Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 72 | | K/W |
| Operating and Storage Temperature Range | $T_j$, $T_{STG}$ | -65 to +175 | | °C |

Notes:
1. Measured at 1.0MHz and applied reverse voltage of 0V DC.
2. Measured with $I_F$ = 0.5A, $I_R$ = 1.0A, $I_{rr}$ = 0.25A. See Figure 5.
3. Measured with $I_F$ = 1A, di/dt = 50A/us.
4. Measured with $I_F$ = 1.0A, di/dt = 100A/μs, Duty Cycle ≤ 2.0%.
5. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7.*

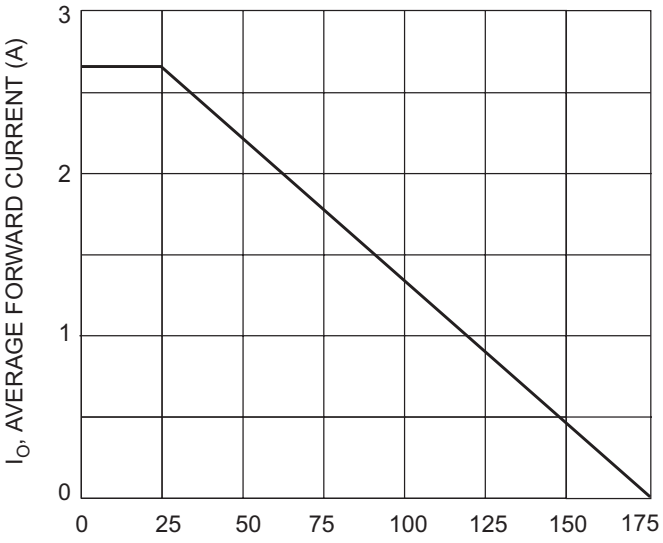



Fig. 1 Forward Current Derating Curve

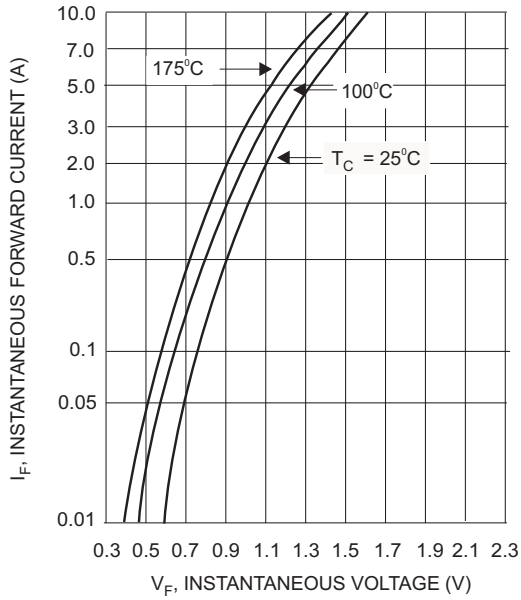



Fig. 2 Typical Forward Current

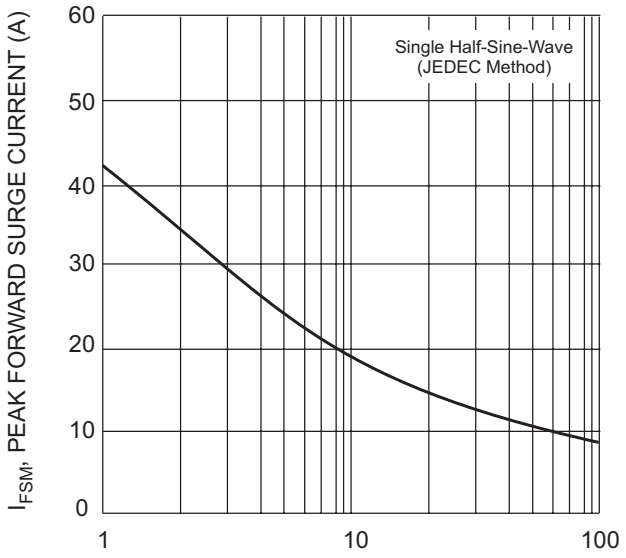



Fig. 3 Surge Current Derating Curve

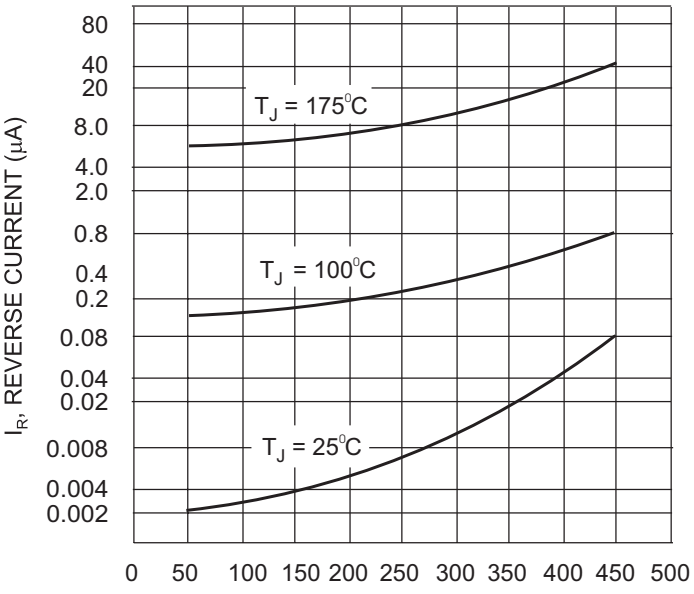
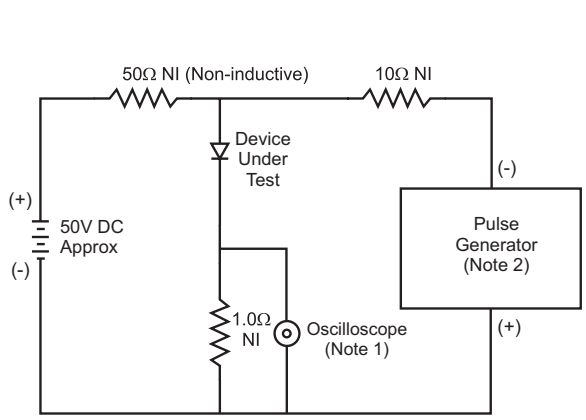



Fig. 4 Typical Reverse Current




Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
2. Rise Time = 10ns max. Input Impedance = 50Ω.

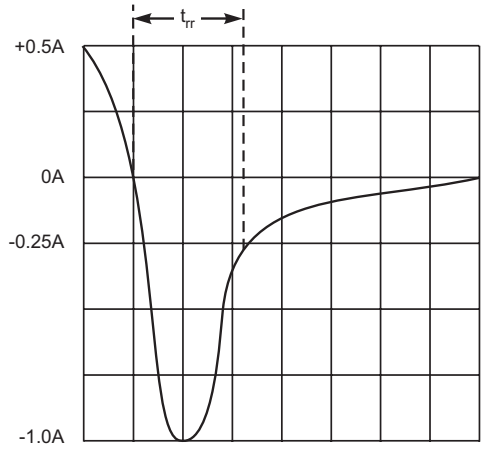



Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

## Ordering Information (Note 6)

| Device | Packaging | Shipping |
|---|---|---|
| MUR140-A | DO-41 | 5K/Ammo Pack |
| MUR140-B | DO-41 | 1K/Bulk |
| MUR140-T | DO-41 | 5K/Tape & Reel, 13-inch |
| MUR160-A | DO-41 | 5K/Ammo Pack |
| MUR160-B | DO-41 | 1K/Bulk |
| MUR160-T | DO-41 | 5K/Tape & Reel, 13-inch |

Notes: 6. For packaging details, visit our website at http://www.diodes.com/datasheets/ap02008.pdf