# MF100U12F2

RoHS COMPLIANT

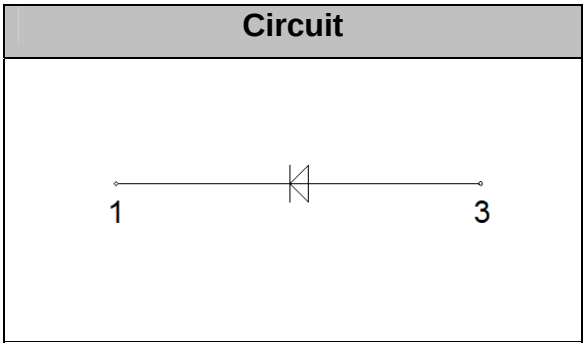
## FRED Modules

**$V_{RRM}$** 1200V
**$I_{FAV}$** 100 A

### Applications

- Inversion Welder
- Uninterruptible Power Supply (UPS)
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Power Factor Correction (PFC) Circuit
- Converter & Chopper

### Circuit




### Features

- Soft Reverse Recovery Characteristics
- Ultrafast Reverse Recovery Time
- Low Reverse Recovery Loss
- Low Forward Voltage
- High Surge Current Capability
- Low Inductance Package

### Maximum Ratings

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| $V_R$ | | 1200 | V |
| $V_{RRM}$ | | 1200 | V |
| $I_{F(AV)}$ | $T_C$=110°C, Per Diode | 100 | A |
| $I_{F(RMS)}$ | $T_C$=110°C, Per Diode | 140 | A |
| $I_{FSM}$ | 1/2 Cycle , 50Hz, Sine | 1100 | A |
| | 1/2 Cycle , 60Hz, Sine | 1200 | A |
| $I^2t$ | $T_J$=45°C, t=10ms, 50Hz, Sine | 6050 | $A^2s$ |
| $P_D$ | | 140 | W |
| Visol | AC, Ton=1min | 3000 | V |
| $T_J$ | | -40 to +150 | °C |
| $T_{STG}$ | | -40 to +125 | °C |
| Torque | Recommended（M6） | 4.5 | N·m |
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| Weight | | 140 | g |

### Thermal Characteristics

| Symbol | Conditions | Values | Units |
|---|---|---|---|
| $R_{th(j-c)}$ | Junction-to-Case | 0.22 | ℃/W |

## Electrical Characteristics

| Symbol | Conditions | Values | | | Units |
|---|---|---|---|---|---|
| | | Min. | Typ. | Max. | |
| $I_{RM}$ | $V_R$=1200V | -- | -- | 1 | mA |
| | $V_R$=1200V, $T_J$=125°C | -- | -- | 5 | mA |
| $V_F$ | $I_F$=100A | -- | 1.58 | | V |
| | $I_F$=100A, $T_J$=125°C | -- | 1.35 | | V |
| trr | $I_F$=1A, $V_R$=30V, $di_F/dt$=-200A/μs | -- | 55 | -- | ns |
| trr | $V_R$=600V, $I_F$=100A, $di_F/dt$=-200A/μs, $T_J$=25°C | -- | 135 | -- | ns |
| $I_{RRM}$ | | -- | 10 | -- | A |
| trr | $V_R$=600V, $I_F$=100A, $di_F/dt$=-200A/μs, $T_J$=125°C | -- | 380 | -- | ns |
| $I_{RRM}$ | | -- | 21 | -- | A |

## Performance Curves

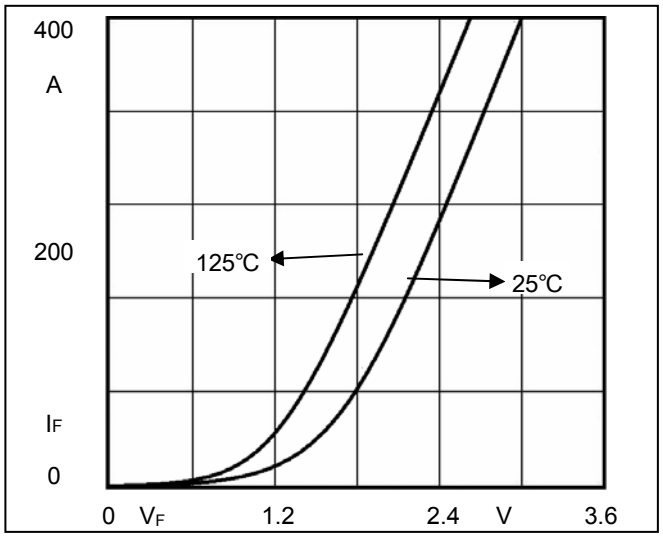



Fig1. Forward Voltage Drop vs Forward Current

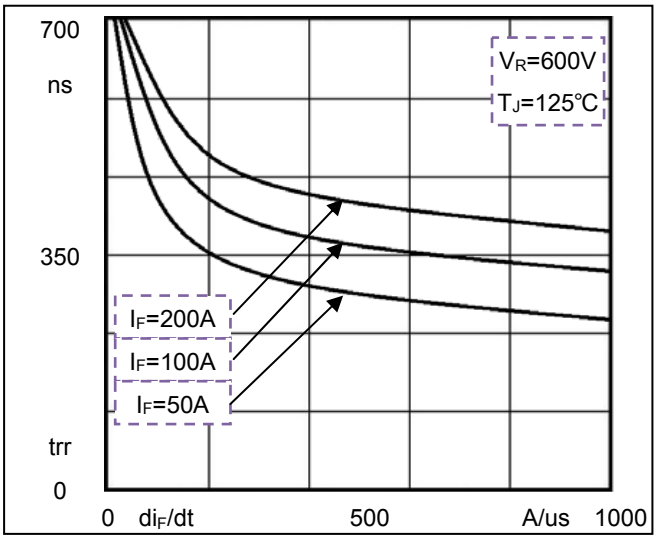



Fig2. Reverse Recovery Time vs $di_F/dt$

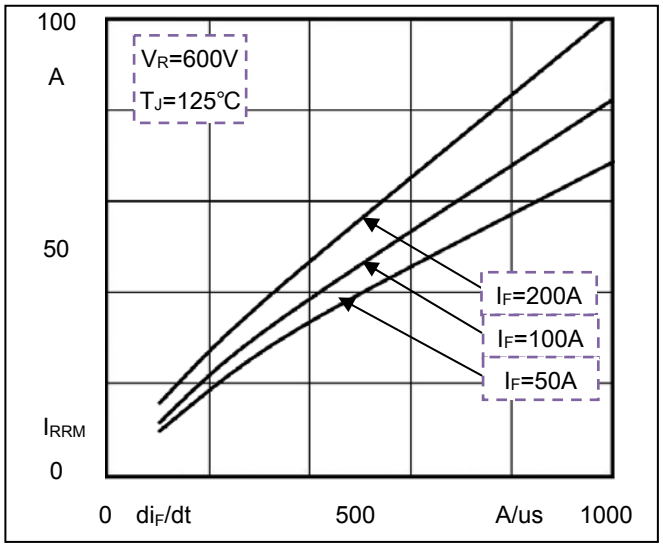



Fig3. Reverse Recovery Current vs $di_F/dt$

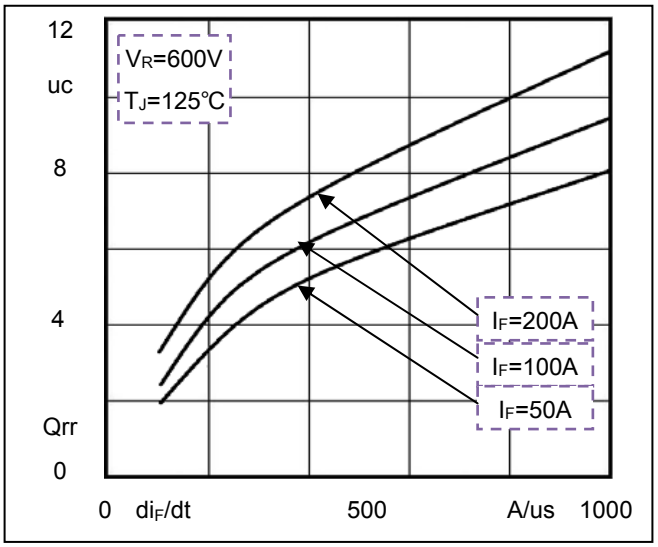
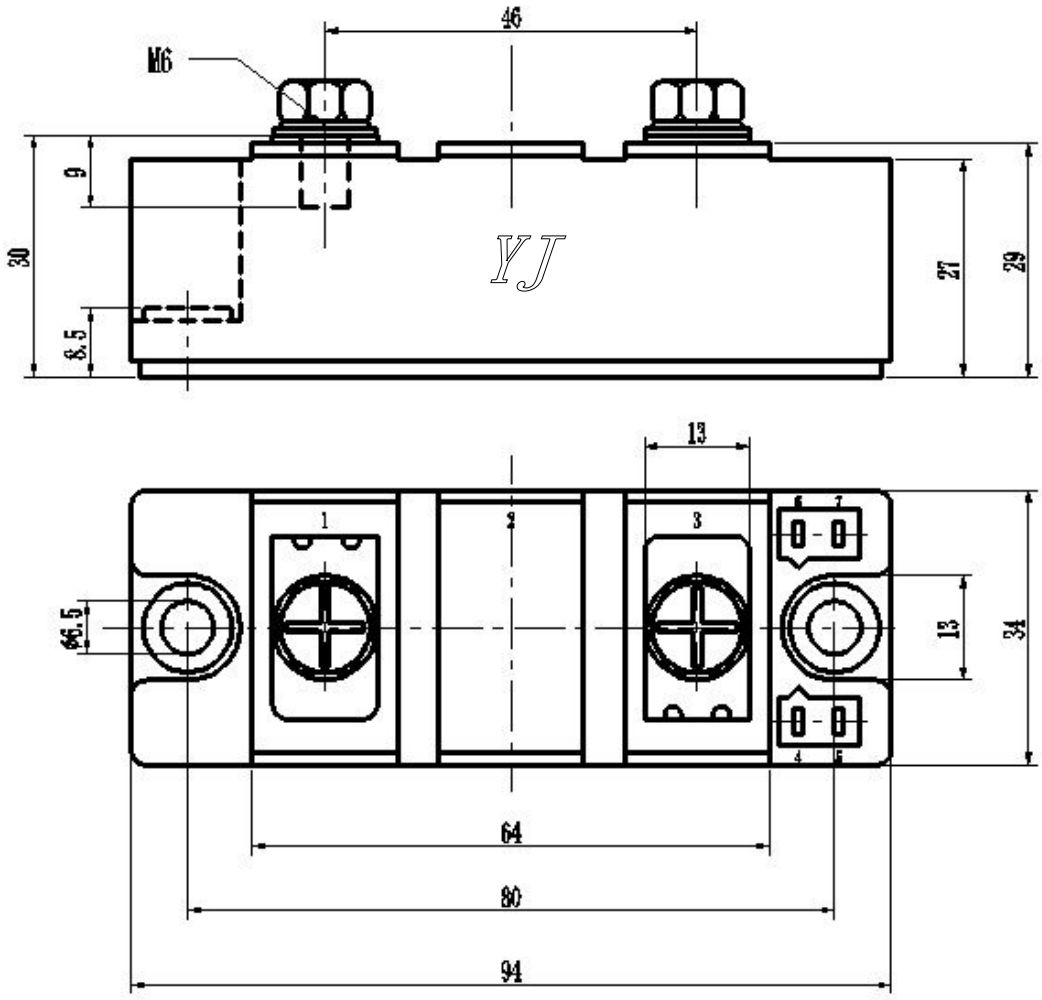



Fig4. Reverse Recovery Charge vs $di_F/dt$

## Package Outline Information

**CASE: F2**




**Dimensions in mm**