

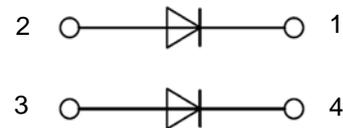
## PRODUCT FEATURES

- Ultrafast Reverse Recovery Time
- Soft Reverse Recovery Characteristics
- Low Reverse Recovery Loss
- High System Power Density
- Popular SOT-227 Package



## APPLICATIONS

- Inversion Welder
- Uninterruptible Power Supply
- Plating Power Supply
- Ultrasonic Cleaner and Welder
- Converter & Chopper
- PFC



## ABSOLUTE MAXIMUM RATINGS ( $T_C=25^\circ\text{C}$ unless otherwise specified)

| Symbol       | Parameter/Test Conditions                      |  | Values      | Unit                      |
|--------------|--|--|-------------|---------------------------|
| $V_R$        | Maximum D.C. Reverse Voltage                   |  | 600         | V                         |
| $V_{RRM}$    | Maximum Repetitive Reverse Voltage             |  |             |                           |
| $I_{F(AV)}$  | Average Forward Current                        | $T_C=90^\circ\text{C}$ , Per Diode                 | 100         | A                         |
|              |  | $T_C=90^\circ\text{C}$ , Per Moudle                | 200         |                           |
| $I_{F(RMS)}$ | RMS Forward Current                            | $T_C=90^\circ\text{C}$ , Per Diode                 | 150         |                           |
| $I_{FSM}$    | Non Repetitive Surge Forward Current           | $T_J=45^\circ\text{C}$ , t=10ms, Sine, peak value  | 1500        |                           |
|              |  | $T_J=45^\circ\text{C}$ , t=8.3ms, Sine, peak value | 1800        |                           |
| $I^2t$       | For Fusing                                     | $T_J=45^\circ\text{C}$ , t=10ms, Sine, peak value  | 11250       | A <sup>2</sup> S          |
|              |  | $T_J=45^\circ\text{C}$ , t=8.3ms, Sine, peak value | 16200       |                           |
| $P_D$        | Power Dissipation                              |  | 417         | W                         |
| $T_J$        | Junction Temperature                           |  | -40 to +150 | $^\circ\text{C}$          |
| $T_{STG}$    | Storage Temperature Range                      |  | -40 to +125 | $^\circ\text{C}$          |
| $V_{isol}$   | Isolation Breakdown Voltage                    | AC, 50Hz(R.M.S), t=1minute                         | 3000        | V                         |
| Torque       | Module to Sink                                 | Recommended (M4)                                   | 0.7~1.1     | Nm                        |
| Torque       | Module Electrodes                              | Recommended (M4)                                   | 0.7~1.1     | Nm                        |
| $R_{thJC}$   | Junction to Case Thermal Resistance(Per Diode) |  | 0.3         | $^\circ\text{C}/\text{W}$ |
| Weight       |  |  | 26.5        | g                         |

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# MMF2X100J060D

## ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ unless otherwise specified)

| Symbol    | Parameter/Test Conditions   | Min.   | Typ. | Max. | Unit |
|-----------|---|--|------|------|------|
| $I_{RM}$  | Maximum Reverse Leakage Current   | $V_R = 600\text{V}$                          |      | 1    | mA   |
|           |   | $V_R = 600\text{V}, T_J = 125^\circ\text{C}$ |      | 5    |      |
| $V_F$     | Forward Voltage   | $I_F=100\text{A}$                            | 1.35 | 1.8  | V    |
|           |   | $I_F=100\text{A}, T_J=125^\circ\text{C}$     | 1.15 |      |      |
| $t_{rr}$  | Reverse Recovery Time ( $I_F = 1\text{A}, di_F/dt = -200\text{A}/\mu\text{s}, V_R = 30\text{V}$ ) |  | 50   |      | ns   |
| $t_{rr}$  | Reverse Recovery Time   |  | 95   |      | ns   |
| $I_{RRM}$ | Maximum Reverse Recovery Current  |  | 8.5  |      |      |
| $t_{rr}$  | Reverse Recovery Time   |  | 190  |      | ns   |
| $I_{RRM}$ | Maximum Reverse Recovery Current  |  | 19   |      |      |

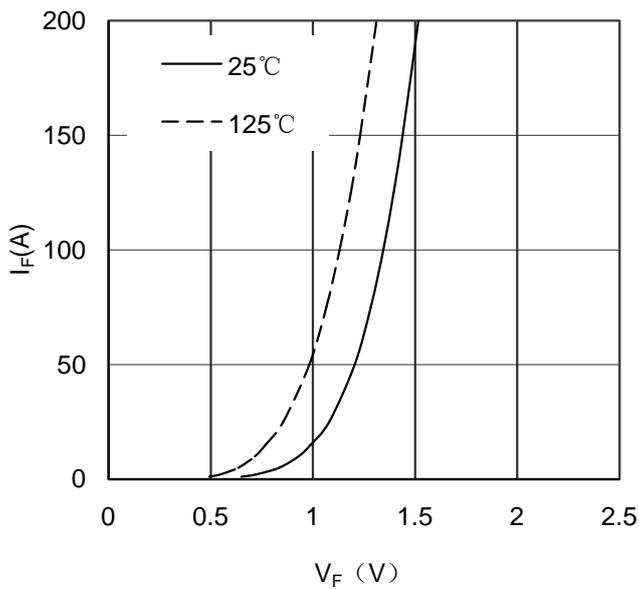


Figure 1. Forward Voltage Drop vs Forward Current

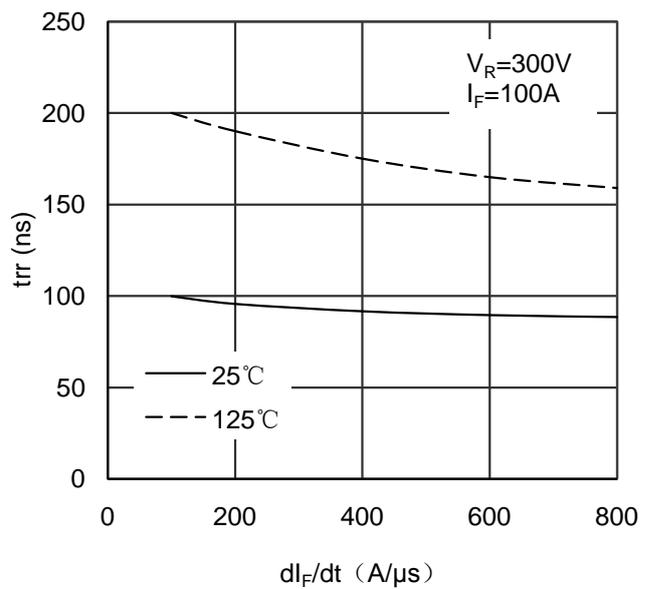


Figure 2. Reverse Recovery Time vs  $di_F/dt$

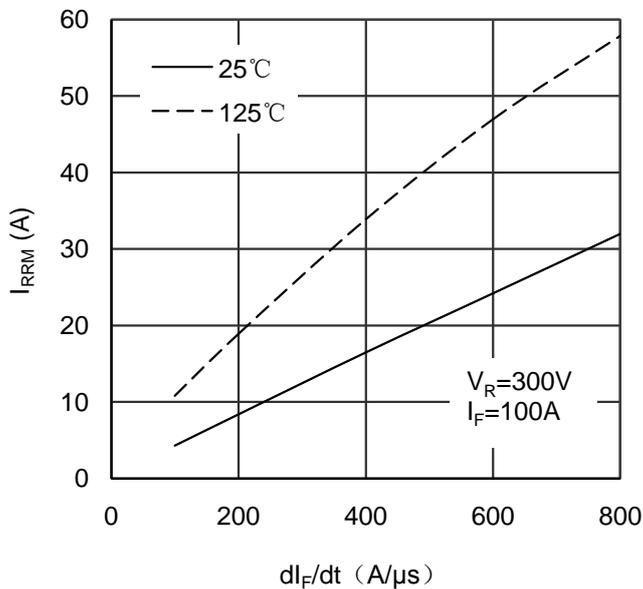


Figure 3. Reverse Recovery Current vs  $di_F/dt$

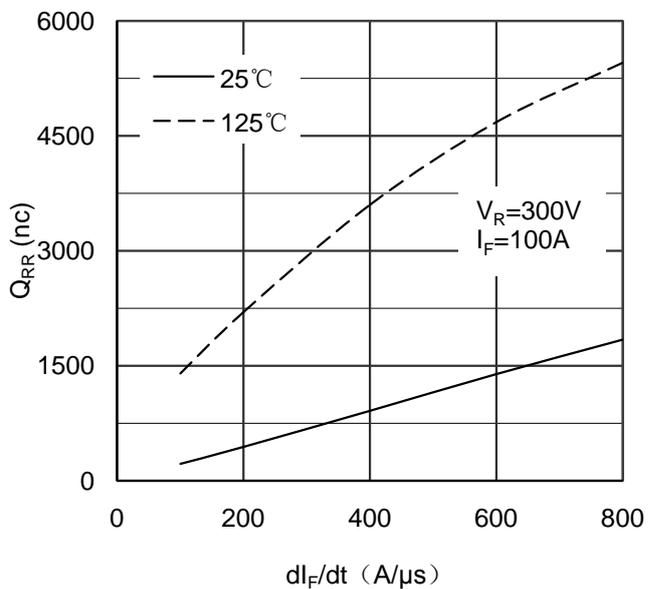


Figure 4. Reverse Recovery Charge vs  $di_F/dt$

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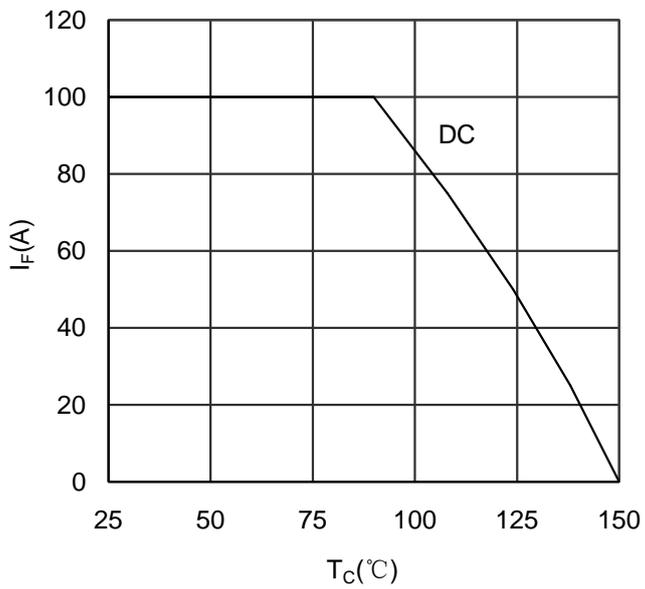


Figure 5. Forward current vs Case temperature

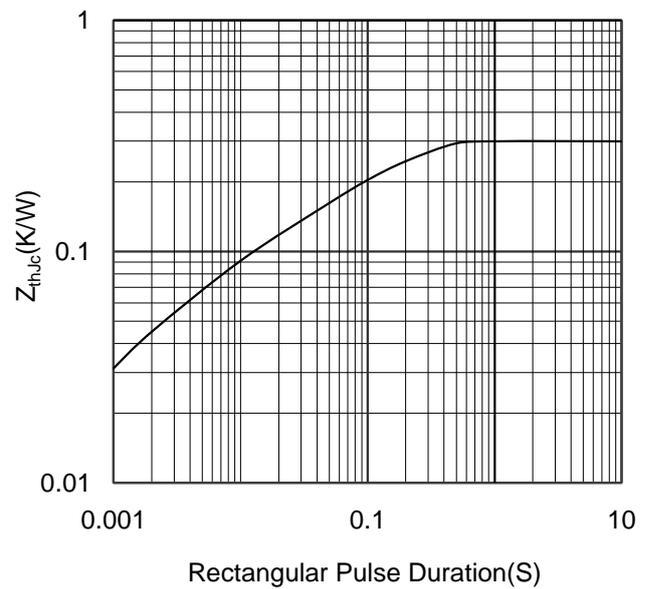
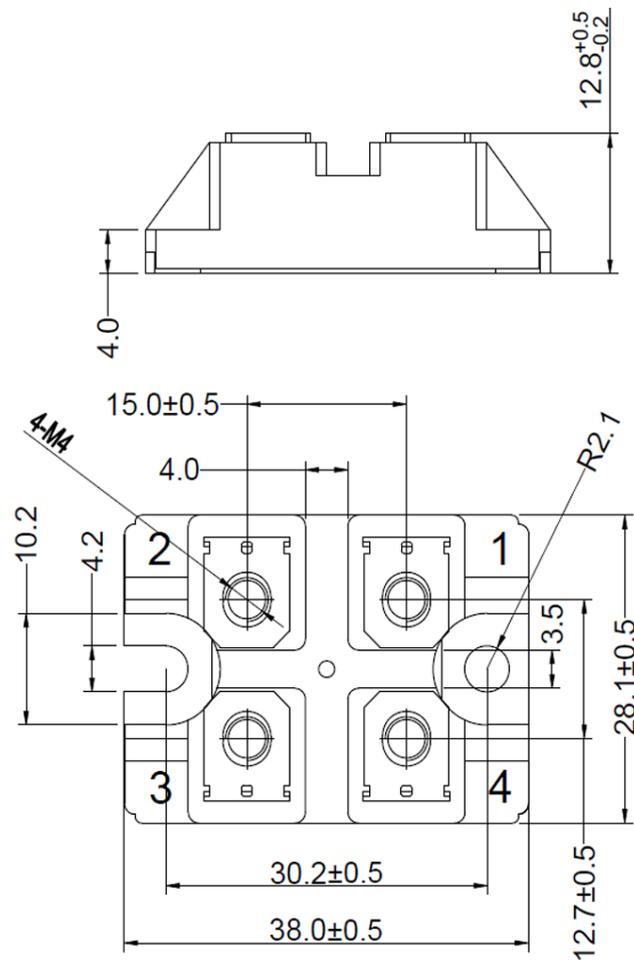


Figure 6. Transient Thermal Impedance



Dimensions in (mm)  
Figure 7. Package Outline