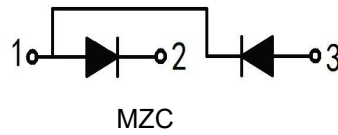


Fast Recovery Diode Module

| Symbol | Value | Unit |
|-----------|-------|------|
| V_R | 1200 | V |
| I_{FAV} | 300 | A |



Features

- Ultra-Fast Reverse Recovery Time
- Soft Reverse Recovery Characteristics
- Low Reverse Recovery Loss
- High System Power Density

Applications

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

Maximum Ratings

| Symbol | Item | Conditions | Values | Unit |
|------------|------------------------------------|---|-------------|----------------------|
| V_R | Maximum D.C. Reverse Voltage | - | 1200 | V |
| V_{RRM} | Maximum Repetitive Reverse Voltage | - | | |
| I_{FAV} | Average Forward Current | Rectangular, $d=0.5$, $T_C=78^\circ\text{C}$, Per Leg | 300 | A |
| I_{FRMS} | RMS Forward Current | $T_C=78^\circ\text{C}$, Per Leg | 420 | A |
| I_{FSM} | Non-Repetitive Peak Surge Current | $t=50\text{Hz}(10\text{ms})$, $V_R=0\text{V}$, $T_j=25^\circ\text{C}$ | 2700 | A |
| I^2t | Circuit Fusing Consideration | $t=10\text{ms}$, $T_j=25^\circ\text{C}$ | 36450 | A^2s |
| V_{ISO} | Isolation Breakdown Voltage | AC 50Hz/60Hz, R.M.S, 1min | 3000 | V |
| P_{tot} | Total Power Dissipation | $T_j=25^\circ\text{C}$ | 962 | W |
| T_j | Operating Junction Temperature | - | -40 to +150 | $^\circ\text{C}$ |
| T_{stg} | Storage Temperature | - | -40 to +125 | $^\circ\text{C}$ |
| M_t | Mounting Torque | To Terminals(M6) | 5±15% | N·m |
| M_s | | To Heatsink(M6) | 5±15% | |
| Weight | Module (Approximately) | - | 185 | g |

Thermal Characteristics

| Symbol | Item | Conditions | Values | Unit |
|---------------|------------------------|---------------------------|--------|---------------------------|
| $R_{th(j-c)}$ | Thermal Impedance, Max | Junction to Case(Per Leg) | 0.13 | $^\circ\text{C}/\text{W}$ |

Electrical Characteristics

| Symbol | Item | Conditions | Values | | | Unit |
|-----------|--|---|--------|------|------|------------|
| | | | Min. | Typ. | Max. | |
| V_{FM} | Forward Voltage Drop Per Leg, Max | $T_j=25^\circ\text{C}$, $I_F=300\text{A}$ | - | - | 2.2 | V |
| I_{RRM} | Repetitive Peak Reverse Current Per Leg, Max | $T_j=25^\circ\text{C}$, $V_R=V_{RRM}$ | - | - | 0.2 | mA |
| | | $T_j=150^\circ\text{C}$, $V_R=V_{RRM}$ | - | - | 10 | |
| t_{rr} | Typical Reverse Recovery Time Per Leg | $I_F=0.5\text{A}$, $I_R=-1\text{A}$, $I_{RR}=-0.25\text{A}$ | - | 200 | - | ns |
| t_{rr} | Reverse Recovery Time | $I_F=300\text{A}$, $V_R=600\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_j=25^\circ\text{C}$ | - | 240 | - | ns |
| I_{RM} | Maximum Reverse Recovery Current | | - | 22 | - | A |
| t_{rr} | Reverse Recovery Time | $I_F=300\text{A}$, $V_R=600\text{V}$, $di_F/dt=-200\text{A}/\mu\text{s}$, $T_j=125^\circ\text{C}$ | - | 410 | - | ns |
| I_{RM} | Maximum Reverse Recovery Current | | - | 30 | - | A |
| V_{T0} | Threshold Voltage, for power loss calculation only | $T_j=125^\circ\text{C}$ | 0.7 | | | V |
| r_T | Slope Resistance, for power loss calculation only | $T_j=125^\circ\text{C}$ | 1.08 | | | m Ω |

Characteristics Diagram

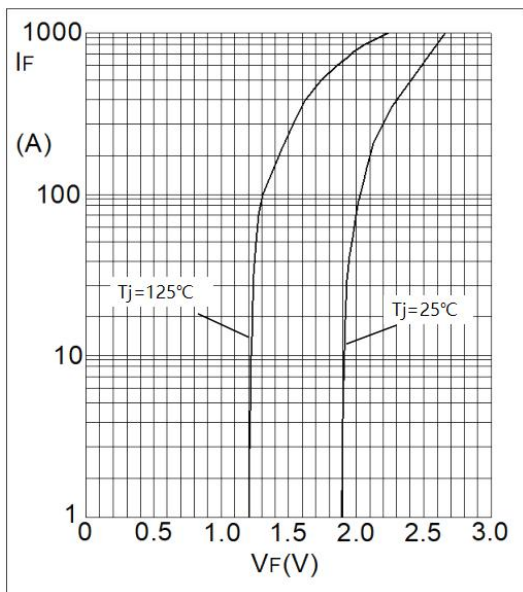


Fig1. Forward Characteristics

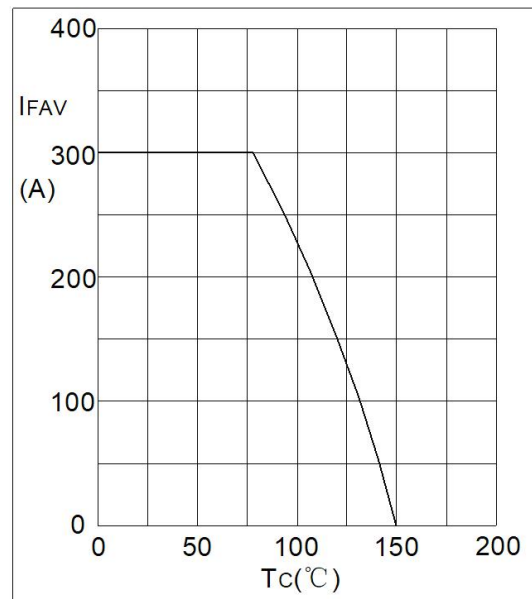


Fig2. Forward Current Derating Curve

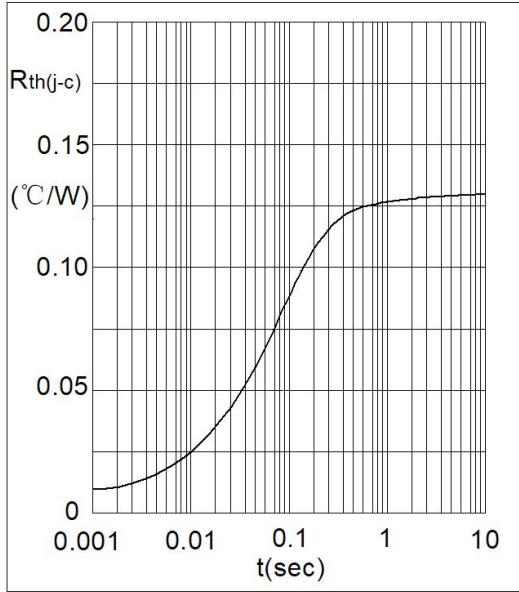


Fig3. Transient Thermal Impedance

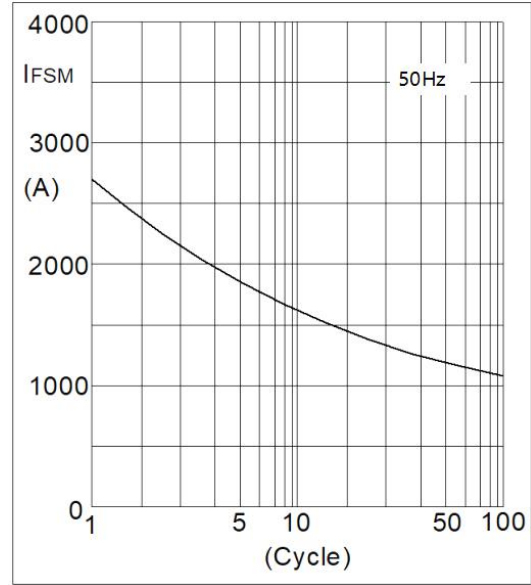


Fig4. Max Non-Repetitive Forward Surge Current

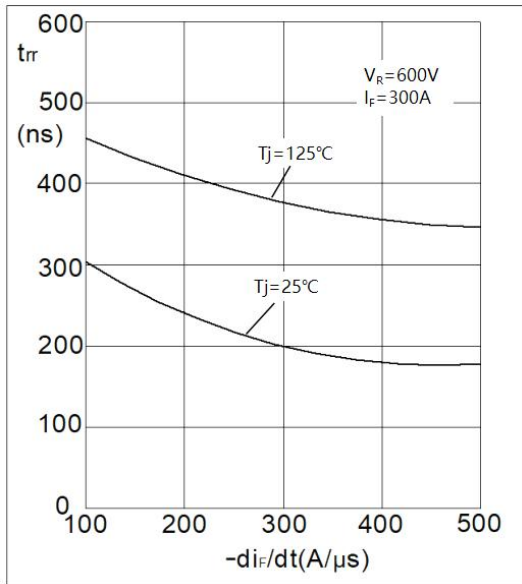


Fig5. Reverse Recovery Time VS di_F/dt

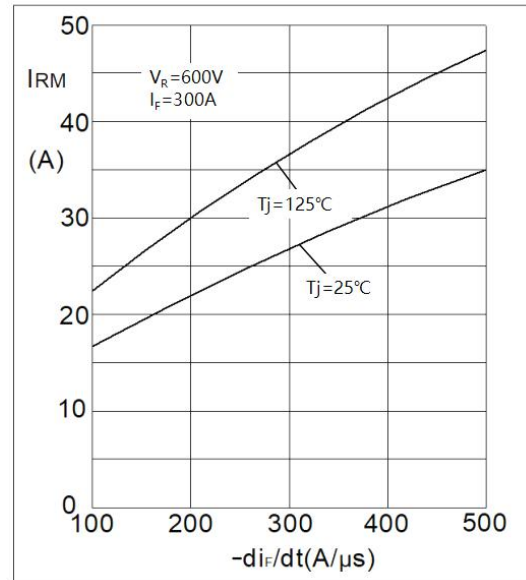


Fig6. Reverse Recovery Current VS di_F/dt

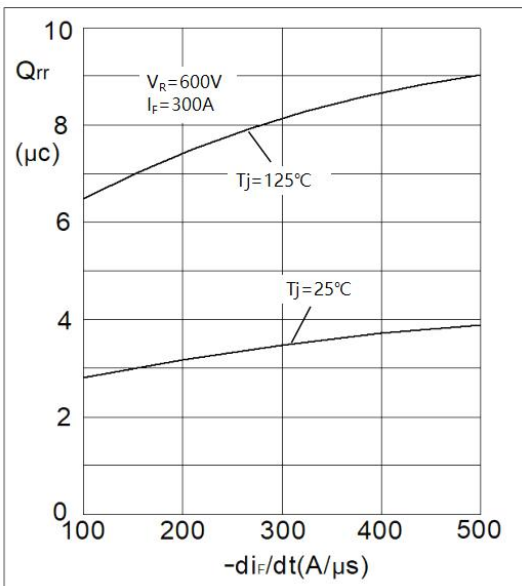
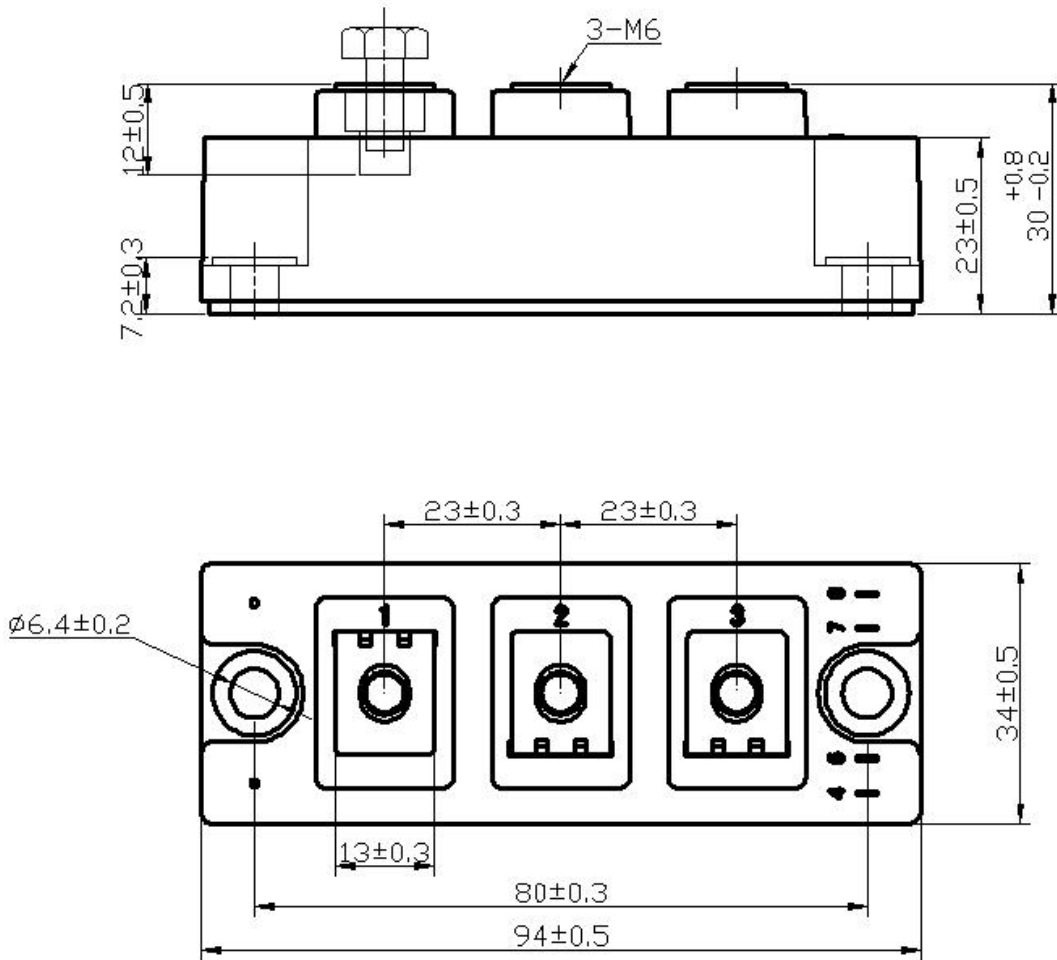


Fig7. Reverse Recovery Charge VS di_F/dt

Package Outlines M69GB (Dimensions in mm)



***Important Usage Information and Disclaimer**

The specifications of Zhuhai Hypersemi Co., Ltd. products are not guarantees of product characteristics. They reflect typical performance expected in standard applications, which may vary with specific uses. Users must conduct prior testing for their applications and make necessary adjustments.

Users are responsible for the safety of applications utilizing our products and must implement adequate safety measures to prevent physical injury, fire, or other risks in case of product failure. It is the user's duty to ensure that application designs comply with all applicable laws and standards. Our products must not be used in any applications where a product failure could reasonably result in personal injury, unless specifically authorized in a signed document by Zhuhai Hypersemi Co., Ltd.

No representations or warranties are made regarding the accuracy or completeness of this information, including any claims of non-infringement of third-party intellectual property rights. Zhuhai Hypersemi Co., Ltd. assumes no liability for any applications or uses of its products and does not grant any licenses to its intellectual property rights or those of others. We also make no claims regarding non-infringement of third-party intellectual property rights that may arise from applications.

Due to technical requirements, our products may contain hazardous substances. For details, please contact your nearest sales office. This document replaces all previous information and may be updated. We reserve the right to make changes.