# Diode Module

## Features

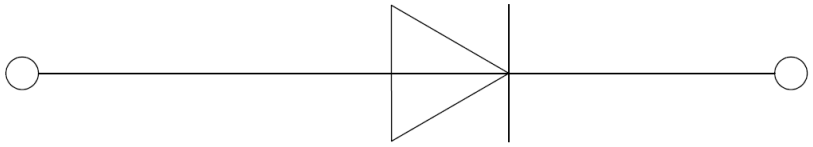
- A package of series of one diode
- High Surge Current Capability
- Welding by vacuum welding technology, which provide high reliability

## Product Summary

| Parameter | Value | Unit |
|---|---|---|
| $V_{RRM}$ | 2000 | V |
| $I_{F(AV)}$(@ $T_C$ = 100℃) | 1000 | A |
| $I_{FSM}$(@ $t_P$ = 10ms) | 30000 | A |
| $V_F$(Max) | 1.60 | V |

## Applications

- AC converter
- Inverter
- DC motor



## Absolute Maximum Ratings (@ $T_C$ = 25°C unless otherwise specified)

| Parameter | Conditions | Symbol | Values | Unit |
|---|---|---|---|---|
| Repetitive peak reverse voltage | $T_{vj}$ = 25°C | $V_{RRM}$ | 2000 | V |
| Non-repetitive peak reverse voltage | $T_{vj}$ = 25°C | $V_{RSM}$ | 2100 | V |
| Average forward current | $T_C$ = 100°C | $I_{F(AV)}$ | 1000 | A |
| Forward surge current | 1/2 cycle, Sine wave, 50Hz $T_{vj}$ = 25℃ | $I_{FSM}$ | 30000 | A |
| $I^2t$ value for fusing | | $I^2t$ | $4.5\times10^6$ | $A^2s$ |
| RMS isolation voltage | A.C 50Hz(1s/1min) | $V_{ISO}$ | 3600/3000 | V |
| Junction temperature range | | $T_J$ | -40 ~ +150 | ℃ |
| Storage temperature range | | $T_{stg}$ | -40 ~ +125 | ℃ |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## Electrical Characteristics (@ $T_C$ = 25°C unless otherwise specified)

| Parameter | Conditions | Symbol | Values | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Peak forward voltage | $I_F$=1000A, $t_P$=380μs | $V_F$ | | | 1.60 | V |
| Reverse leakage current | $V_R$ = $V_{RRM}$, $T_{vj}$ = 25℃ | $I_{RRM}$ | | | 300 | μA |
| | $V_R$ = $V_{RRM}$, $T_{vj}$ = 150℃ | | | | 40 | mA |
| Threshold voltage | $T_{vj}$ = 150℃, for power loss calculation only | $V_{TO}$ | | | 0.75 | V |
| Dynamic resistance | | $r_T$ | | | 0.2 | mΩ |

## Thermal Characteristics (@ $T_C$ = 25°C unless otherwise specified)

| Parameter | Conditions | Symbol | Values | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min. | Typ. | Max. | |
| Thermal resistance, junction to case | per diode | $R_{th(j-c)}$ | | 0.06 | | ℃/W |
| Thermal resistance, case to heatsink | per module | $R_{th(c-s)}$ | | 0.03 | | ℃/W |
| Mounting torque | Module and heatsink fixed torque M6 | M | 3.0 | 4.0 | 5.0 | N·m |
| | Electrode connection torque M6 | | 3.0 | 4.0 | 5.0 | N·m |

## Ordering Information

| Device | Marking | Package | Weight | Inner Box | Per Carton |
|---|---|---|---|---|---|
| JMD1000KF20G4 | JMD1000KF20G4 | G4 | 323g/PCS | 12 PCS | 48 PCS |


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## Typical Electrical & Thermal Characteristics

**FIG.1:** Forward characteristics(per diode)

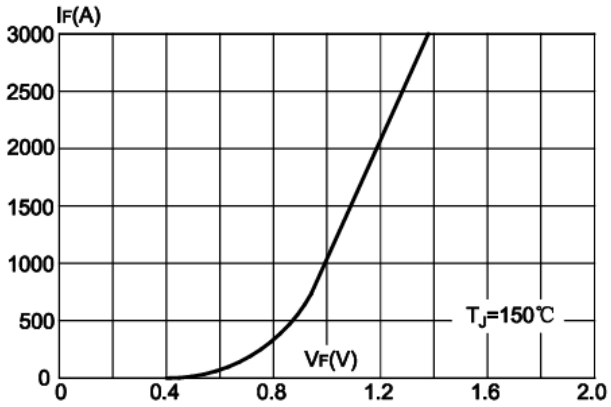



**FIG.2:** Peak on-state surge current

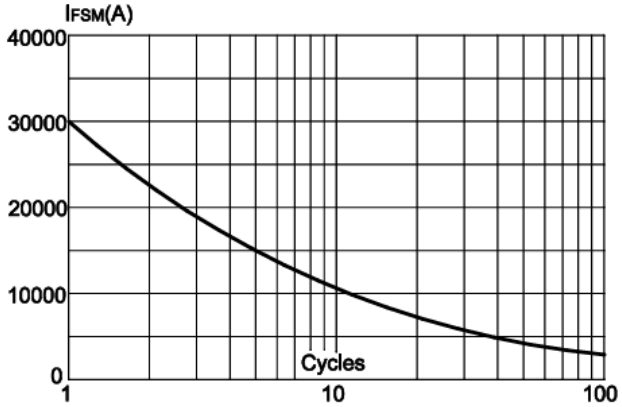



**FIG.3:** Forward current vs. case temperature

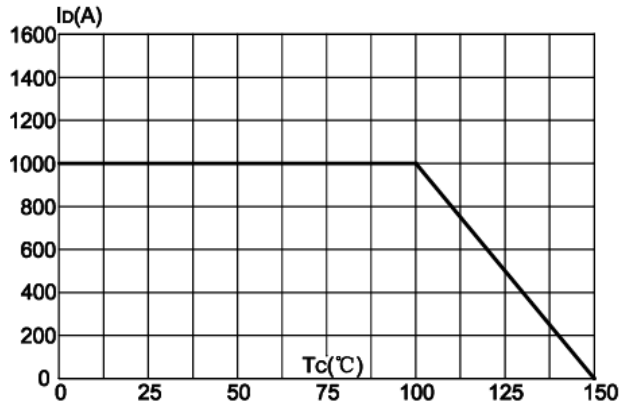
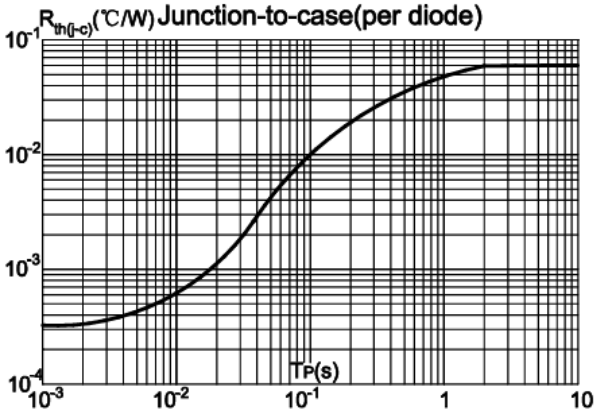
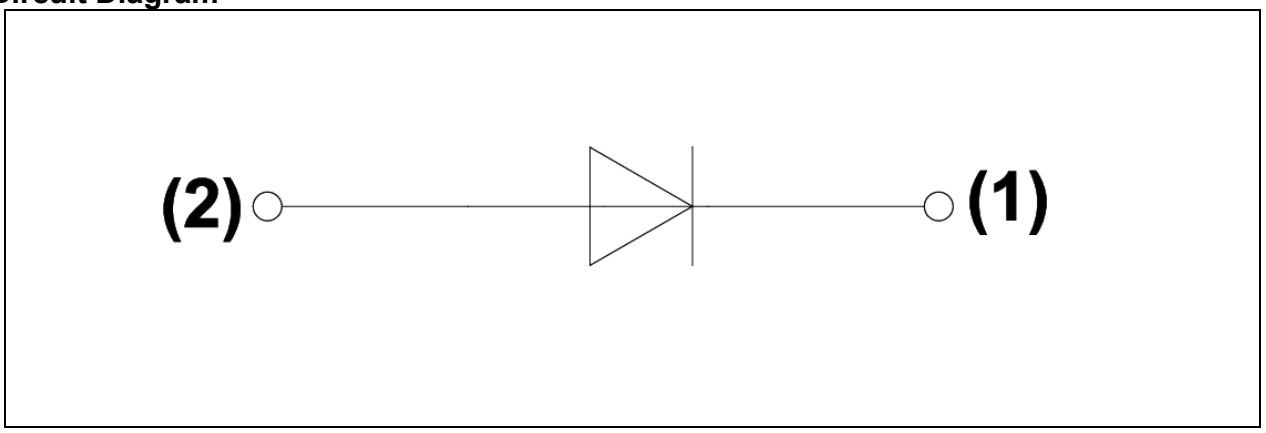



**FIG.4:** Maximum transient thermal impedance




## Circuit Diagram





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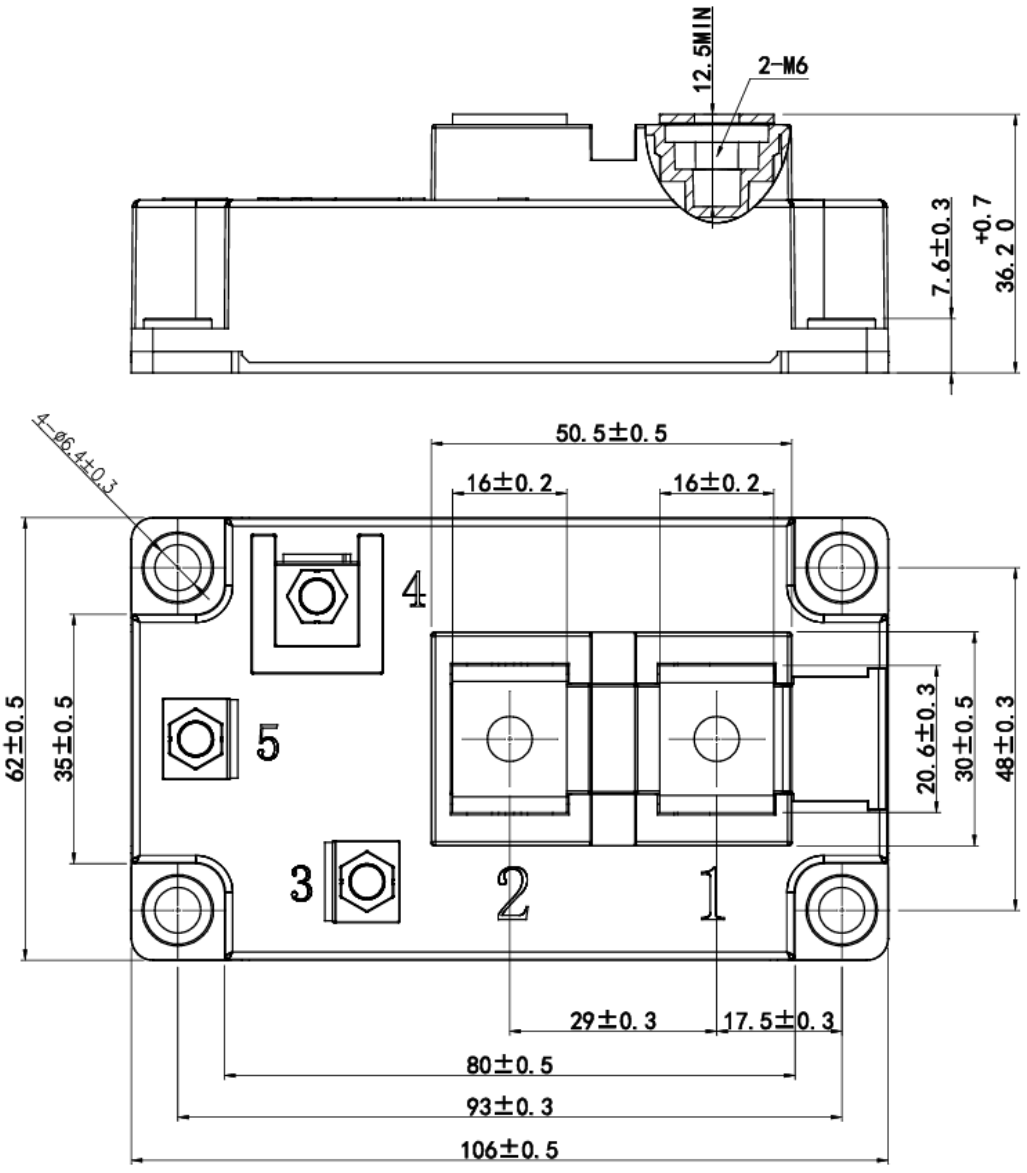
## Package Outlines (mm)




Unit of measurement: mm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