



## Diode Module

### Features

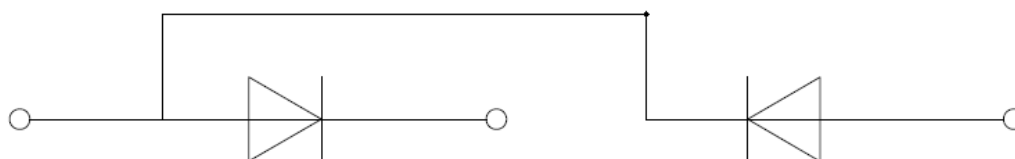
- A package of series of two diodes
- Heat transfer through alumina ceramic and metal substrate
- Welding by vacuum welding technology, which provide high reliability

### Product Summary

| Parameter                         | Value | Unit |
|-----------------------------------|-------|------|
| $V_{RRM}$                         | 1800  | V    |
| $I_{F(AV)}(@ T_C = 100^{\circ}C)$ | 110   | A    |
| $I_{FSM}(@ t_p = 10ms)$           | 2900  | A    |
| $V_F(Max)$                        | 1.60  | V    |

### Applications

- AC converter
- Inverter
- DC motor



### Absolute Maximum Ratings (@ $T_C = 25^{\circ}C$ unless otherwise specified)

| Parameter                           | Conditions                 | Symbol      | Values     | Unit        |
|-------------------------------------|----------------------------|-------------|------------|-------------|
| Repetitive peak reverse voltage     | $T_{vj} = 25^{\circ}C$     | $V_{RRM}$   | 1800       | V           |
| Non-repetitive peak reverse voltage | $T_{vj} = 25^{\circ}C$     | $V_{RSM}$   | 1900       | V           |
| Average forward current             | $T_C = 100^{\circ}C$       | $I_{F(AV)}$ | 110        | A           |
| Forward surge current               | 1/2 cycle, Sine wave, 50Hz | $I_{FSM}$   | 2900       | A           |
| $I^2t$ value for fusing             | $T_{vj} = 25^{\circ}C$     | $I^2t$      | 42050      | $A^2s$      |
| RMS isolation voltage               | A.C 50Hz(1s/1min)          | $V_{ISO}$   | 3600/3000  | V           |
| Junction temperature range          |                            | $T_J$       | -40 ~ +150 | $^{\circ}C$ |
| Storage temperature range           |                            | $T_{stg}$   | -40 ~ +125 | $^{\circ}C$ |

**Electrical Characteristics (@  $T_C = 25^\circ\text{C}$  unless otherwise specified)**

| Parameter               | Conditions                                                        | Symbol    | Values |      |      | Unit             |
|-------------------------|-------------------------------------------------------------------|-----------|--------|------|------|------------------|
|                         |                                                                   |           | Min.   | Typ. | Max. |                  |
| Peak forward voltage    | $I_F=330\text{A}$ , $t_P=380\mu\text{s}$                          | $V_F$     |        |      | 1.60 | V                |
| Reverse leakage current | $V_R = V_{RRM}$ , $T_{vj} = 25^\circ\text{C}$                     | $I_{RRM}$ |        |      | 100  | $\mu\text{A}$    |
|                         | $V_R = V_{RRM}$ , $T_{vj} = 150^\circ\text{C}$                    |           |        |      | 40   | mA               |
| Threshold voltage       | $T_{vj} = 150^\circ\text{C}$ ,<br>for power loss calculation only | $V_{TO}$  |        |      | 0.88 | V                |
| Dynamic resistance      |                                                                   | $r_T$     |        |      | 1.6  | $\text{m}\Omega$ |

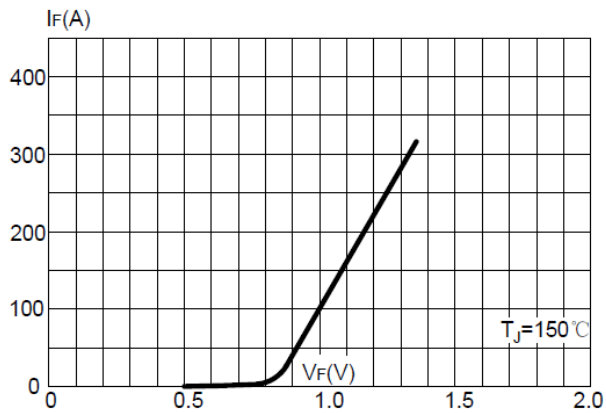
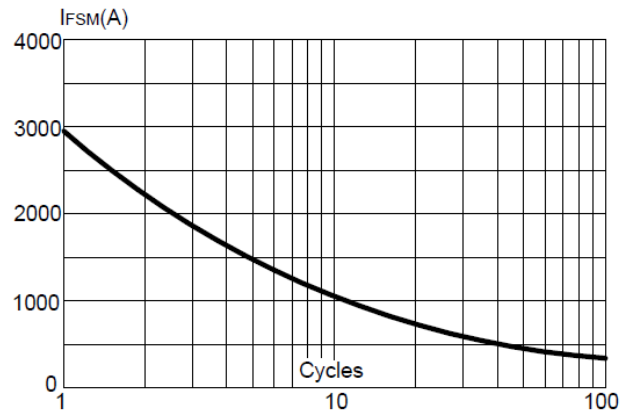
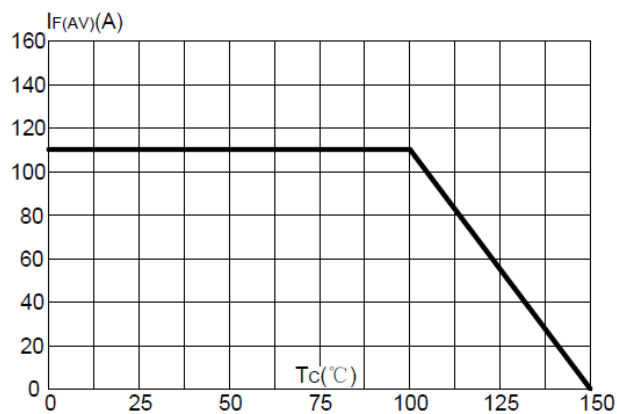
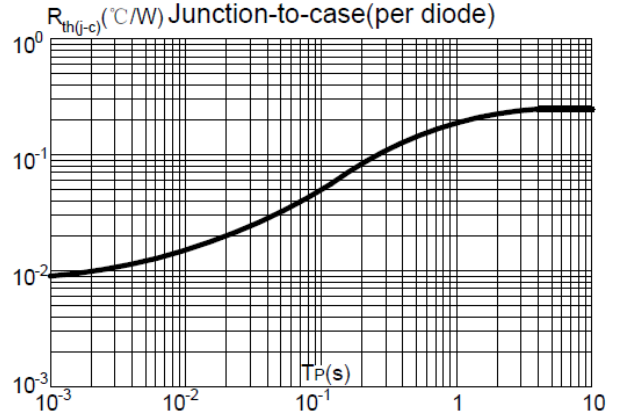
**Thermal Characteristics (@  $T_C = 25^\circ\text{C}$  unless otherwise specified)**

| Parameter                            | Conditions                       | Symbol        | Values |      |      | Unit               |
|--------------------------------------|----------------------------------|---------------|--------|------|------|--------------------|
|                                      |                                  |               | Min.   | Typ. | Max. |                    |
| Thermal resistance, junction to case | per diode                        | $R_{th(j-c)}$ |        | 0.24 |      | $^\circ\text{C/W}$ |
| Thermal resistance, case to heatsink | per diode                        | $R_{th(c-s)}$ |        | 0.13 |      | $^\circ\text{C/W}$ |
| Mounting torque                      | Module and heatsink fixed torque | M             | 4.25   |      | 5.75 | N·m                |
|                                      | Electrode connection torque      |               | 2.55   |      | 3.45 | N·m                |

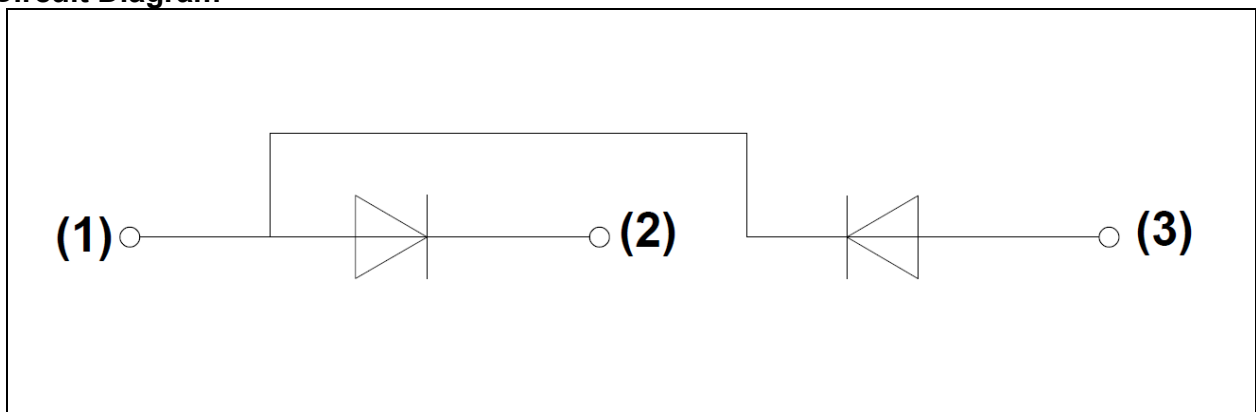
**Ordering Information**

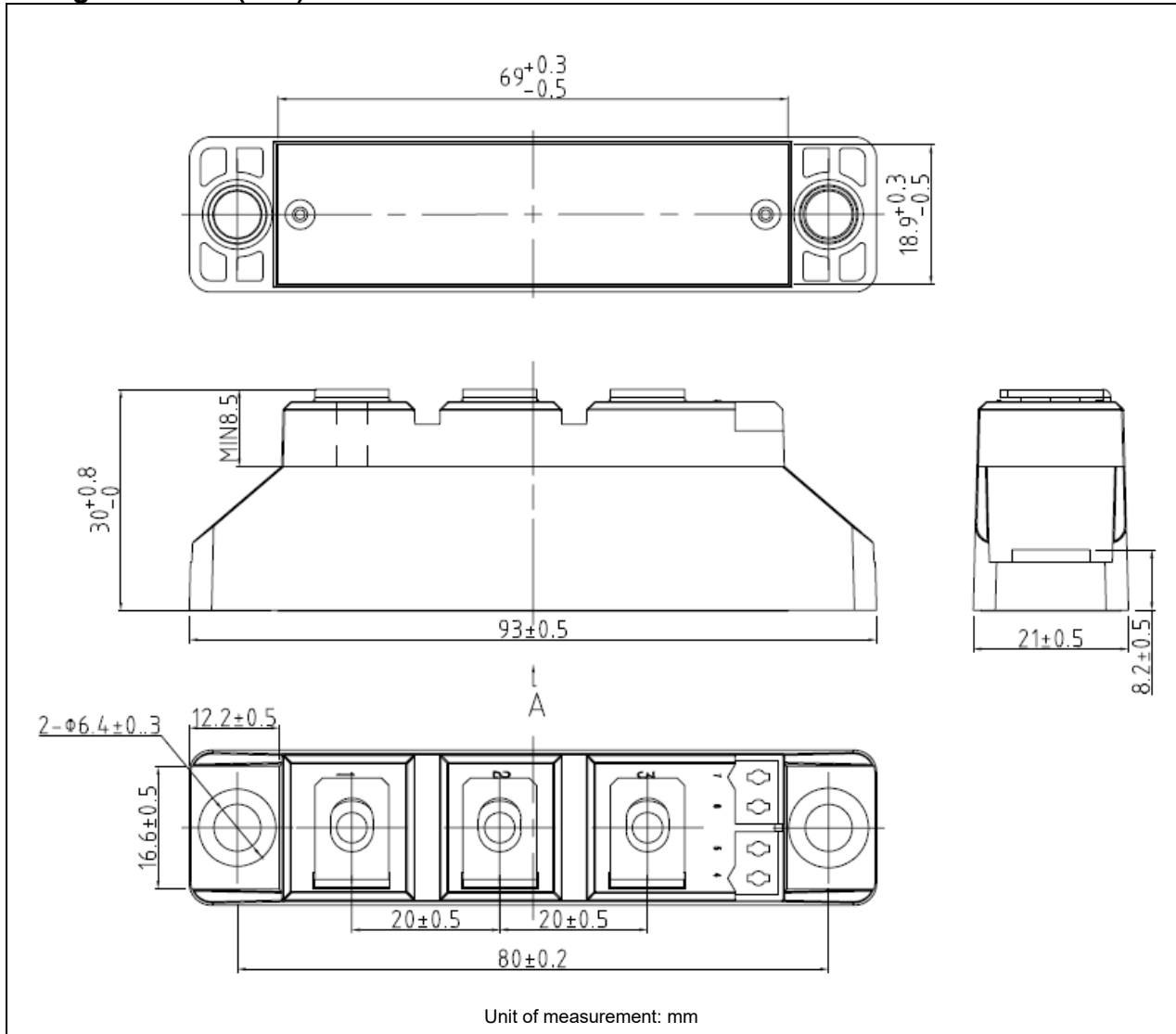
| Device        | Marking       | Package | Weight     | Inner Box | Per Carton |
|---------------|---------------|---------|------------|-----------|------------|
| JMD110KD18T1W | JMD110KD18T1W | T1      | 100±5g/PCS | 10 PCS    | 120 PCS    |

## 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



**Package Outlines (mm)**




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