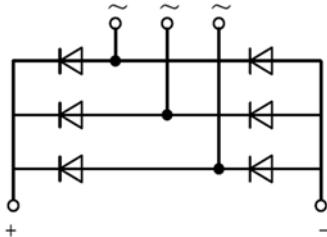


## PRODUCT FEATURES

- ☐ Low Forward Voltage
- ☐ High Surge Current Capability
- ☐ Low Leakage Current
- ☐ Low Inductance Package



## APPLICATIONS

- ☐ Field Supply For DC Motors
- ☐ Line Rectifiers For Transistorized AC Motor Controllers
- ☐ Non-controllable Rectifiers For AC/DC Converter
- ☐ UL:E332185



## Module Type

| Module Type | $V_{RRM}$<br>Repetitive Peak Reverse Voltage | $V_{RSM}$<br>Non-Repetitive Peak Reverse Voltage | Unit |
|-------------|----------------------------------------------|--------------------------------------------------|------|
|             |                                              |                                                  | V    |
|             |                                              |                                                  |      |
| MMD70E200X  | 2000                                         | 2100                                             |      |

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

| Symbol     | Parameter/Test Conditions            |                                                       | Values      | Unit                  |
|------------|--------------------------------------|-------------------------------------------------------|-------------|-----------------------|
| $I_D$      | Output Current(D.C.)                 | Three phase, full wave, $T_C=95^{\circ}\text{C}$      | 70          | A                     |
| $I_{FSM}$  | Non-Repetitive Surge Forward Current | 1/2 cycle, 50HZ, peak value, $T_J=45^{\circ}\text{C}$ | 700         |                       |
|            |                                      | 1/2 cycle, 60HZ, peak value, $T_J=45^{\circ}\text{C}$ | 750         |                       |
| $I^2t$     | For Fusing                           | 1/2 cycle, 50HZ, peak value, $T_J=45^{\circ}\text{C}$ | 2.45        | $\text{KA}^2\text{S}$ |
|            |                                      | 1/2 cycle, 60HZ, peak value, $T_J=45^{\circ}\text{C}$ | 2.33        |                       |
| $P_D$      | Power Dissipation                    |                                                       | 690         | W                     |
| $T_J$      | Junction Temperature                 |                                                       | -40 to +150 | $^{\circ}\text{C}$    |
| $T_{STG}$  | Storage Temperature Range            |                                                       | -40 to +125 | $^{\circ}\text{C}$    |
| $V_{ISO}$  | Isolation Breakdown Voltage          | AC, 50Hz(R.M.S), $t=1\text{minute}$                   | 3000        | V                     |
| Torque     | Module to Sink                       | Recommended (M5)                                      | 2.5~5       | Nm                    |
| Torque     | Module Electrodes                    | Recommended (M5)                                      | 2.5~5       | Nm                    |
| $R_{thJC}$ | Junction to Case Thermal Resistance  | per diode                                             | 1.1         | K /W                  |
|            |                                      | per module                                            | 0.18        |                       |
| Weight     |                                      |                                                       | 150         | g                     |

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# MMD70E200X

## 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                             | $V_R = V_{RRM}$                          |      |      | 0.5  | mA         |
|          |                                                             | $V_R = V_{RRM}, T_J = 125^\circ\text{C}$ |      |      | 10   |            |
| $V_F$    | Forward Voltage Drop                                        | $I_F = 70\text{A}$                       |      |      | 1.35 | V          |
| $V_{TO}$ | For power loss calculations only, $T_J = 125^\circ\text{C}$ |                                          |      |      | 0.95 | V          |
| $r_T$    |                                                             |                                          |      |      | 4.7  | m $\Omega$ |

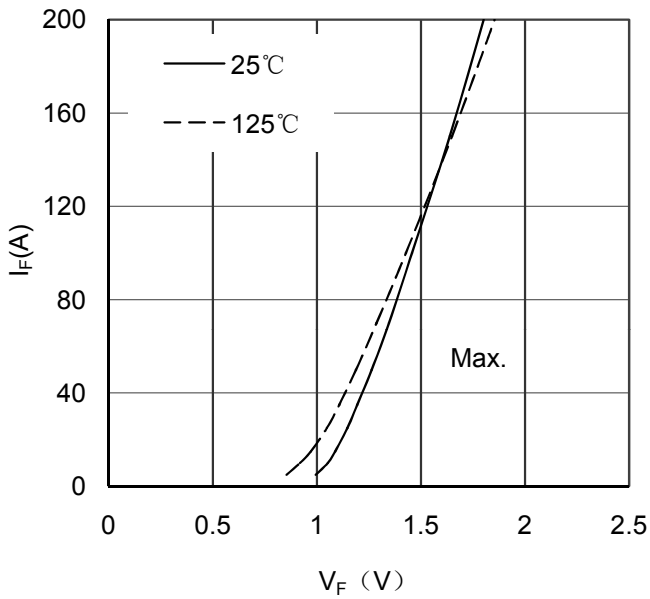


Figure 1. Forward Voltage Drop vs Forward Current



Figure 2. Power dissipation vs Output Current

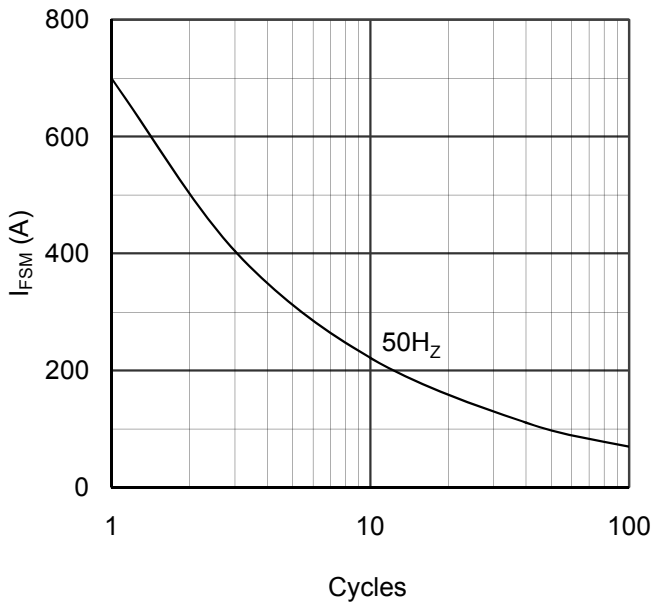


Figure 3. Max Non-Repetitive Forward Surge Current

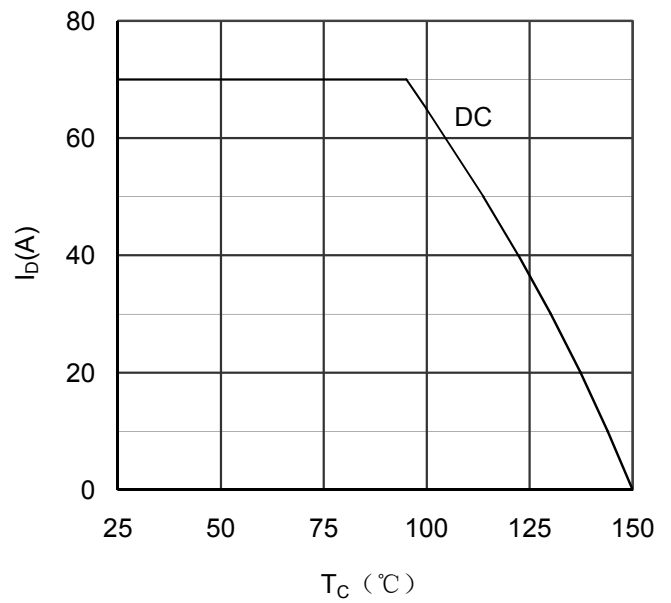
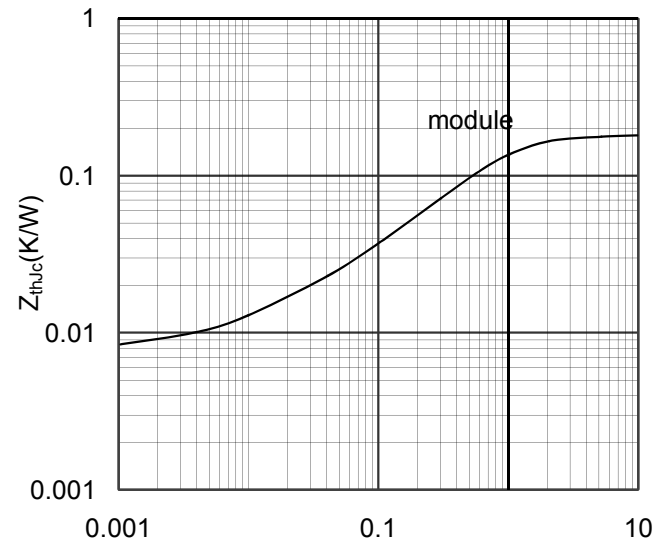
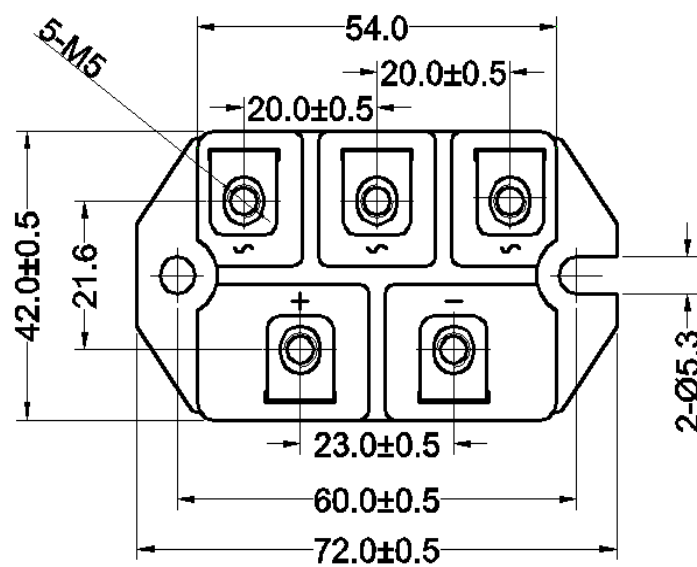
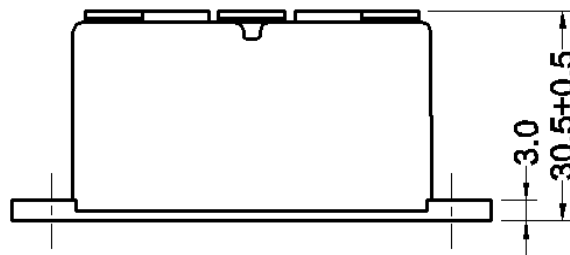


Figure 4. Output current vs Case temperature



Rectangular Pulse Duration(S)

Figure 5. Transient Thermal Impedance



Dimensions in (mm)

Figure 6. Package Outline