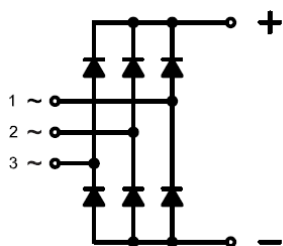


FEATURES

- 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



MODULE TYPE

| Module Type | V_{RRM} (Repetitive Peak Reverse Voltage) | V_{RSM} (Non-Repetitive Peak Reverse Voltage) | Unit |
|--------------|--|--|------|
| MMD100EC120X | 1200 | 1300 | V |
| MMD100EC140X | 1400 | 1500 | |
| MMD100EC160X | 1600 | 1700 | |
| MMD100EC180X | 1800 | 1900 | |

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, half wave, $T_c=95^{\circ}\text{C}$ | 100 | A |
| I_{FSM} | Non-Repetitive Surge Forward Current | 1/2 cycle, 50HZ, peak value $T_c=45^{\circ}\text{C}$ | 1000 | |
| | | 1/2 cycle, 60HZ, peak value $T_c=45^{\circ}\text{C}$ | 1100 | |
| I^2t | I^2t (For Fusing) | 1/2 cycle, 50HZ, peak value $T_c=45^{\circ}\text{C}$ | 5.0 | KA^2s |
| | | 1/2 cycle, 60HZ, peak value $T_c=45^{\circ}\text{C}$ | 5.1 | KA^2s |
| P_D | Power Dissipation | | 830 | 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), $t=1$ minute | 3000 | V |
| Torque | Module-to-Sink | Recommended (M5) | 2.5~5 | N.m |
| Torque | Module Electrodes | Recommended (M5) | 2.5~5 | N.m |
| $R_{th(J-C)}$ | Junction-to-Case Thermal Resistance | Per diode | 0.9 | K/W |
| | | Per module | 0.15 | |
| Weight | | | 130 | g |

MMD100EC

ELECTRICAL AND THERMAL CHARACTERISTICS $T_C=25^\circ\text{C}$ unless otherwise specified

| Symbol | Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|----------|----------------------------------|--|------|------|------|---------------|
| I_{RM} | Max.Reverse Leakage Current | $V_R = V_{RRM}$ | | | 500 | μA |
| | | $V_R = V_{RRM}, T_J = 125^\circ\text{C}$ | | | 10 | mA |
| V_F | Forward Voltage | $I_F = 100\text{A}$ | | | 1.35 | V |
| V_{T0} | For power-loss calculations only | | | | 0.92 | V |
| r_T | $T_J = 125^\circ\text{C}$ | | | | 3.8 | m Ω |

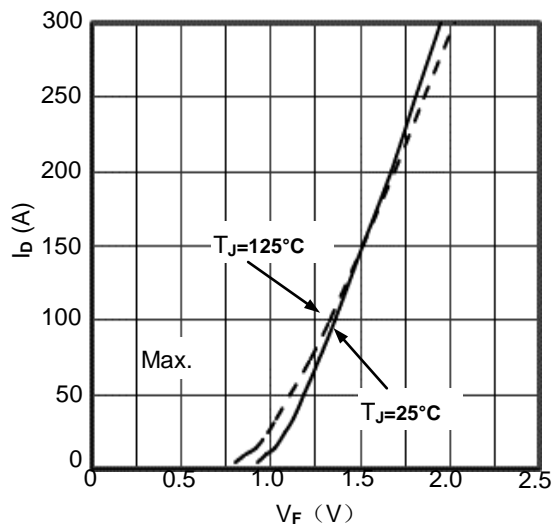


Figure1. Forward Voltage Drop vs Output Current

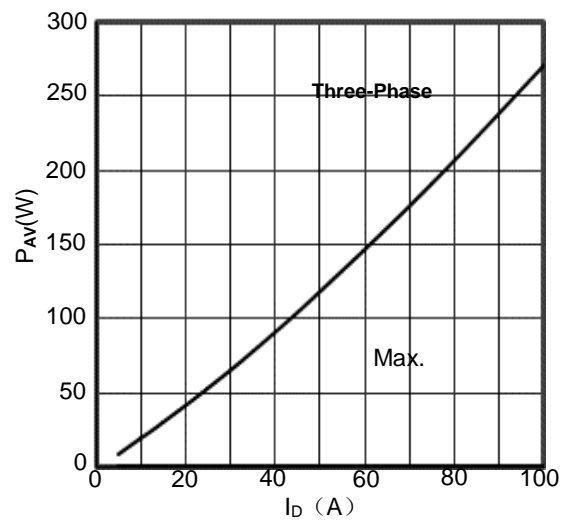


Figure2. Power dissipation vs. Output Current

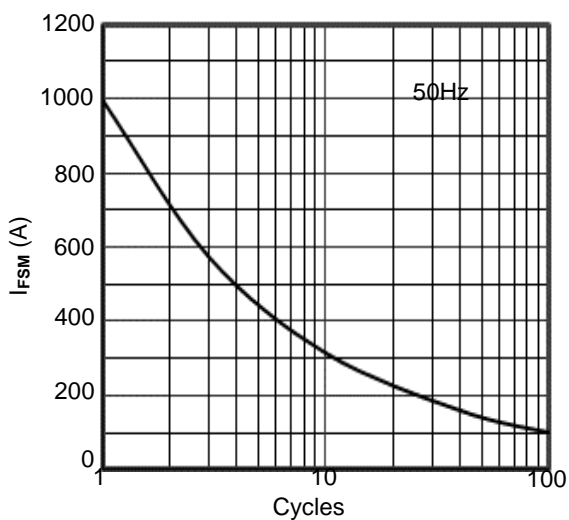


Figure3. Max Non-Repetitive Forward Surge Current

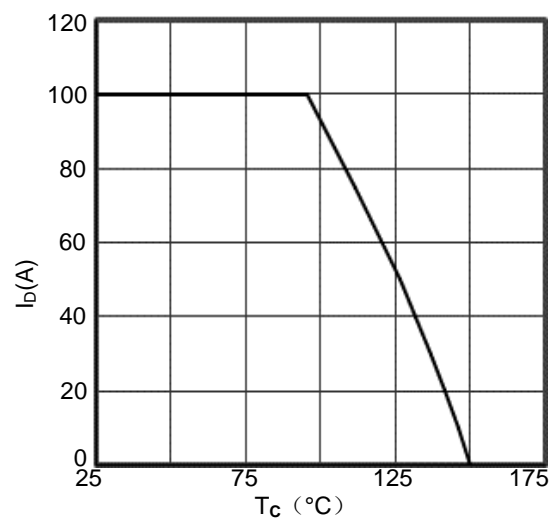


Figure4. Output Current vs. Case temperature

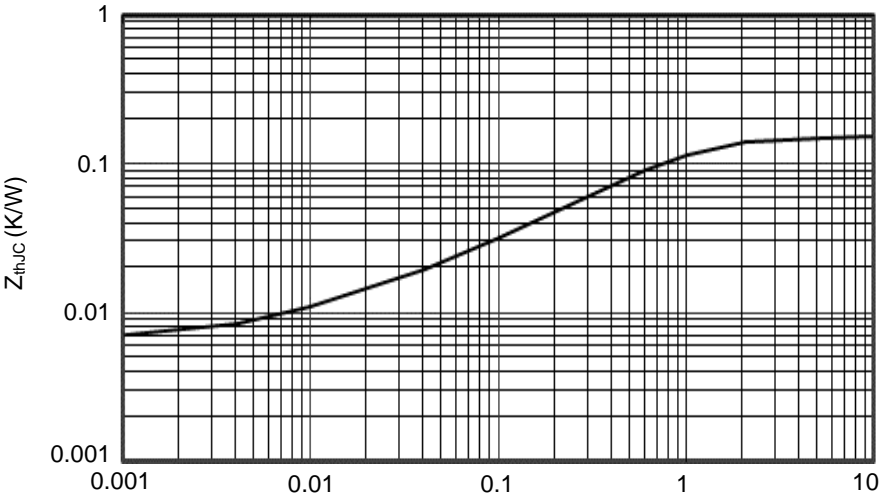


Figure5. Transient Thermal Impedance

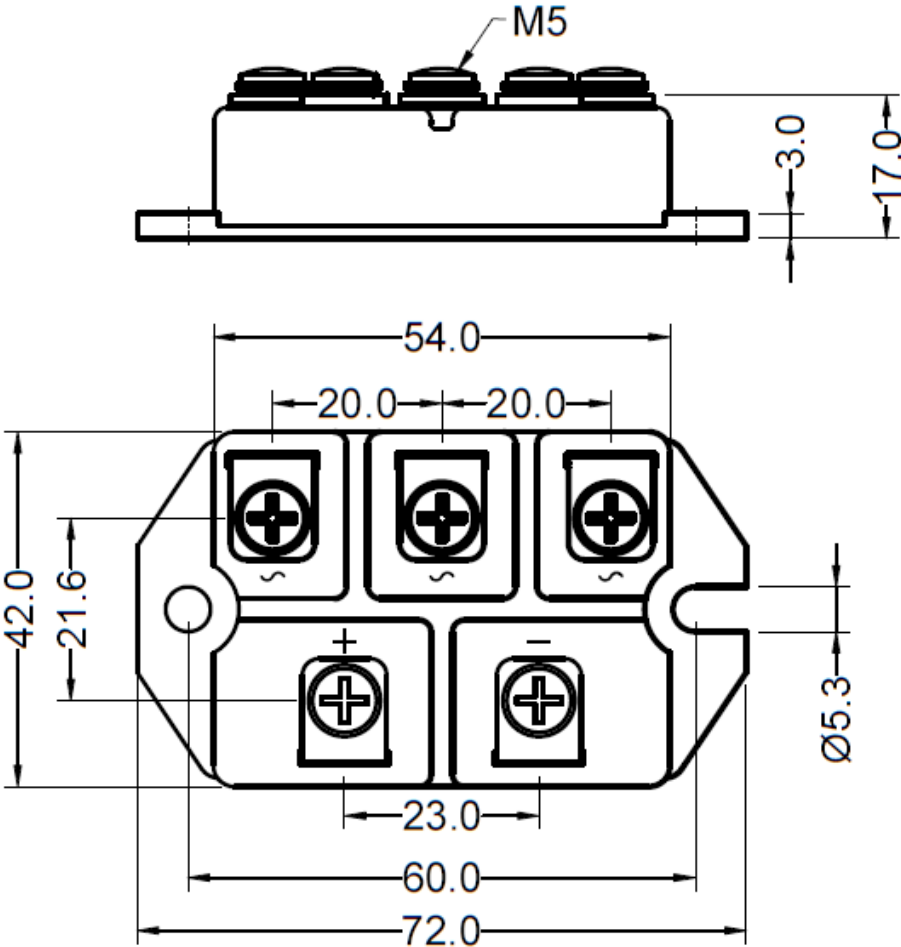


Figure6. Package Outline