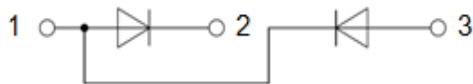


PRODUCT FEATURES

- 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



Module Type

| Module Type | Circuit Diagram | V_{RRM} (Repetitive Peak Reverse Voltage) | V_{RSM} (Non-Repetitive Peak Reverse Voltage) | Unit |
|-------------|-----------------|---|---|------|
| | B | | | |
| | MMD110A160B | 1600 | 1700 | V |

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

| Symbol | Parameter/Test Conditions | | Values | Unit |
|--------------|--|--|-------------|-------------------|
| $I_{F(AV)}$ | Average Forward Current | Single phase, half wave, 180° conduction, $T_C=85^\circ\text{C}$ | 110 | A |
| $I_{F(RMS)}$ | R.M.S. Forward Current | | 170 | |
| I_{FSM} | Non-Repetitive Surge Forward Current | 1/2 cycle, 50HZ, peak value, $T_J=45^\circ\text{C}$ | 2500 | |
| | | 1/2 cycle, 60HZ, peak value, $T_J=45^\circ\text{C}$ | 2700 | |
| I^2t | For Fusing | 1/2 cycle, 50HZ, peak value, $T_J=45^\circ\text{C}$ | 31.2 | KA ² S |
| | | 1/2 cycle, 60HZ, peak value, $T_J=45^\circ\text{C}$ | 30.2 | |
| P_D | Power Dissipation | | 410 | W |
| T_J | Junction Temperature | | -40 to +150 | °C |
| T_{STG} | Storage Temperature Range | | -40 to +125 | °C |
| V_{ISO} | Isolation Breakdown Voltage | AC, 50Hz(R.M.S), t=1minute | 3000 | V |
| Torque | Module to Sink | Recommended (M6) | 3~5 | Nm |
| Torque | Module Electrodes | Recommended (M5) | 2.5~5 | Nm |
| R_{thJC} | Junction to Case Thermal Resistance(per diode) | | 0.3 | K/W |
| Weight | | | 110 | g |

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MMD110A160B

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 | | | 1.6 | V |
| V_{TO} | For power loss calculations only, $T_J = 125^\circ\text{C}$ | | | 0.8 | V |
| r_T | | | | 2.4 | m Ω |

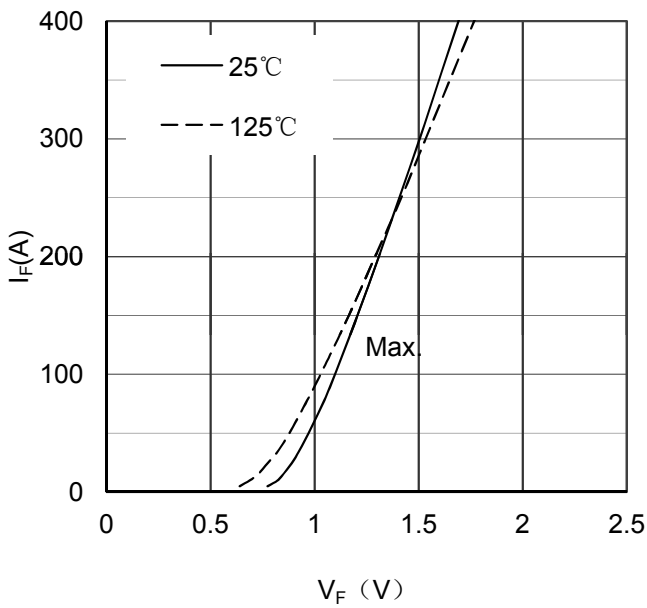


Figure 1. Forward Voltage Drop vs Forward Current

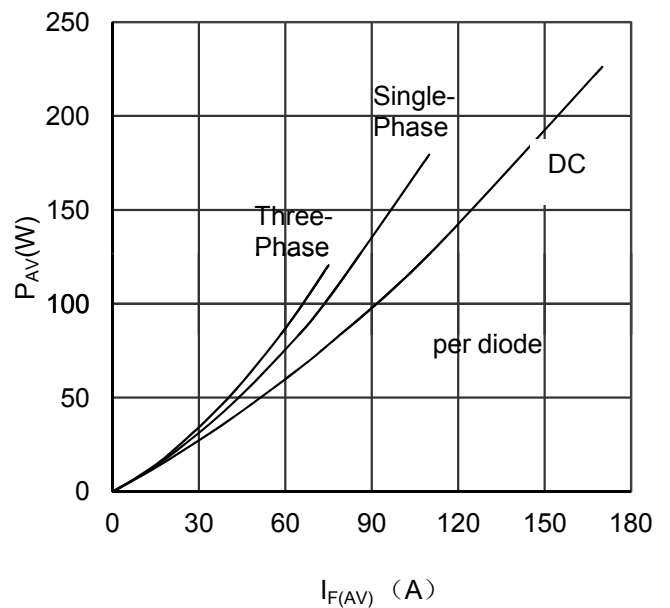


Figure 2. Power dissipation vs $I_{F(AV)}$

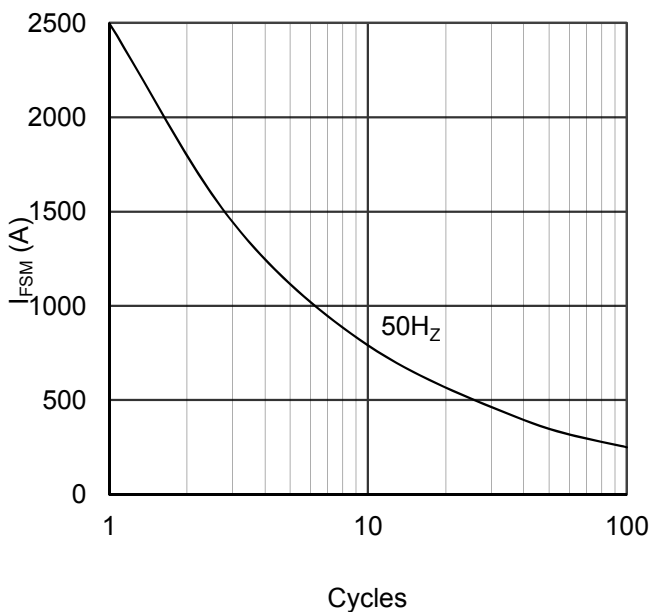


Figure 3. Max Non-Repetitive Forward Surge Current

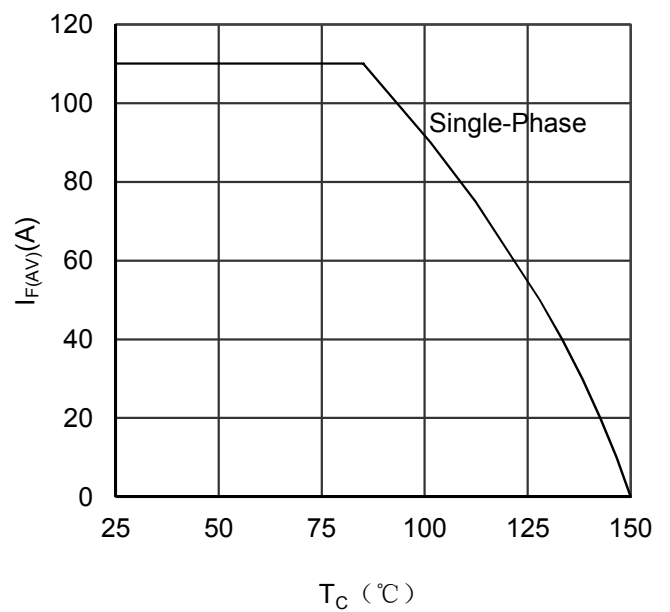


Figure 4. Average Forward Current vs Case temperature

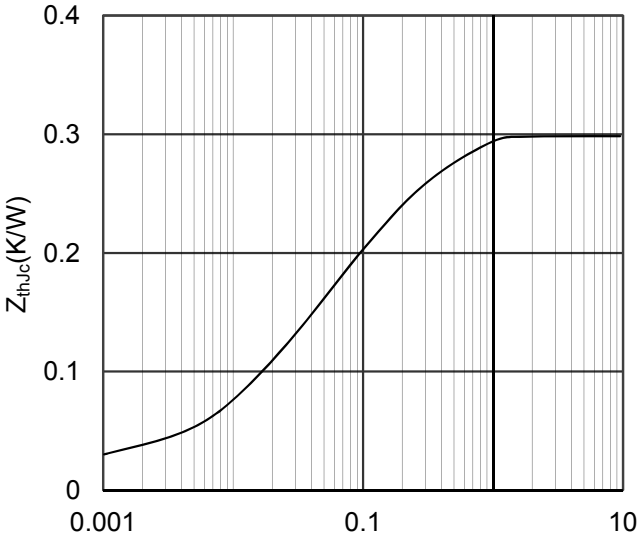


Figure 5. Transient Thermal Impedance

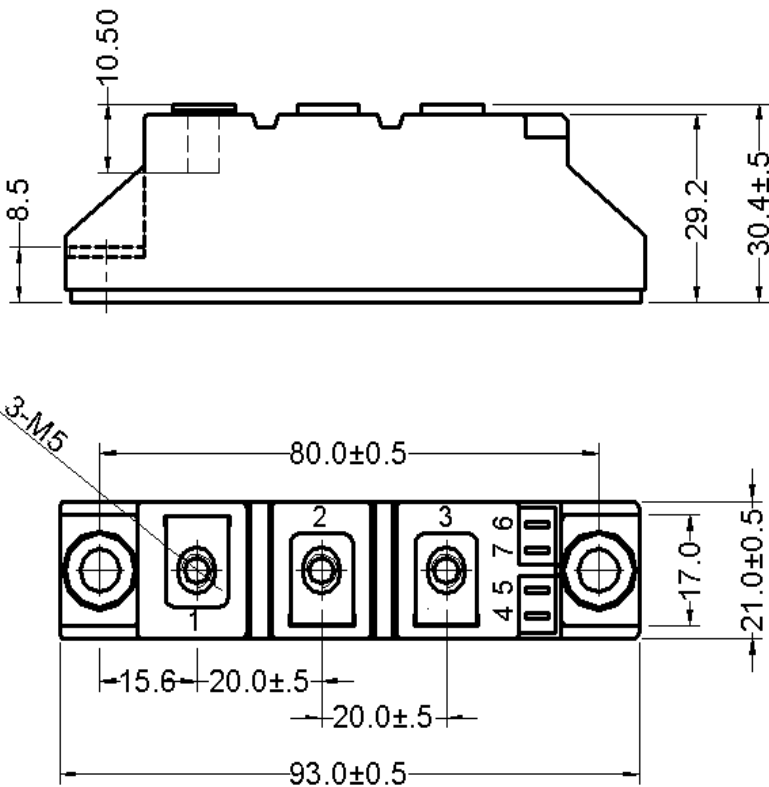


Figure 6. Package Outline