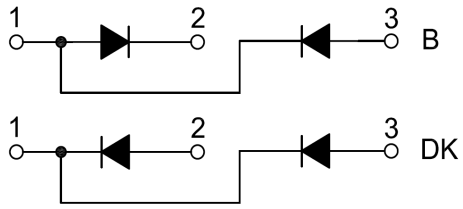
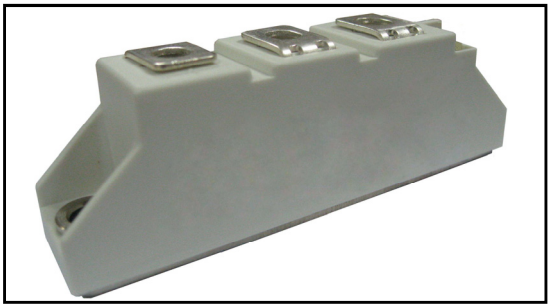
## PRODUCT FEATURES

- 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 | DK | | | |
| | MMD130A120B | MMD130A120DK | 1200 | 1300 | V |
| | MMD130A140B | MMD130A140DK | 1400 | 1500 | |
| | MMD130A160B | MMD130A160DK | 1600 | 1700 | |
| | MMD130A180B | MMD130A180DK | 1800 | 1900 | |

## ABSOLUTE MAXIMUM RATINGS

*$T_C$=25°C unless otherwise specified*

| Symbol | Parameter/Test Conditions | | Values | Unit |
|---|---|---|---|---|
| $I_{F(AV)}$ | Average Forward Current | Single phase, half wave, 180°conduction, Tc= 95°C | 130 | A |
| $I_{F(RMS)}$ | R.M.S. Forward Current | Single phase, half wave, 180°conduction, Tc =95°C | 204 | |
| $I_{FSM}$ | Non-Repetitive Surge Forward Current | 1/2 cycle, 50HZ, peak value Tc =45°C | 3450 | |
| | | 1/2 cycle, 60HZ, peak value, Tc =45°C | 3750 | |
| $I^2t$ | For Fusing | 1/2 cycle, 50HZ, peak value Tc =45°C | 59.5 | $KA^2S$ |
| | | 1/2 cycle, 60HZ, peak value, Tc =45°C | 58.3 | |
| $P_D$ | Power Dissipation | | 500 | 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 | N.m |
| Torque | Module Electrodes | Recommended（M5） | 2.5～5 | N.m |
| $R_{th(J-C)}$ | Junction-to-Case Thermal Resistance | | 0.25 | K /W |
| Weight | | | 110 | g |



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## ELECTRICAL CHARACTERISTICS

*$T_C$ =25°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°C | | | 10 | |
| $V_F$ | Forward Voltage Drop | $I_F$=400A | | | 1.5 | V |
| $V_{TO}$ | For power-loss calculations only , $T_J$ = 125°C | | | | 0.85 | V |
| $r_T$ | | | | | 1.6 | mΩ |

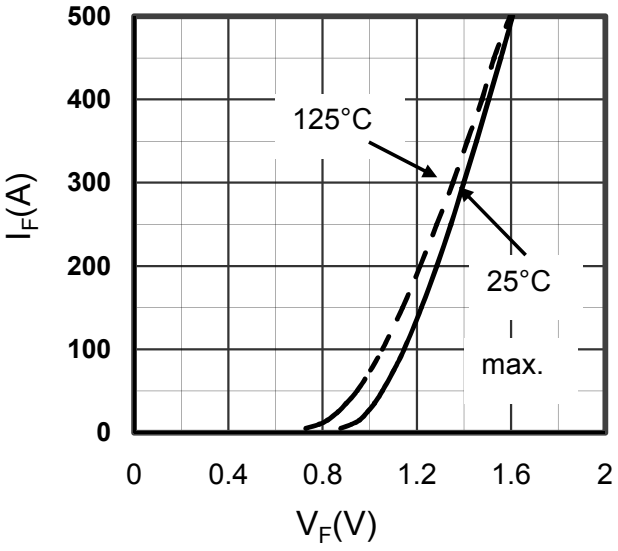



**Figure1. Forward Voltage Drop vs Forward Current**

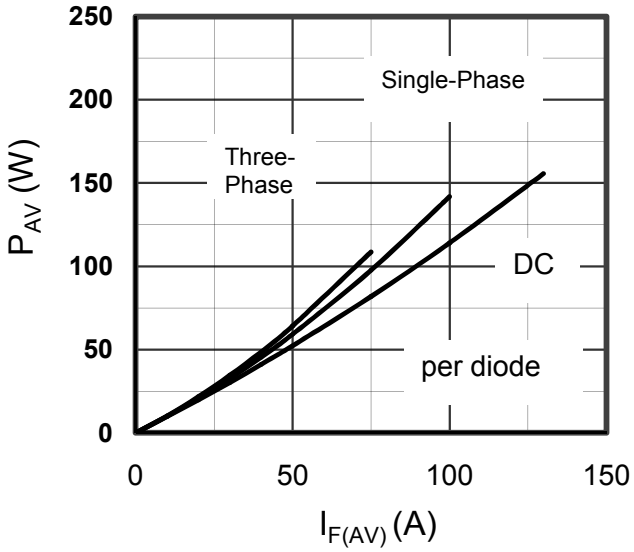



**Figure2. Power dissipation vs. $I_{F(AV)}$**

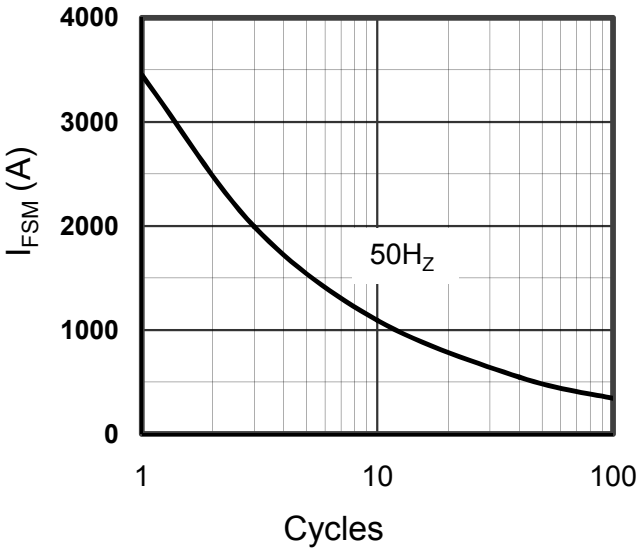



**Figure3. Max Non-Repetitive Forward Surge Current**

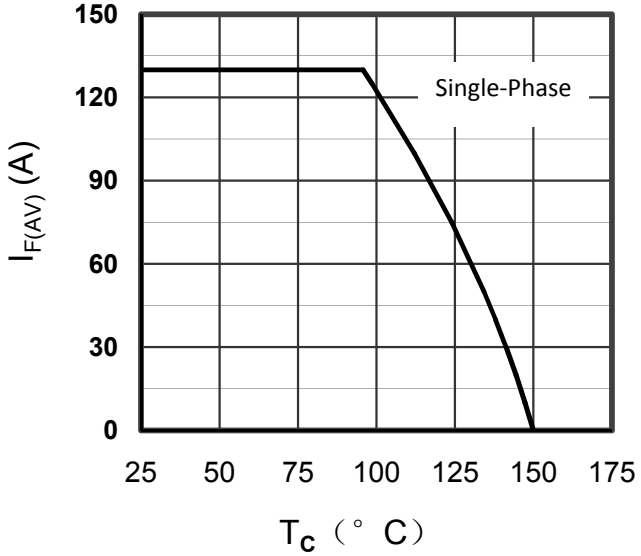



**Figure4. Forward current vs.Case temperature**

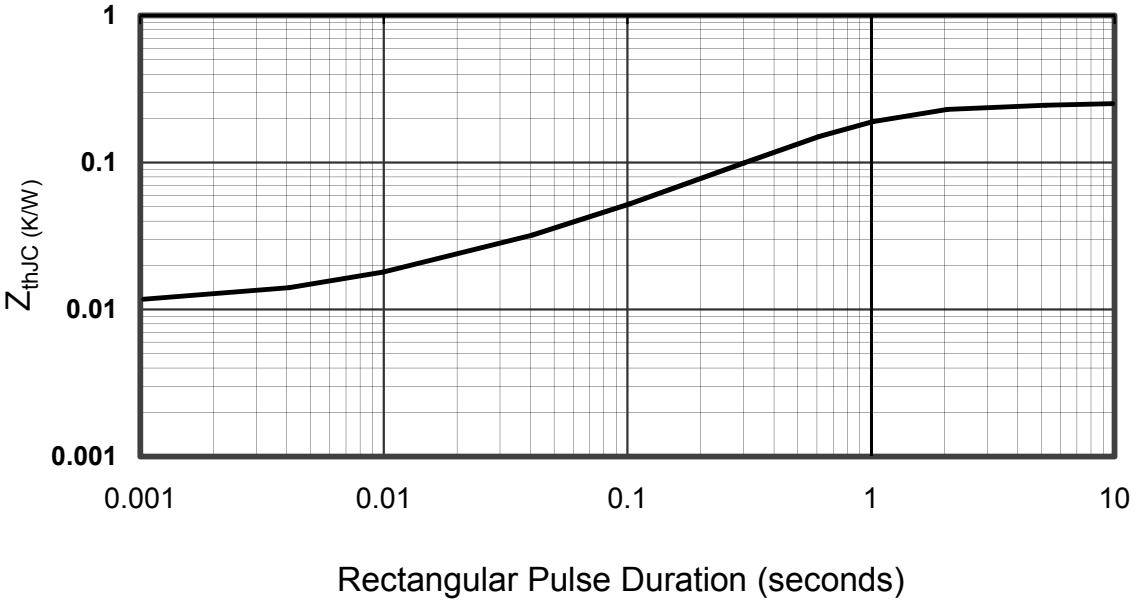
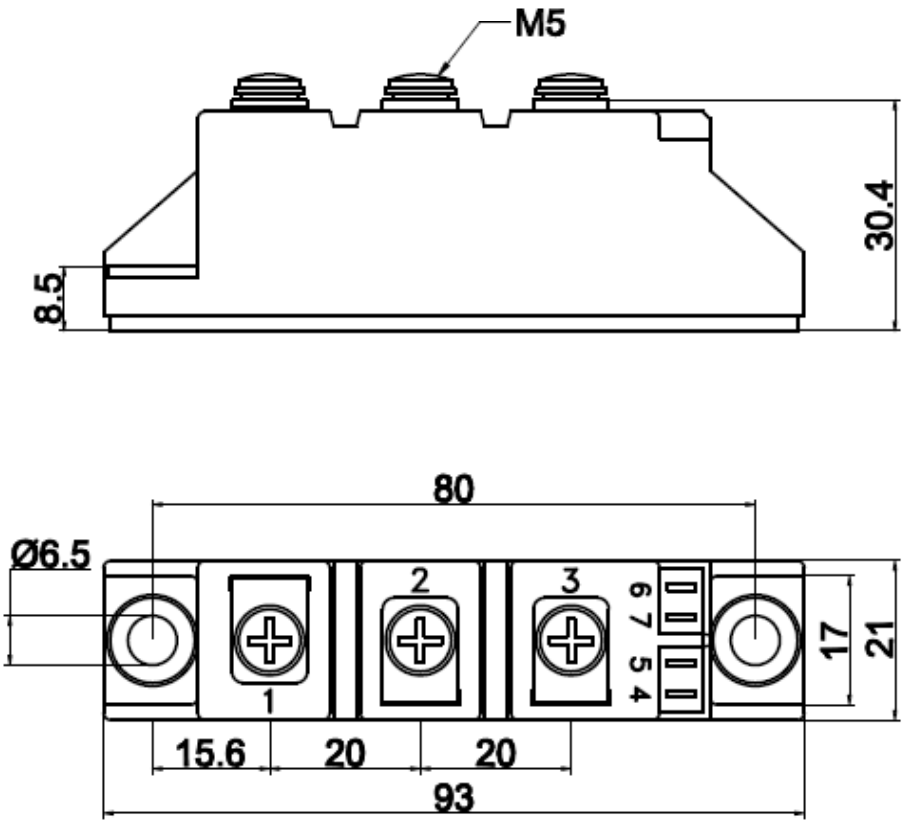



**Figure5. Transient Thermal Impedance**




**Dimensions in Millimeters and (Inchs)**
**Figure6. Package Outline**