



**RUNAU**

**MDC1200 MDA1200 MDK1200 MDX1200**

Jiangsu Runau Electronics Manufacturing Co.,Ltd

1200-2000V<sub>RRM</sub>

**GENERAL PURPOSE DIODE MODULE**

**Features:**

- . Electrical insulation between chip and base plate, 2500V AC insulation
- . Compact structure
- . Excellent temperature characteristics and power cycling capability
- . Small size & light weight



**Typical application:**

- . AC / DC motor control
- . Various rectification power supplies
- . Excellent temperature characteristics and power cycling capability
- . Frequency converter

**ELECTRICAL CHARACTERISTICS AND RATINGS**

| Symbol               | Parameter  | Conditions   | Tj(°C) | Data |     |       | Unit                             |
|----------------------|--|--|--------|------|-----|-------|----------------------------------|
|                      |  |  |        | Min  | Typ | Max   |                                  |
| I <sub>T(AV)</sub>   | Mean on-state current  | Sinewave 180°,50Hz<br>Single side cooling, Tc=85°C   | 150    |      |     | 1200  | A                                |
| I <sub>F(RMS)</sub>  | RMS on-state current   |  | 150    |      |     | 1884  | A                                |
| V <sub>RRM</sub>     | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | V <sub>DRM</sub> &V <sub>RRM</sub> tp=10ms<br>V <sub>DSM</sub> &V <sub>RSM</sub> =V <sub>DRM</sub> &V <sub>RRM</sub> +200V | 150    | 800  |     | 1800  | V                                |
| I <sub>RRM</sub>     | Repetitive peak off-state current                                    | V <sub>DM</sub> = V <sub>DRM</sub>   | 150    |      |     | 45    | mA                               |
| I <sub>RRM</sub>     | Repetitive peak reverse current                                      | V <sub>RM</sub> = V <sub>RRM</sub>   |        |      |     |       |                                  |
| I <sub>FSM</sub>     | Surge on-state current   | 10ms bottom width, half sine wave<br>V <sub>R</sub> =0.6V <sub>RRM</sub>   | 150    |      |     | 34    | KA                               |
| I <sup>2</sup> t     | I squared t  |  |        |      |     | 5780  | A <sup>2</sup> s*10 <sup>3</sup> |
| V <sub>FO</sub>      | On-state threshold voltage   |  | 150    |      |     | 0.71  | V                                |
| r <sub>F</sub>       | Slope resistance   |  |        |      |     | 0.11  | mΩ                               |
| V <sub>FM</sub>      | Peak on-state voltage  | I <sub>FM</sub> =3000A   | 25     |      |     | 1.45  | V                                |
| R <sub>th(j-c)</sub> | Thermal impedance(junction to case)                                  | 180°sine wave,<br>Single side heat dissipation   |        |      |     | 0.040 | °C /W                            |
| R <sub>th(c-h)</sub> | Thermal impedance(case to heatsink)                                  | 180°sine wave,<br>Single side heat dissipation   |        |      |     | 0.020 | °C /W                            |
| V <sub>iso</sub>     | Insulation voltage   | 50Hz,R.M.S,t=1min,I <sub>iso</sub> :1mA(MAX)   |        | 2500 |     |       | V                                |
| F <sub>m</sub>       | Electrode mounting torque (M12)                                      |  |        |      |     | 14    | N·m                              |
|                      | Base plate mounting torque (M8)                                      |  |        |      |     | 12    | N·m                              |
| T <sub>stg</sub>     | Storage temperature  |  |        | -40  |     | 125   | °C                               |
| W <sub>t</sub>       | Weight   |  |        |      |     | 4050  | g                                |

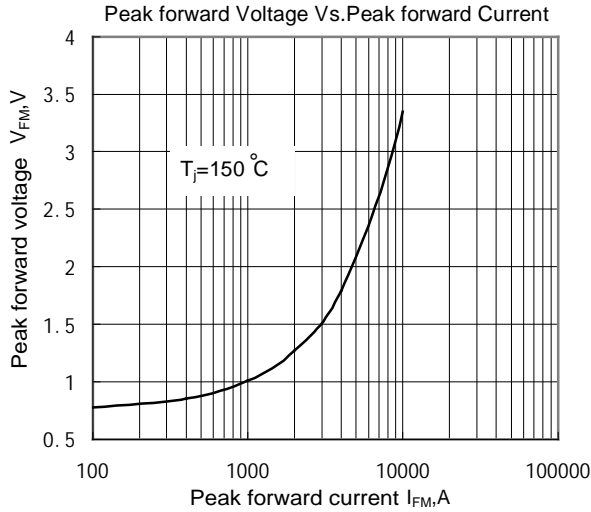


Fig.1 Forward Volt-ampere Characteristic Curve

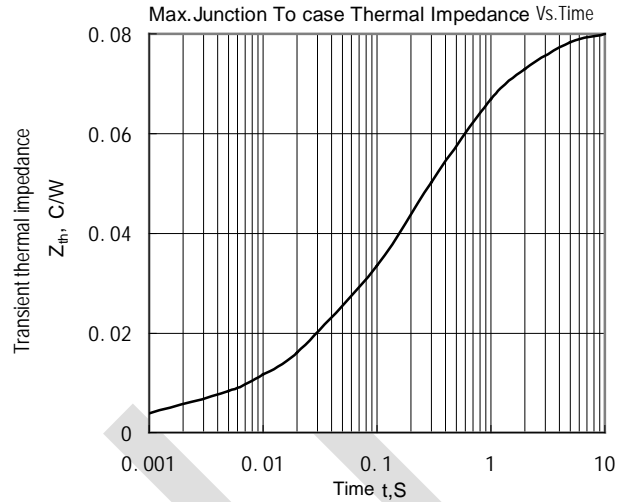


Fig.2 Transient Thermal Impedance Curve

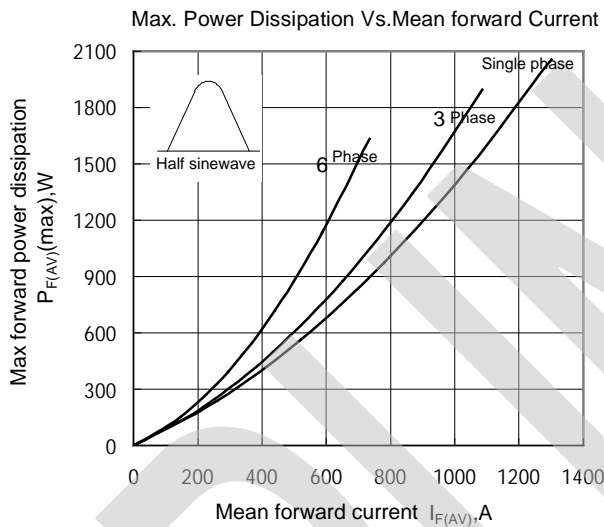


Fig.3 Max Power Dissipation Vs. Mean Forward Current

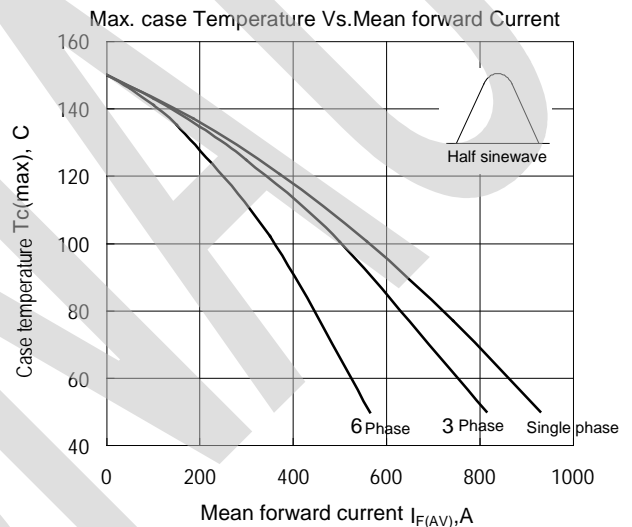


Fig.4 Max Case Temperature Vs. Mean Forward Current

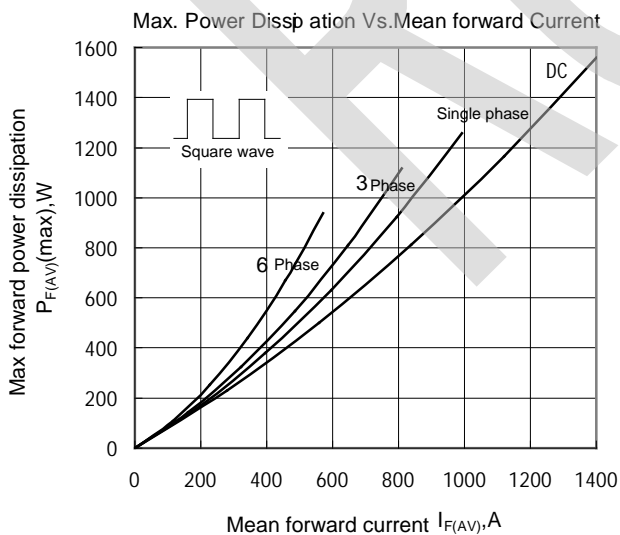


Fig.5 Max Power Dissipation Vs. Mean Forward Current

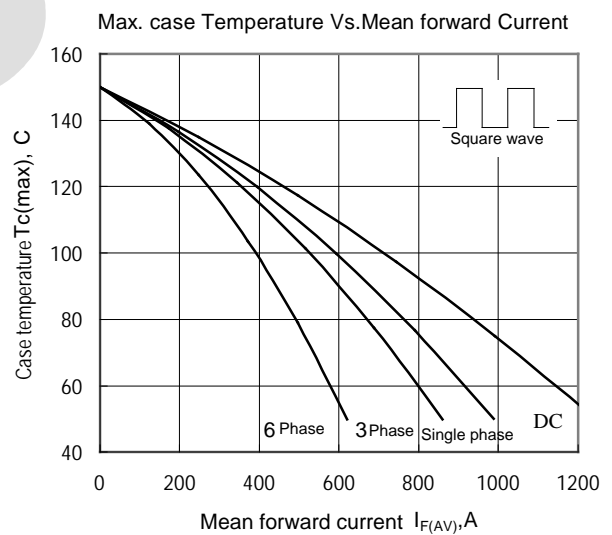


Fig.6 Max Case Temperature Vs. Mean Forward Current

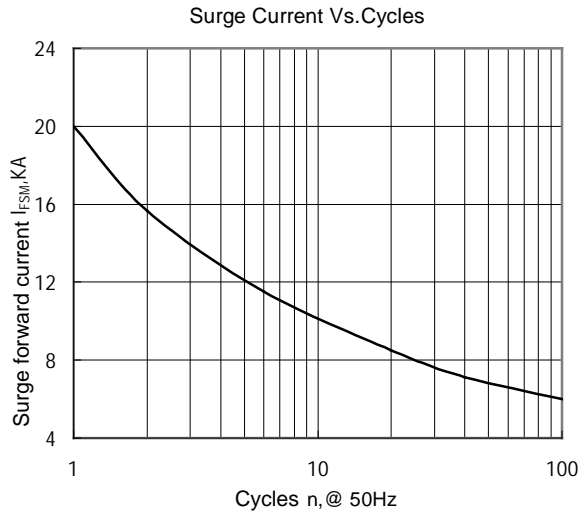


Fig.7 Surge Current Vs.Cycles

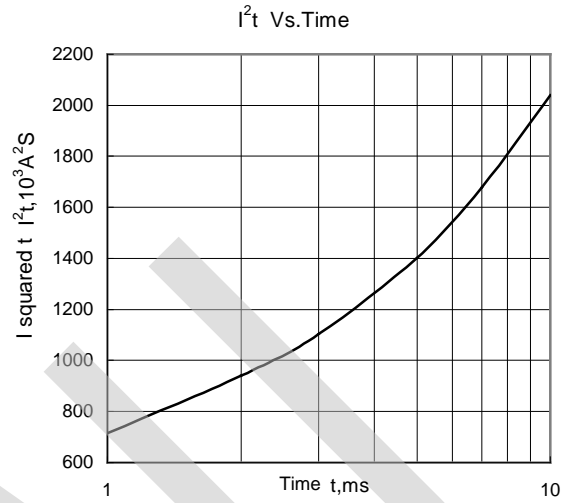
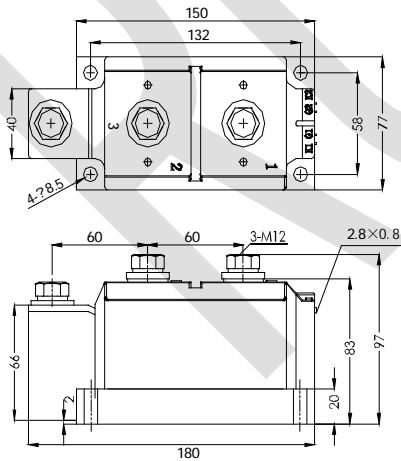


Fig.8 I<sup>2</sup>t Vs. Time

**OUTLINE**



**M477F**

