

## 产品规格书

### Specification of products

产品名称:可控硅模块

产品型号: MFC90A-T03

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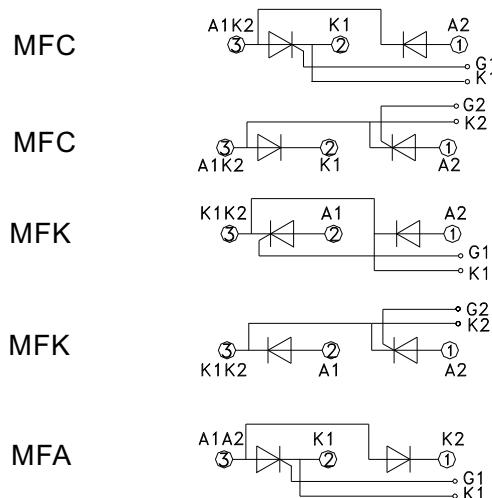
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|     |     |    |
|-----|-----|----|
| 拟制  | 审核  | 核准 |
| 林益龙 | 曹剑龙 | 宗瑞 |

| SYMBOL                                   | CHARACTERISTIC   | TEST CONDITIONS   | T <sub>j</sub> (°C) | VALUE |      |       | UNIT                             |
|--|--|---|---------------------|-------|------|-------|----------------------------------|
|  |  |   |                     | Min   | Type | Max   |                                  |
| I <sub>T(AV)</sub><br>I <sub>F(AV)</sub> | Mean on-state current  | 180° half sine wave 50Hz<br>Single side cooled, T <sub>C</sub> =85°C  | 125                 |       |      | 90    | A                                |
| I <sub>T(RMS)</sub>                      | RMS on-state current   | Single side cooled, T <sub>C</sub> =85°C  | 125                 |       |      | 141   | A                                |
| V <sub>DRM</sub><br>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<br>respectively | 125                 | 600   |      | 1600  | V                                |
| I <sub>DRM</sub><br>I <sub>RRM</sub>     | Repetitive peak current  | at V <sub>DRM</sub><br>at V <sub>RRM</sub>  | 125                 |       |      | 10    | mA                               |
| I <sub>TSM</sub>                         | Surge on-state current   | 10ms half sinewave  | 125                 |       |      | 2.00  | KA                               |
| I <sup>2</sup> t                         | I <sup>2</sup> T for fusing coordination                             | V <sub>R</sub> =60%V <sub>RRM</sub>   |                     |       |      | 20.4  | A <sup>2</sup> s*10 <sup>3</sup> |
| V <sub>TO</sub>                          | Threshold voltage  |   | 125                 |       |      | 0.8   | V                                |
| r <sub>T</sub>                           | On-state slop resistance   |   |                     |       |      | 3.01  | mΩ                               |
| V <sub>TM</sub>                          | Peak on-state voltage  | I <sub>TM</sub> =270A   | 125                 |       |      | 1.4   | V                                |
| dv/dt                                    | Critical rate of rise of off-state voltage                           | V <sub>DM</sub> =67%V <sub>DRM</sub>  | 125                 |       |      | 800   | V/μs                             |
| di/dt                                    | Critical rate of rise of on-state current                            | From 67%V <sub>DRM</sub><br>to 270A, Gate source 1.5A<br>t <sub>r</sub> ≤ 0.5 μs Repetitive   | 125                 |       |      | 100   | A/μs                             |
| I <sub>GT</sub>                          | Gate trigger current   |   |                     | 20    |      | 100   | mA                               |
| V <sub>GT</sub>                          | Gate trigger voltage   | V <sub>A</sub> =12V, I <sub>A</sub> =1A   | 25                  | 0.7   |      | 2.0   | V                                |
| I <sub>H</sub>                           | Holding current  |   |                     | 20    |      | 100   | mA                               |
| V <sub>GD</sub>                          | Non-trigger gate voltage   | At 67%V <sub>DRM</sub>  | 125                 |       |      | 0.2   | V                                |
| R <sub>th(j-c)</sub>                     | Thermal resistance<br>Junction to heatsink                           | At 180° sine Single side cooled   |                     |       |      | 0.280 | °C /W                            |
| V <sub>iso</sub>                         | Isolation voltage  | 50Hz, RM. S, t=1min, I <sub>iso</sub> : 1mA (MAX)   |                     | 2500  |      |       | V                                |
| F <sub>m</sub>                           | Thermal connection torque (M5)                                       |   |                     |       |      | 4.0   | N.m                              |
|  | Mounting torque (M6)   |   |                     |       |      | 5.0   | N.m                              |
| T <sub>stg</sub>                         | Stored temperature   |   |                     | -40   |      | 140   | °C                               |
| W <sub>t</sub>                           | Weight   |   |                     |       |      | 154   | g                                |
| Outline                                  |  |   |                     |       |      |       |                                  |

### OUTLINE DRAWING & CIRCUIT DIAGRAM



### Rating and Characteristic

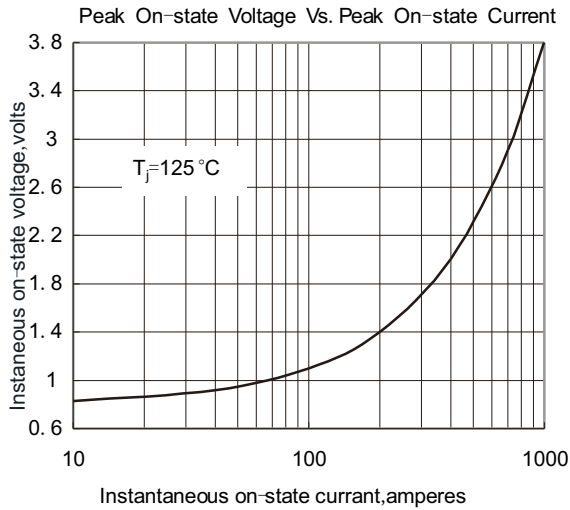


Fig. 1

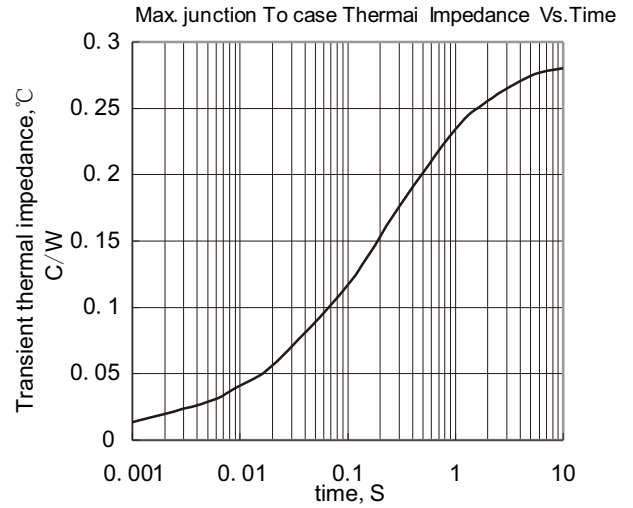


Fig. 2

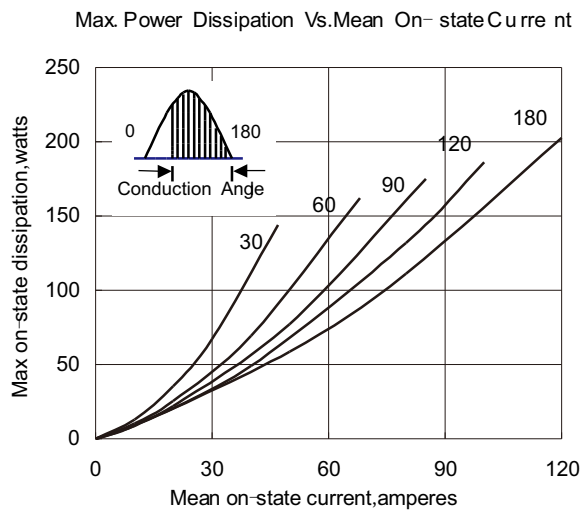


Fig. 3

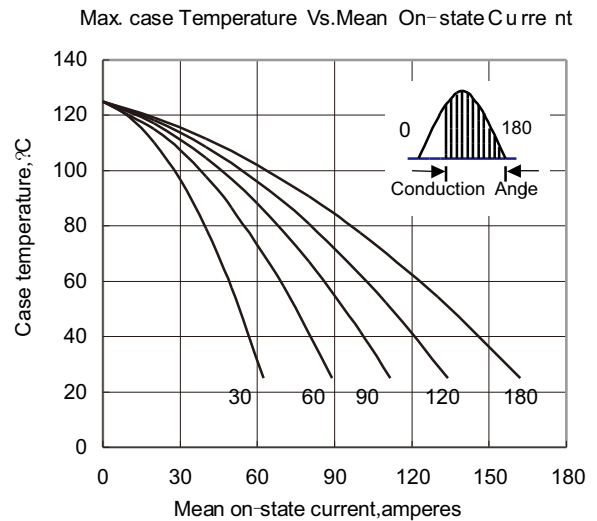


Fig. 4

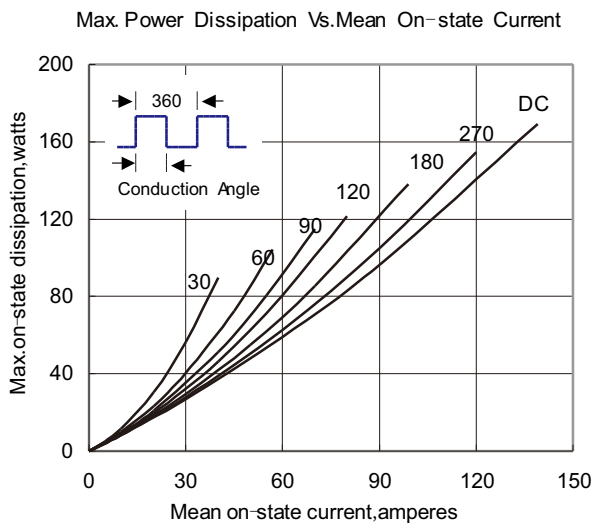


Fig. 5

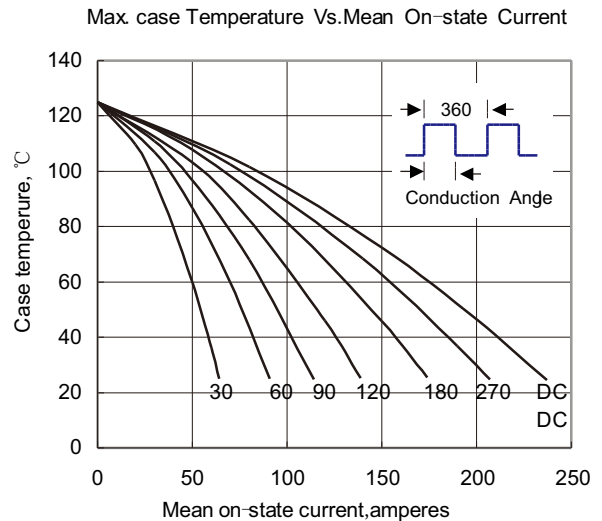


Fig. 6

## Rating and Characteristic

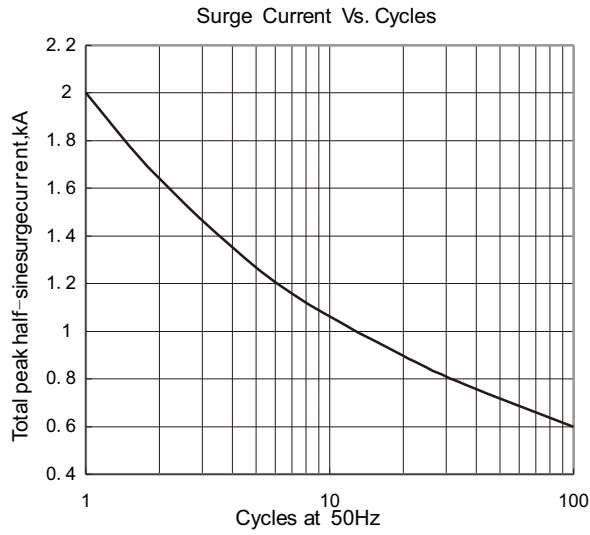


Fig. 7

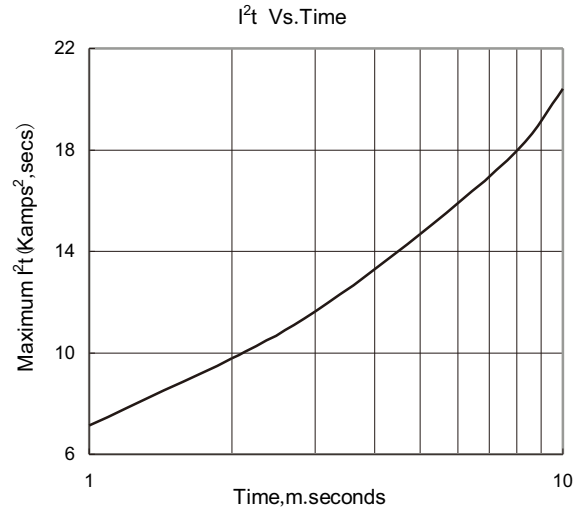


Fig. 8

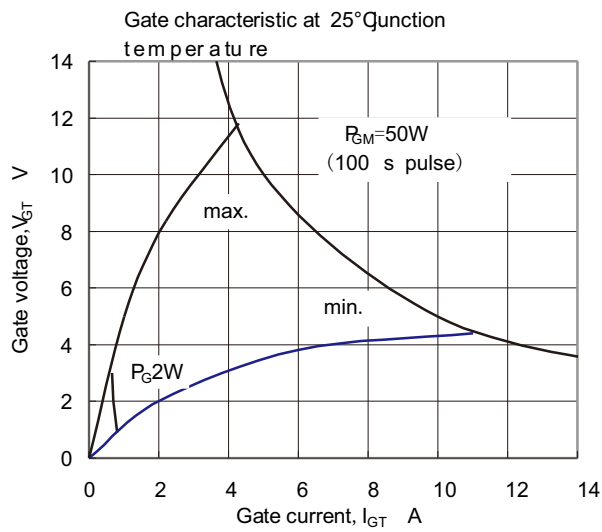


Fig. 9

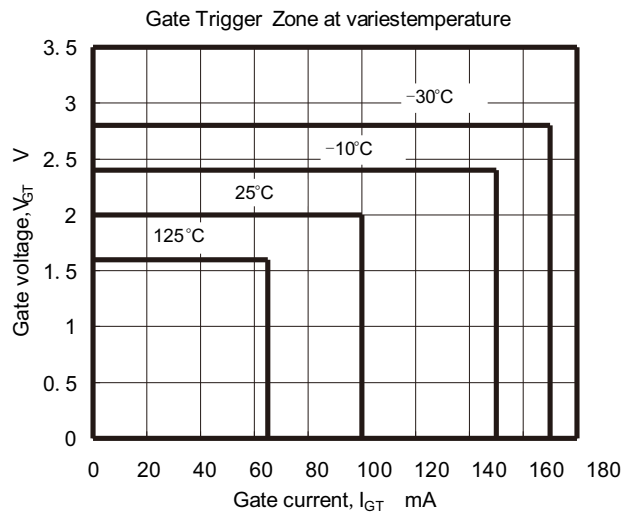


Fig. 10

