

#### Features

- Center amplifying gate
- Metal case with ceramic insulator
- Low on-state and switching losses

#### Typical Applications

- AC controllers
- DC and AC motor control
- Controlled rectifiers

$I_{T(AV)}$       **2300 A**  
 $V_{DRM}/V_{RRM}$     **4500-5500V**  
 $I_{TSM}$             **32 kA**  
 $I^2t$                 **5120 10<sup>3</sup>A<sup>2</sup>S**



| SYMBOL                               | CHARACTERISTIC   | TEST CONDITIONS  |                      | T <sub>j</sub> (°C) | VALUE |      |       | UNIT                             |
|--------------------------------------|--|--|----------------------|---------------------|-------|------|-------|----------------------------------|
|                                      |  |  |                      |                     | Min   | Type | Max   |                                  |
| I <sub>T(AV)</sub>                   | Mean on-state current  | 180° half sine wave 50Hz<br>Double side cooled,                                  | T <sub>C</sub> =70°C | 125                 |       |      | 2300  | A                                |
| V <sub>DRM</sub><br>V <sub>RRM</sub> | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | tp=10ms  |                      | 125                 | 4500  |      | 5500  | 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                 |       |      | 400   | mA                               |
| I <sub>TSM</sub>                     | Surge on-state current   | 10ms half sine wave  |                      | 125                 |       |      | 32    | kA                               |
| I <sup>2</sup> t                     | I <sup>2</sup> t for fusing coordination                             | V <sub>R</sub> =0.6V <sub>RRM</sub>  |                      |                     |       |      | 5120  | A <sup>2</sup> s*10 <sup>3</sup> |
| V <sub>TO</sub>                      | Threshold voltage  |  |                      | 125                 |       |      | 1.03  | V                                |
| r <sub>T</sub>                       | On-state slope resistance  |  |                      |                     |       |      | 0.25  | mΩ□                              |
| V <sub>TM</sub>                      | Peak on-state voltage  | I <sub>TM</sub> =3000A, F=70kN   |                      | 125                 |       |      | 1.70  | V                                |
| dv/dt                                | Critical rate of rise of off-state voltage                           | V <sub>DM</sub> =0.67V <sub>DRM</sub>  |                      | 125                 |       |      | 2000  | V/μs                             |
| di/dt                                | Critical rate of rise of on-state current                            | V <sub>DM</sub> = 67%V <sub>DRM</sub> to 3000A,<br>Gate pulse tr ≤0.5μs IGM=1.5A |                      | 125                 |       |      | 200   | A/μs                             |
| Q <sub>rr</sub>                      | Recovery charge  | I <sub>TM</sub> =2000A, tp=2000μs, di/dt=-5A/μs,<br>V <sub>R</sub> =50V          |                      | 125                 |       | 4500 |       | μC                               |
| I <sub>GT</sub>                      | Gate trigger current   | V <sub>A</sub> =12V, I <sub>A</sub> =1A  |                      | 25                  | 30    |      | 300   | mA                               |
| V <sub>GT</sub>                      | Gate trigger voltage   |  |                      |                     | 0.8   |      | 3.0   | V                                |
| I <sub>H</sub>                       | Holding current  |  |                      |                     | 25    |      | 250   | mA                               |
| V <sub>GD</sub>                      | Non-trigger gate voltage   | V <sub>DM</sub> =67%V <sub>DRM</sub>   |                      | 125                 | 0.3   |      |       | V                                |
| R <sub>th(j-c)</sub>                 | Thermal resistance<br>Junction to case                               | At 180° sine' double side cooled<br>Clamping force 70.0kN                        |                      |                     |       |      | 0.009 | °C/W                             |
| R <sub>th(c-hs)</sub>                | Thermal resistance<br>case to heatsink                               |  |                      |                     |       |      | 0.002 | °C/W                             |
| F <sub>m</sub>                       | Mounting force   |  |                      |                     | 63    |      | 84    | kN                               |
| T <sub>stg</sub>                     | Stored temperature   |  |                      |                     | -40   |      | 140   | °C                               |
| W <sub>i</sub>                       | Weight   |  |                      |                     |       | 1920 |       | g                                |
| Outline                              |  |  |                      |                     |       |      |       |                                  |

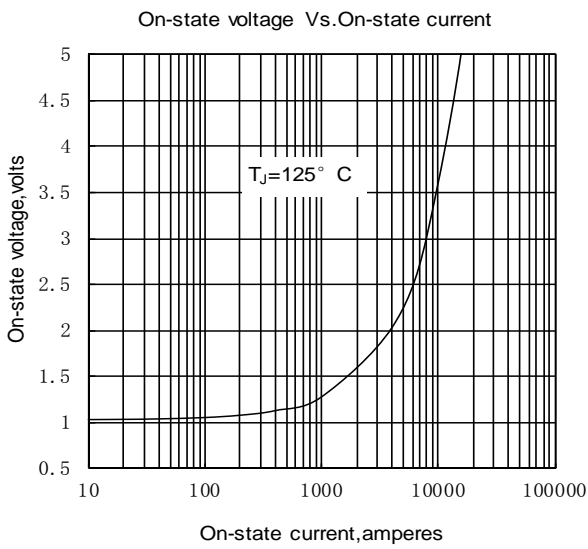


Fig.1

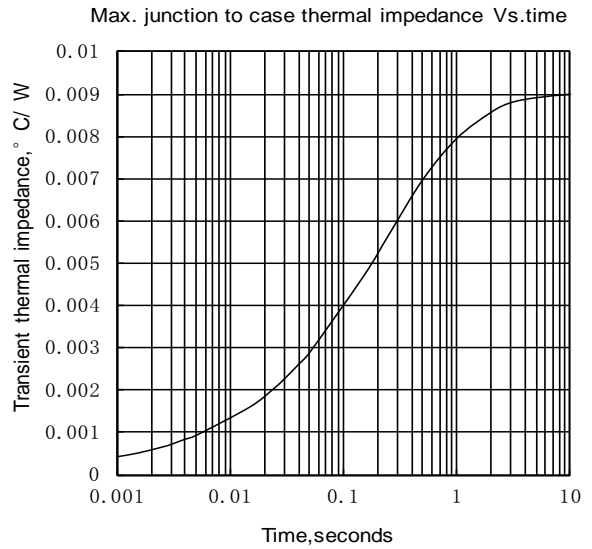


Fig.2

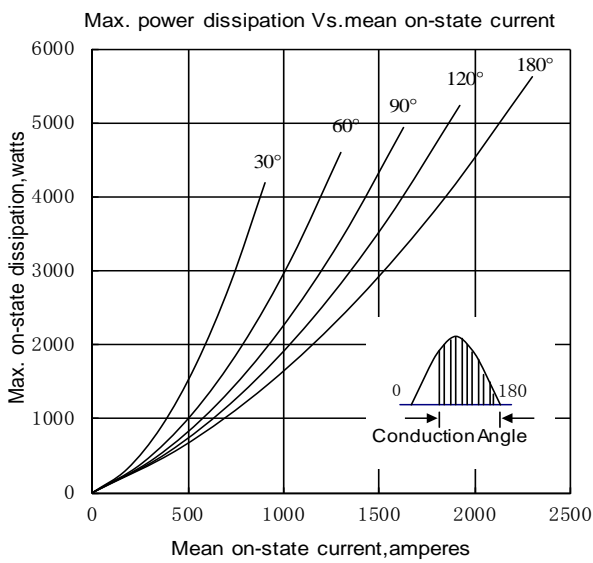


Fig.3

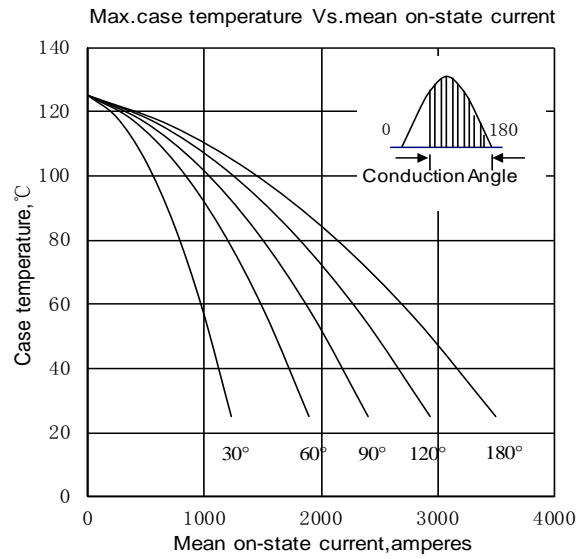


Fig.4

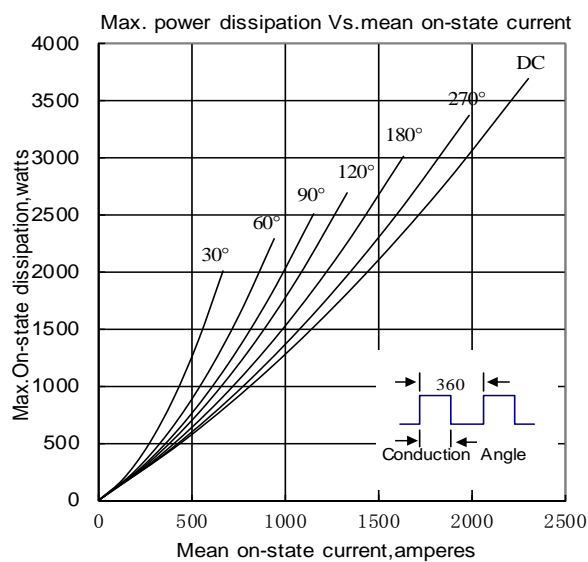


Fig.5

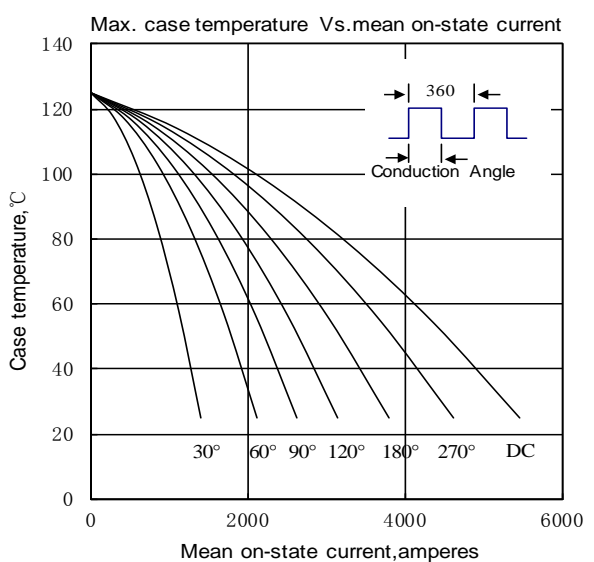
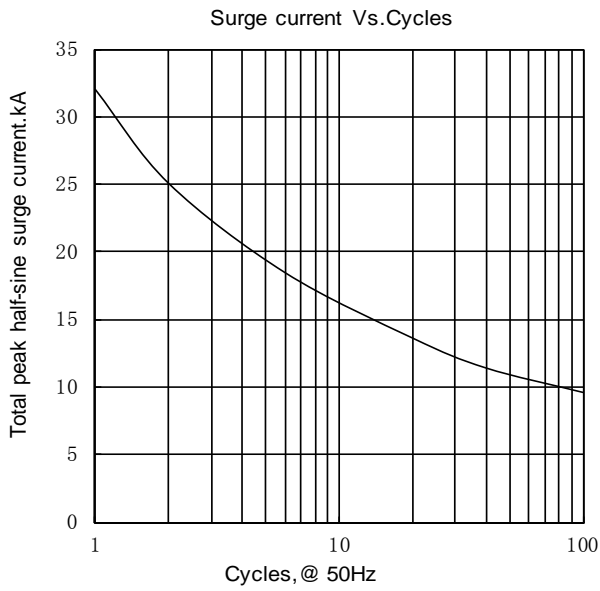
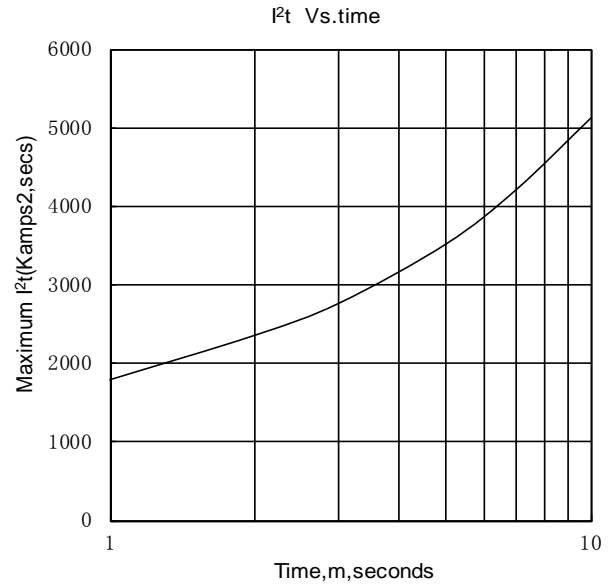


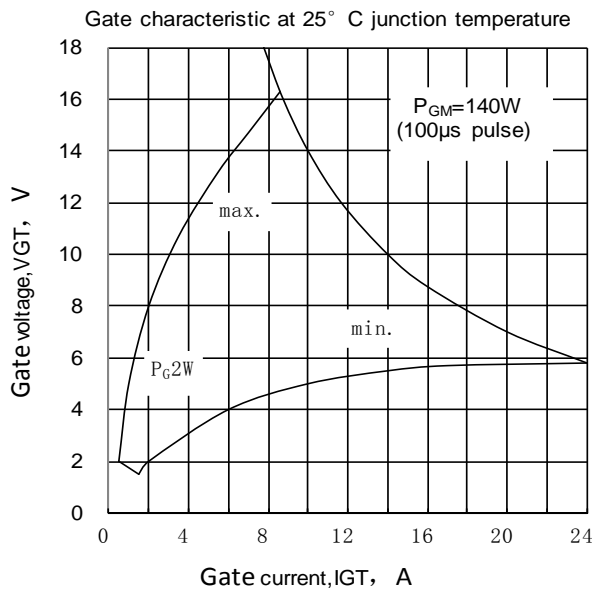
Fig.6



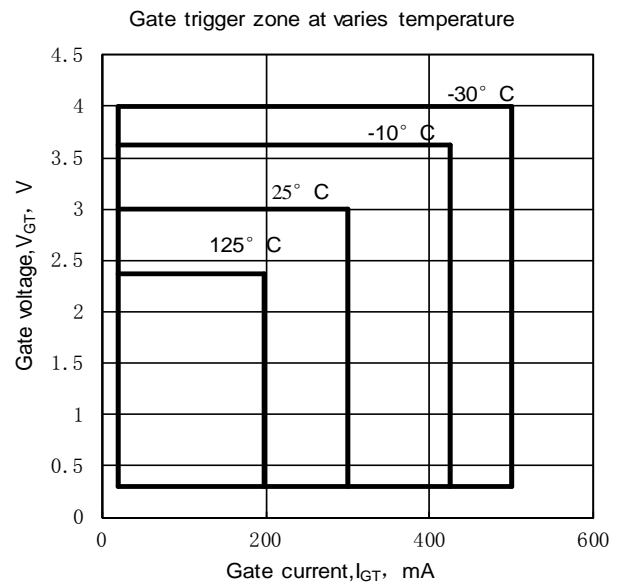
**Fig.7**



**Fig.8**



**Fig.9**



**Fig.10**

**Outline:**

