

## 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

$I_{T(AV)}$  750A  
 $V_{DRM}/V_{RRM}$  1900~3000V  
 $I_{TSM}$  10 kA  
 $I^2t$  500 10<sup>3</sup>A<sup>2</sup>S



| SYMBOL                 | CHARACTERISTIC                                                       | TEST CONDITIONS                                                                                           | T <sub>J</sub> (°C) | VALUE |      |        | UNIT                             |
|------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------|-------|------|--------|----------------------------------|
|                        |                                                                      |                                                                                                           |                     | Min   | Type | Max    |                                  |
| $I_{T(AV)}$            | Mean on-state current                                                | 180° half sine wave 50Hz<br>Double side cooled,<br>T <sub>C</sub> =70°C                                   | 125                 |       |      | 750    | A                                |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | tp=10ms                                                                                                   | 125                 | 1900  |      | 3000   | V                                |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak current                                              | at $V_{DRM}$<br>at $V_{RRM}$                                                                              | 125                 |       |      | 50     | mA                               |
| $I_{TSM}$              | Surge on-state current                                               | 10ms half sine wave                                                                                       | 125                 |       |      | 10     | kA                               |
| $I^2t$                 | I <sup>2</sup> t for fusing coordination                             | V <sub>R</sub> =0.6V <sub>RRM</sub>                                                                       |                     |       |      | 500    | A <sup>2</sup> s*10 <sup>3</sup> |
| $V_{TO}$               | Threshold voltage                                                    |                                                                                                           | 125                 |       |      | 1.20   | V                                |
| $r_T$                  | On-state slope resistance                                            |                                                                                                           |                     |       |      | 0.78   | mΩ                               |
| $V_{TM}$               | Peak on-state voltage                                                | I <sub>TM</sub> =1500A, F= 18kN                                                                           | 25                  |       |      | 2.37   | V                                |
| dv/dt                  | Critical rate of rise of off-state voltage                           | V <sub>DM</sub> =0.67V <sub>DRM</sub>                                                                     | 125                 |       |      | 1000   | V/μs                             |
| di/dt                  | Critical rate of rise of on-state current                            | V <sub>DM</sub> = 67%V <sub>DRM</sub> to 1000A,<br>Gate pulse t <sub>r</sub> ≤0.5μs I <sub>GM</sub> =1.5A | 125                 |       |      | 100    | A/μs                             |
| Q <sub>rr</sub>        | Recovery charge                                                      | I <sub>TM</sub> =2000A, tp=2000μs, di/dt=-20A/μs,<br>V <sub>R</sub> =50V                                  | 125                 |       | 1500 |        | μC                               |
| $I_{GT}$               | Gate trigger current                                                 | V <sub>A</sub> =12V, I <sub>A</sub> =1A                                                                   | 25                  | 40    |      | 300    | mA                               |
| $V_{GT}$               | Gate trigger voltage                                                 |                                                                                                           |                     | 0.8   |      | 3.0    | V                                |
| $I_H$                  | Holding current                                                      |                                                                                                           |                     | 20    |      | 250    | mA                               |
| $V_{GD}$               | Non-trigger gate voltage                                             | V <sub>DM</sub> =0.67V <sub>DRM</sub>                                                                     | 125                 | 0.3   |      |        | V                                |
| $R_{th(j-c)}$          | Thermal resistance<br>Junction to case                               | At 180° sine double side cooled<br>Clamping force 18kN                                                    |                     |       |      | 0.0280 | °C / W                           |
| $R_{th(c-h)}$          | Thermal resistance<br>case to heatsink                               |                                                                                                           |                     |       |      | 0.0075 |                                  |
| $F_m$                  | Mounting force                                                       |                                                                                                           |                     | 15    |      | 20     | kN                               |
| T <sub>stg</sub>       | Stored temperature                                                   |                                                                                                           |                     | -40   |      | 140    | °C                               |
| W <sub>t</sub>         | Weight                                                               |                                                                                                           |                     |       | 320  |        | g                                |
| Outline                | P09                                                                  |                                                                                                           |                     |       |      |        |                                  |

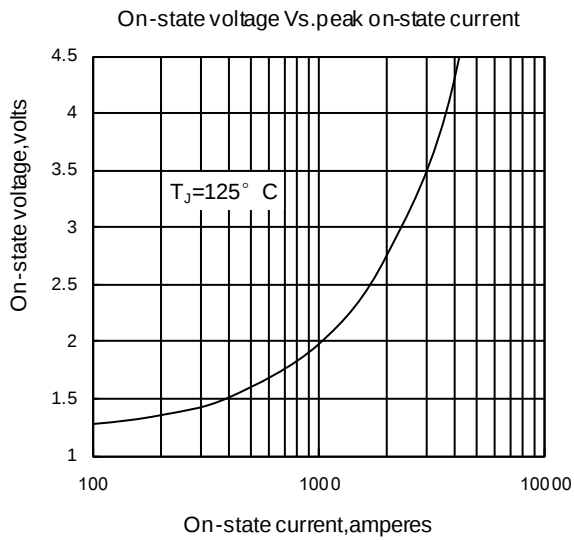


Fig1

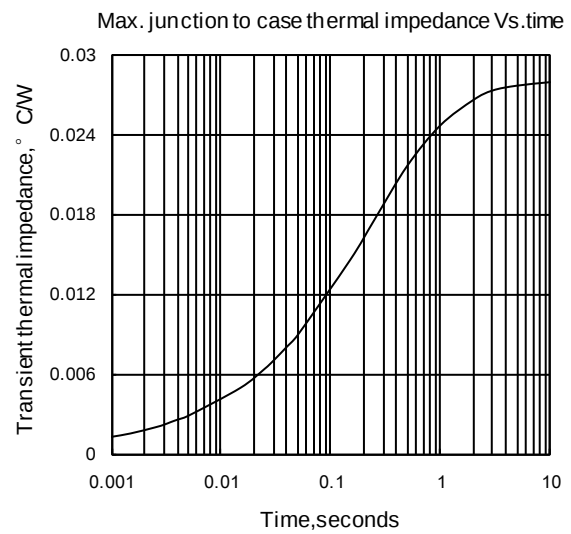


Fig2

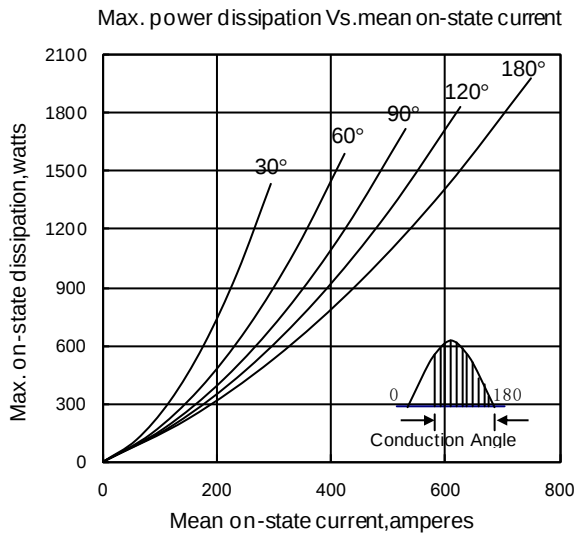


Fig3

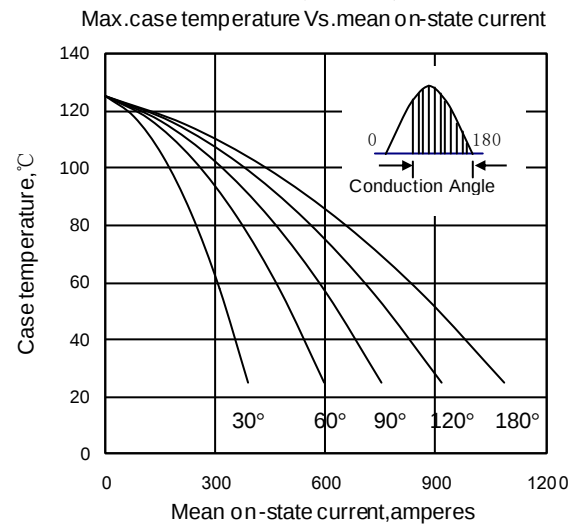


Fig4

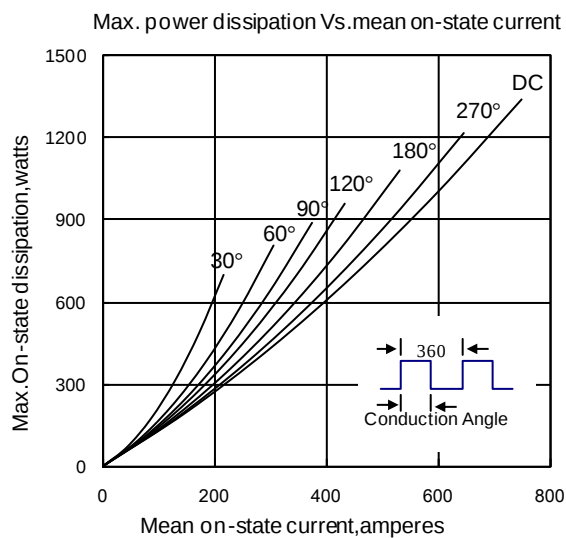


Fig5

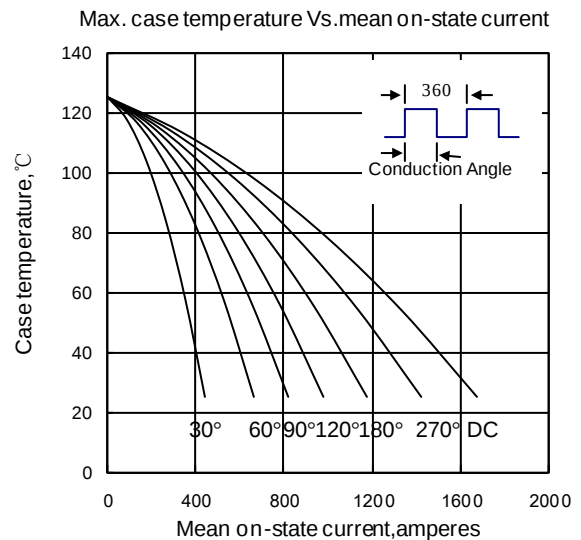


Fig6

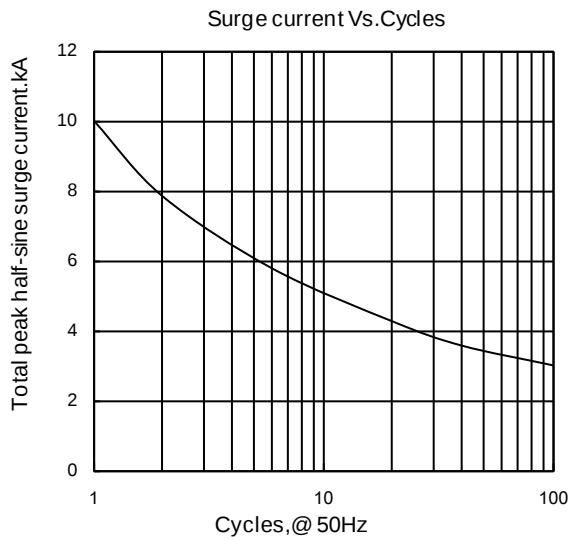


Fig7

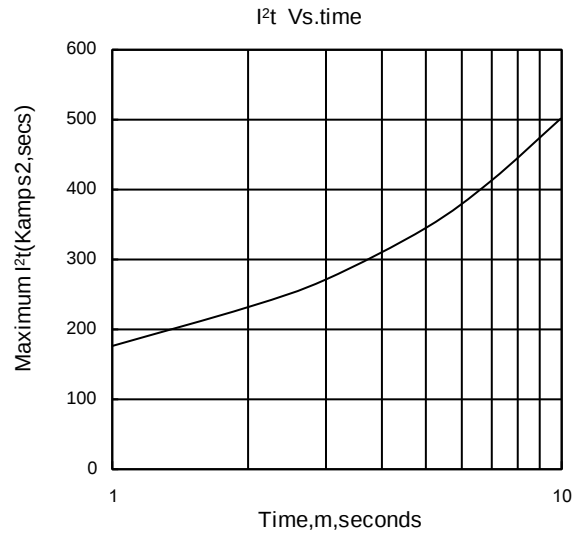


Fig8

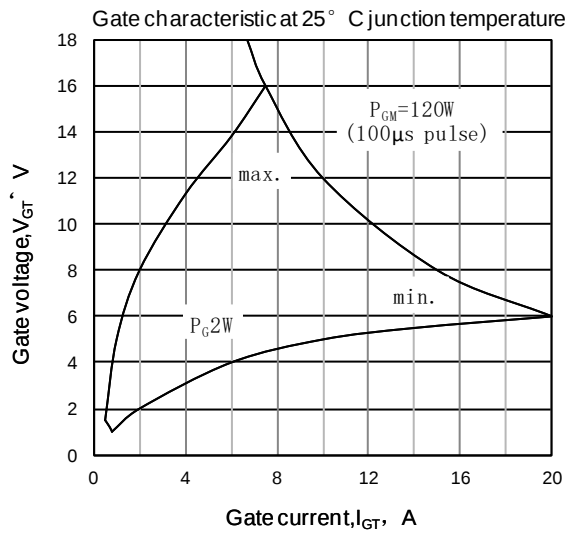


Fig9

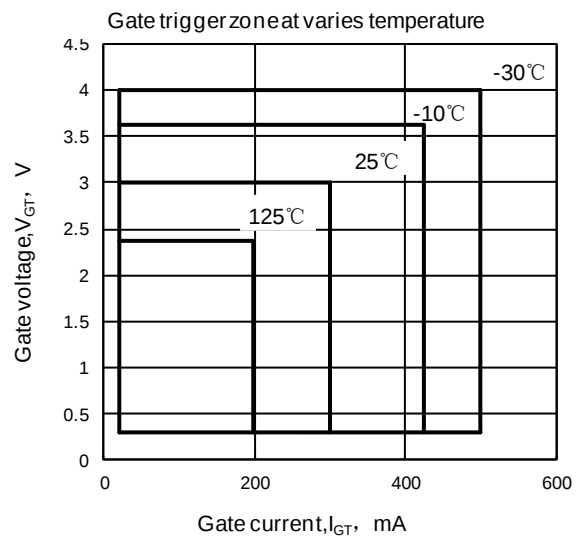


Fig10

