

### Features:

- Interdigitated amplifying gates
- Fast turn-on and high di/dt
- Low switching losses
- Short turn-off time
- Hermetic metal cases with ceramic insulators

### Typical Applications

- Inductive heating
- Electronic welders
- Self-commutated inverters
- AC motor speed control
- General power switching applications

$I_{T(AV)}$       **580A**  
 $V_{DRM}/V_{RRM}$     **800~1200V**  
 $t_q$                 **10~20μs**  
 $I_{TSM}$              **5.4kA**



| 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,  | 125                 |       |      | 580   | A                                |
|                                      |  |  |                     |       |      | 390   |                                  |
| 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>D</sub> &V <sub>RSM</sub> = V <sub>DRM</sub> &V <sub>RRM</sub> +100V | 125                 | 800   |      | 1200  | V                                |
| I <sub>DRM</sub><br>I <sub>RRM</sub> | Repetitive peak off-state current<br>Repetitive peak reverse current | V <sub>D</sub> = V <sub>DRM</sub><br>V <sub>R</sub> = V <sub>RRM</sub>   | 125                 |       |      | 30    | mA                               |
| I <sub>TSM</sub>                     | Surge on-state current   | 10ms half sine wave<br>V <sub>R</sub> =0.6V <sub>RRM</sub>   | 125                 |       |      | 5.4   | kA                               |
| I <sup>2</sup> t                     | I <sup>2</sup> T for fusing coordination                             |  |                     |       |      | 146   | A <sup>2</sup> s*10 <sup>3</sup> |
| V <sub>TO</sub>                      | Threshold voltage  |  | 125                 |       |      | 1.45  | V                                |
| r <sub>T</sub>                       | On-state slop resistance   |  |                     |       |      | 0.85  | mΩ                               |
| V <sub>TM</sub>                      | Peak on-state voltage  | I <sub>TM</sub> =1000A, F=7.0kN  | 125                 |       |      | 2.30  | V                                |
| dv/dt                                | Critical rate of rise of off-state voltage                           | V <sub>DM</sub> =0.67V <sub>DRM</sub>  | 125                 |       |      | 200   | V/μs                             |
| di/dt                                | Critical rate of rise of on-state current                            | V <sub>DM</sub> = 67%V <sub>DRM</sub> to1000<br>Gate pulse t <sub>r</sub> ≤0.5μs I <sub>GM</sub> =1.5A                     | 125                 |       |      | 1500  | A/μs                             |
| Q <sub>rr</sub>                      | Recovery charge  | I <sub>TM</sub> =500A,tp=2000μs, di/dt=-60A/μs,<br>V <sub>R</sub> =50V   | 125                 |       | 25   | 50    | μC                               |
| t <sub>q</sub>                       | Circuit commutated turn-off time                                     | I <sub>TM</sub> =500A,tp=1000μs, V <sub>R</sub> =50V<br>dv/dt=30V/μs ,di/dt=-20A/μs  | 125                 | 10    |      | 20    | μs                               |
| I <sub>GT</sub>                      | Gate trigger current   |  | 125                 | 30    |      | 200   | mA                               |
| V <sub>GT</sub>                      | Gate trigger voltage   | V <sub>A</sub> =12V, I <sub>A</sub> =1A  |                     | 0.8   |      | 2.5   | V                                |
| I <sub>H</sub>                       | Holding current  |  |                     | 20    |      | 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 7.0kN   |                     |       |      | 0.045 | °C /W                            |
| R <sub>th(c-h)</sub>                 | Thermal resistance<br>case to heat sink                              |  |                     |       |      | 0.010 |                                  |
| F <sub>m</sub>                       | Mounting force   |  |                     | 5.3   |      | 10    | kN                               |
| T <sub>stg</sub>                     | Stored temperature   |  |                     | -40   |      | 140   | °C                               |
| W <sub>t</sub>                       | Weight   |  |                     |       |      | 80    | g                                |
| Outline                              | KT25aT   |  |                     |       |      |       |                                  |

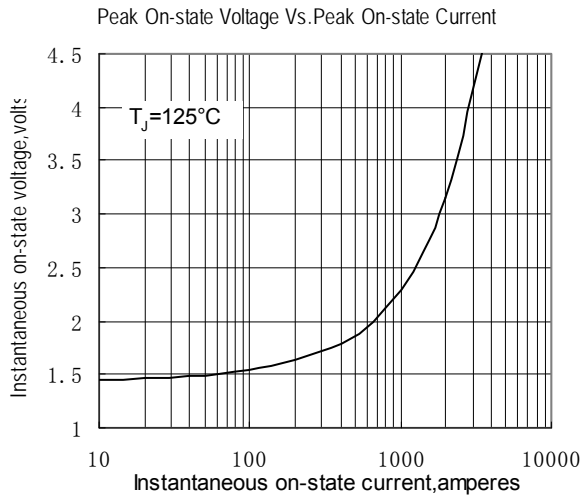


Fig.1

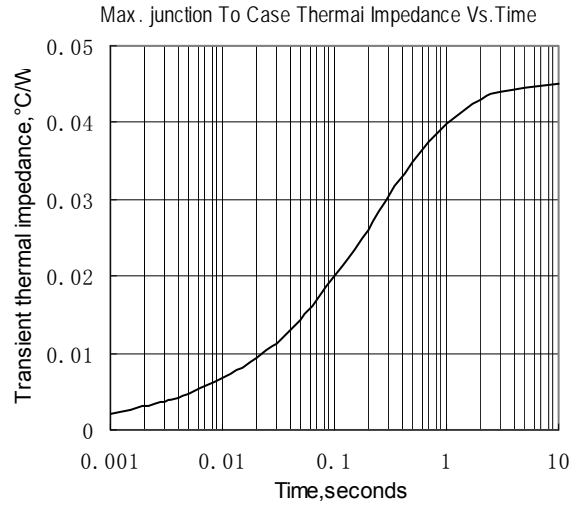


Fig.2

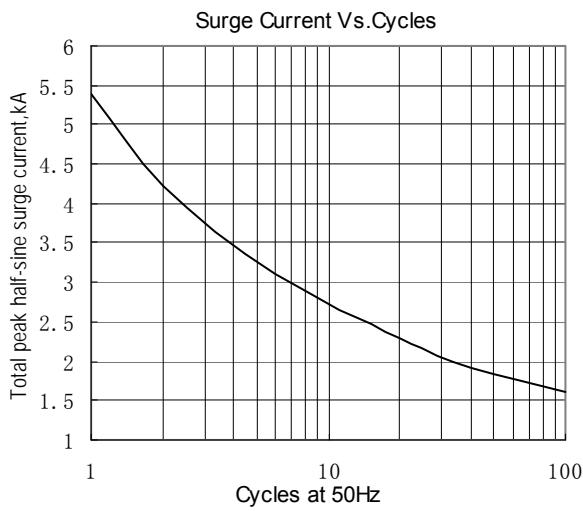


Fig.3

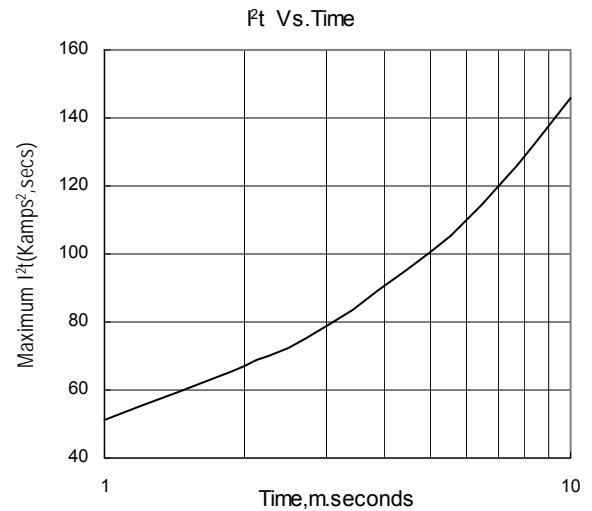


Fig.4

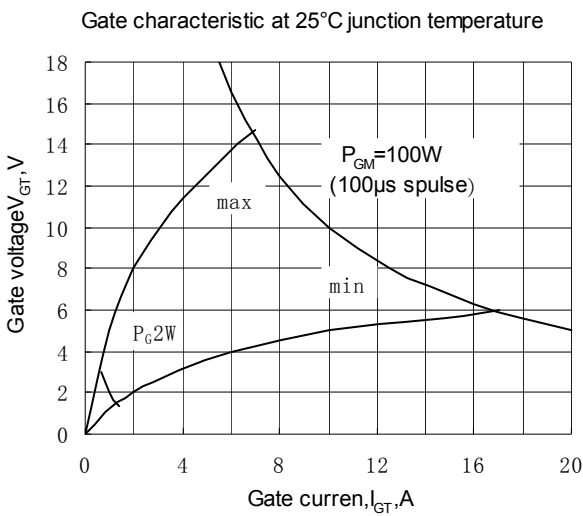


Fig.5

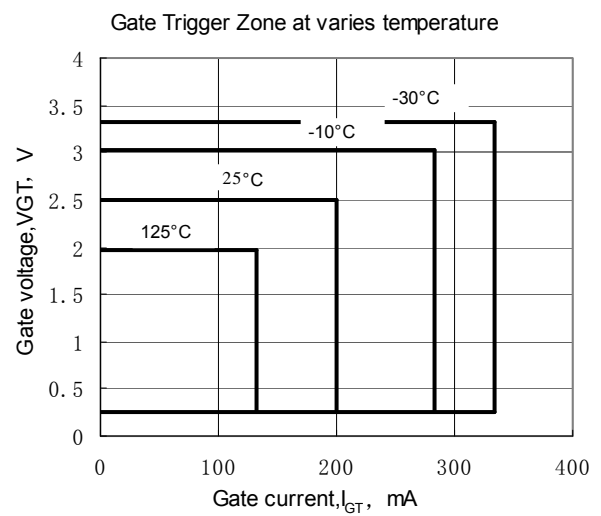


Fig.6

Outline:

