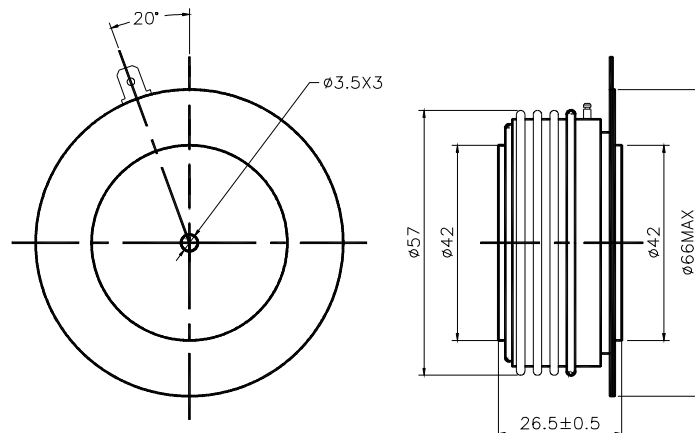


| SYMBOL                               | CHARACTERISTIC                                                       | TEST CONDITIONS                                                                                                                             | T <sub>j</sub> (°C) | VALUE |      |       | UNIT                             |
|--------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------|------|-------|----------------------------------|
|                                      |                                                                      |                                                                                                                                             |                     | Min   | Type | Max   |                                  |
| I <sub>T(AV)</sub>                   | Mean on-state current                                                | 180° half sine wave 50Hz<br>Double side cooled, T <sub>hs</sub> =55°C                                                                       | 125                 |       |      | 1226  | A                                |
| I <sub>T(AV)</sub>                   | Mean on-state current                                                | 180° half sine wave 50Hz<br>Double side cooled, T <sub>hs</sub> =80°C                                                                       | 125                 |       |      | 904   | 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> +100V<br>respectively | 125                 | 800   |      | 1800  | 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                 |       |      | 50    | mA                               |
| I <sub>TSM</sub>                     | Surge on-state current                                               | 10ms half sine wave                                                                                                                         | 125                 |       |      | 15.5  | KA                               |
| I <sup>2</sup> T                     | I <sup>2</sup> T for fusing coordination                             | V <sub>R</sub> =0.6V <sub>RRM</sub>                                                                                                         |                     |       |      | 1200  | A <sup>2</sup> s*10 <sup>3</sup> |
| V <sub>TO</sub>                      | Threshold voltage                                                    |                                                                                                                                             | 125                 |       |      | 0.91  | V                                |
| r <sub>T</sub>                       | On-state slop resistance                                             |                                                                                                                                             |                     |       |      | 0.29  | mΩ                               |
| V <sub>TM</sub>                      | Peak on-state voltage                                                | I <sub>TM</sub> =1700A, F= 18KN                                                                                                             | 125                 |       |      | 1.401 | V                                |
| dv/dt                                | Critical rate of rise of off-state voltage                           | V <sub>DM</sub> =0.67V <sub>DRM</sub>                                                                                                       | 125                 |       |      | 300   | V/μs                             |
| di/dt                                | Critical rate of rise of on-state current                            | From 67%V <sub>DRM</sub><br>to 1500A, Gate source 1.5A<br>t <sub>r</sub> ≤0.5μs Repetitive                                                  | 125                 |       |      | 300   | A/μs                             |
| I <sub>rm</sub>                      | Reverse recovery current                                             | I <sub>TM</sub> =500A, tp=1000μs,<br>di/dt=-20A/μs,<br>V <sub>i</sub> =50V                                                                  | 125                 |       |      | 133   | A                                |
| t <sub>rr</sub>                      | Reverse recovery time                                                |                                                                                                                                             |                     |       |      | 15.4  | μs                               |
| Q <sub>rr</sub>                      | Recovery charge                                                      |                                                                                                                                             |                     |       |      | 1027  | μC                               |
| I <sub>GT</sub>                      | Gate trigger current                                                 | V <sub>A</sub> =12V, I <sub>A</sub> =1A                                                                                                     | 25                  | 40    |      | 300   | mA                               |
| V <sub>GT</sub>                      | Gate trigger voltage                                                 |                                                                                                                                             |                     | 0.8   |      | 3.0   | V                                |
| I <sub>H</sub>                       | Holding current                                                      |                                                                                                                                             |                     | 20    |      | 250   | mA                               |
| V <sub>GD</sub>                      | Non-trigger gate voltage                                             | At 67%V <sub>DRM</sub>                                                                                                                      | 125                 |       |      | 0.3   | V                                |
| R <sub>th(j-h)</sub>                 | Thermal resistance<br>Junction to heatsink                           | At 180° sine double side cooled<br>Clamping force 18KN                                                                                      |                     |       |      | 0.032 | °C /W                            |
| F <sub>m</sub>                       | Mounting force                                                       |                                                                                                                                             |                     | 15    |      | 20    | KN                               |
| T <sub>stg</sub>                     | Stored temperature                                                   |                                                                                                                                             |                     | -40   |      | 140   | °C                               |
| W <sub>t</sub>                       | Weight                                                               |                                                                                                                                             |                     |       | 360  |       | g                                |
| Outline                              | KT39cT40                                                             |                                                                                                                                             |                     |       |      |       |                                  |

## Outline



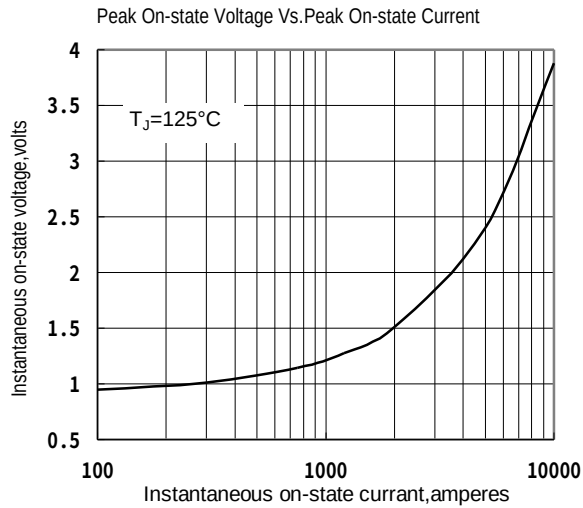


Fig.1

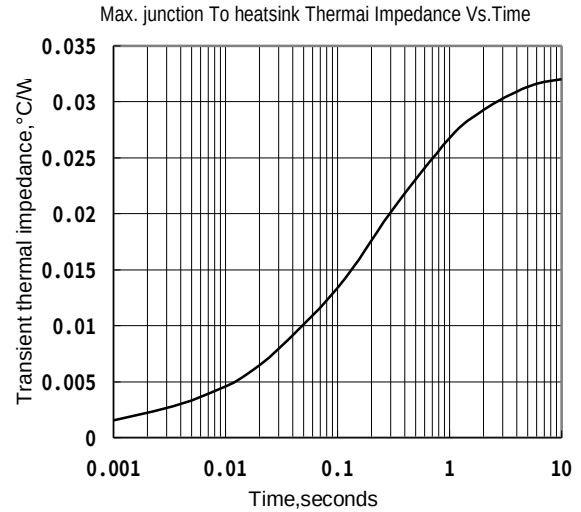


Fig.2

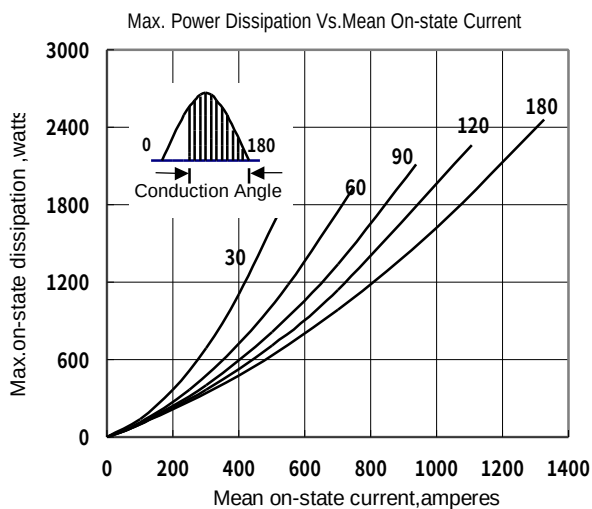


Fig.3

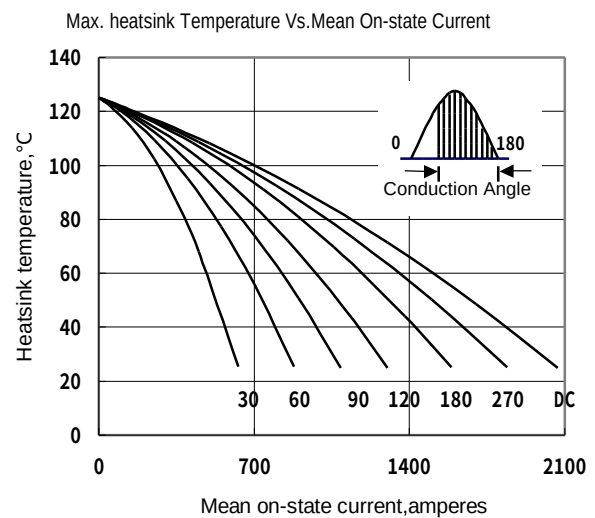


Fig.4

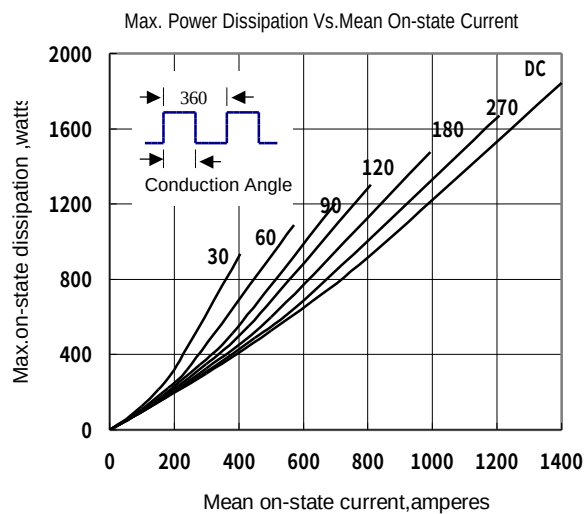


Fig.5

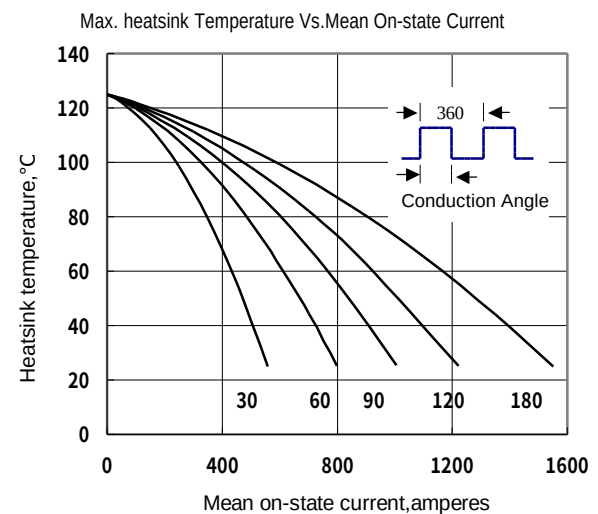


Fig.6

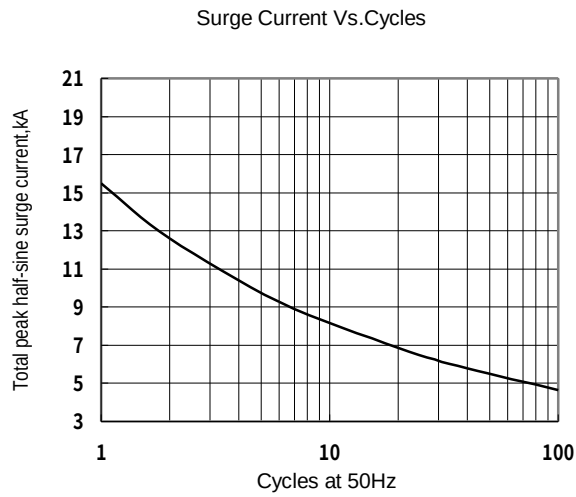


Fig.7

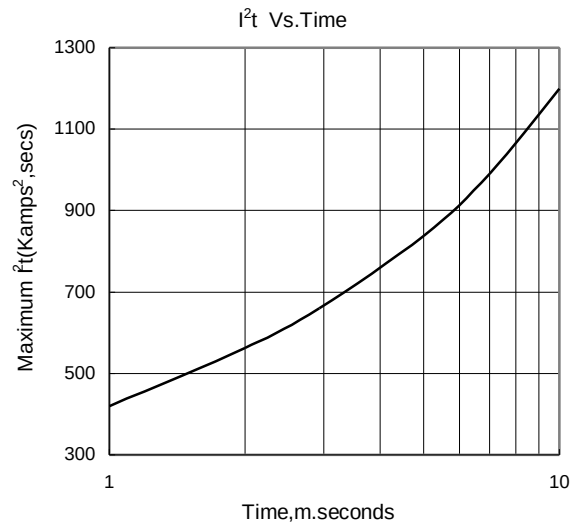


Fig.8

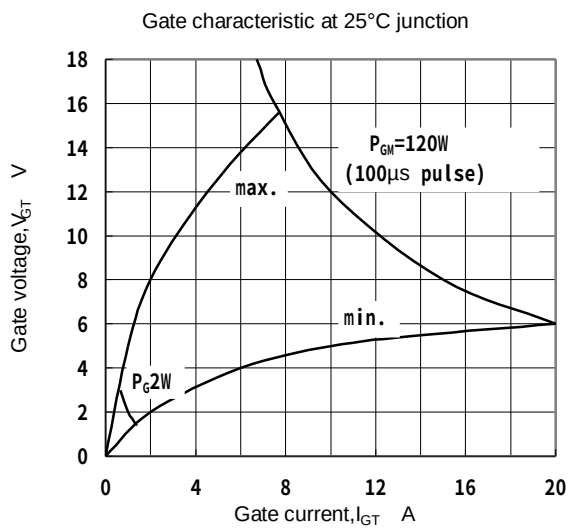


Fig.9

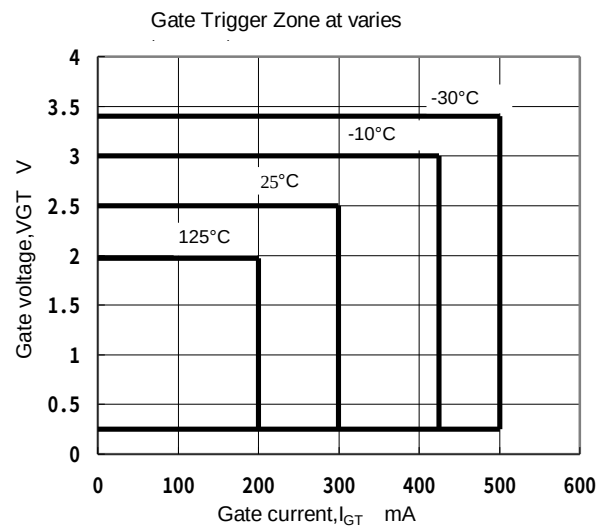


Fig.10