

**Features**

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

**Typical Applications**

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

**Part No. Y70KPH-KT60cT**

|   |                    |
|---|--------------------|
| <b>I<sub>T(AV)</sub></b>                | <b>2070A</b>       |
| <b>V<sub>DRM</sub>, V<sub>RRM</sub></b> | <b>2000V 2200V</b> |
|   | <b>2500V 2800V</b> |
|   | <b>3000V</b>       |

| SYMBOL                               | CHARACTERISTIC   | TEST CONDITIONS  | T <sub>i</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                 |       |      | 2070   | A                                |
| V <sub>DRM</sub><br>V <sub>RRM</sub> | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | tp=10ms  | 125                 | 1900  |      | 3000   | 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                 |       |      | 160    | mA                               |
| I <sub>TSM</sub>                     | Surge on-state current   | 10ms half sine wave  | 125                 |       |      | 28     | kA                               |
| I <sup>2</sup> t                     | I <sup>2</sup> t for fusing coordination                             | V <sub>R</sub> =0.6V <sub>RRM</sub>  |                     |       |      | 3920   | A <sup>2</sup> s*10 <sup>3</sup> |
| V <sub>TO</sub>                      | Threshold voltage  |  | 125                 |       |      | 1.07   | V                                |
| r <sub>T</sub>                       | On-state slope resistance  |  |                     |       |      | 0.19   | mΩ                               |
| V <sub>TM</sub>                      | Peak on-state voltage  | I <sub>TM</sub> =4000A, F=35kN   | 25                  |       |      | 2.30   | 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 2500A,<br>Gate pulse t <sub>r</sub> ≤ 0.5μs I <sub>GM</sub> =1.5A | 125                 |       |      | 250    | A/μs                             |
| Q <sub>rr</sub>                      | Recovery charge  | I <sub>TM</sub> =2000A, tp=4000μs, di/dt=-20A/μs,<br>V <sub>R</sub> =100V                                  | 125                 |       | 2000 |        | 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    |      | 300    | mA                               |
| I <sub>L</sub>                       | Latching current   |  |                     |       |      | 1000   | 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 35.0kN  |                     |       |      | 0.0120 | °C /W                            |
| R <sub>th(c-h)</sub>                 | Thermal resistance<br>case to heatsink                               |  |                     |       |      | 0.0035 |                                  |
| F <sub>m</sub>                       | Mounting force   |  |                     | 30    |      | 40     | kN                               |
| T <sub>vj</sub>                      | Junction temperature   |  |                     | -40   |      | 125    | °C                               |
| T <sub>stg</sub>                     | Stored temperature   |  |                     | -40   |      | 140    | °C                               |
| W <sub>t</sub>                       | Weight   |  |                     |       | 880  |        | g                                |
| Outline                              | KT60cT   |  |                     |       |      |        |                                  |

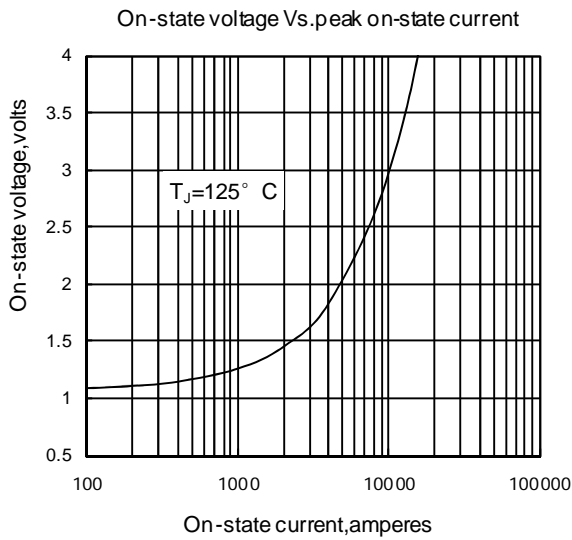


Fig1

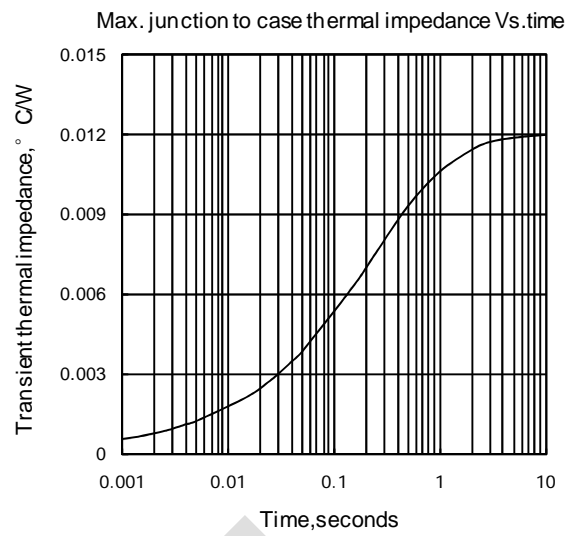


Fig2

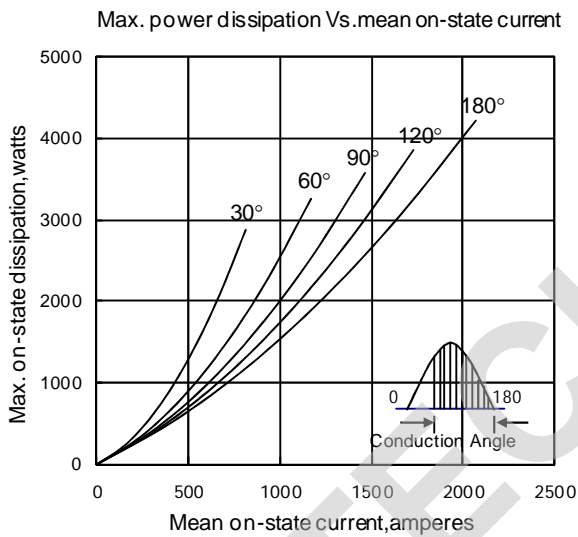


Fig3

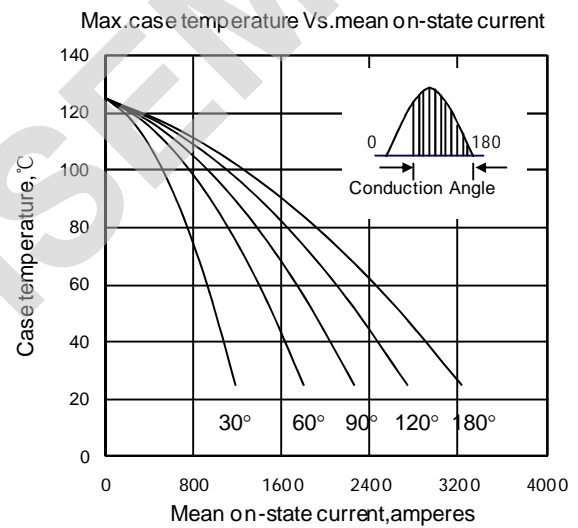


Fig4

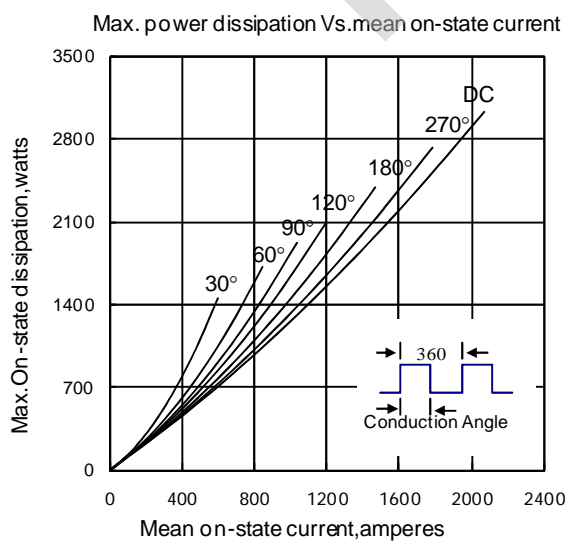


Fig5

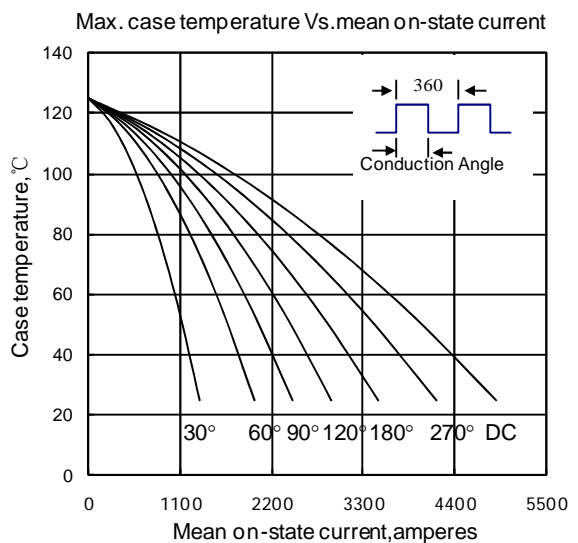


Fig6

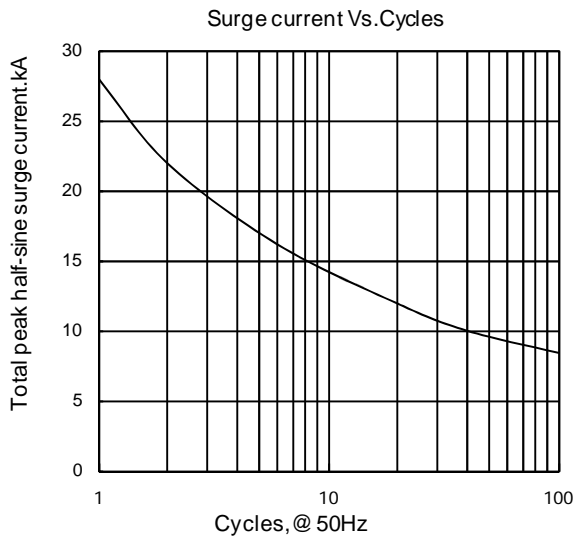


Fig7

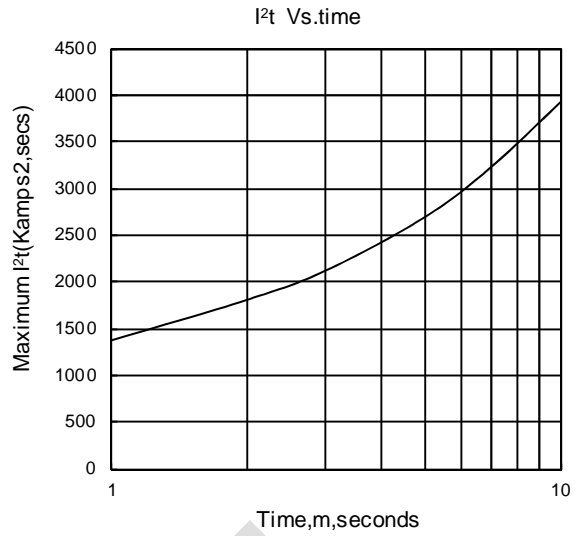


Fig8

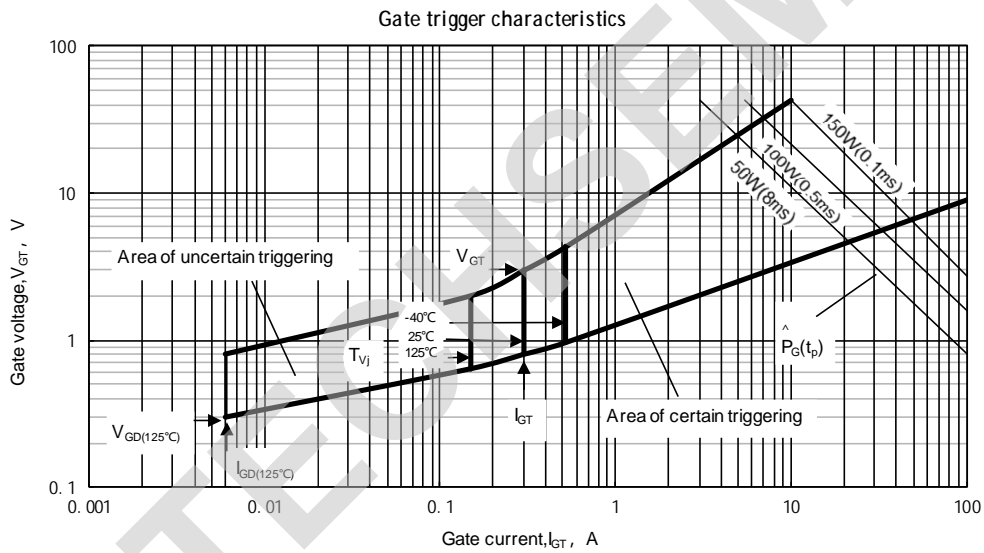
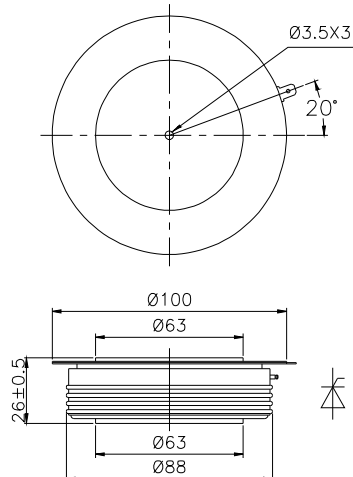


Fig.9

Outline:



TECHSEM reserves the right to change specifications without notice.