

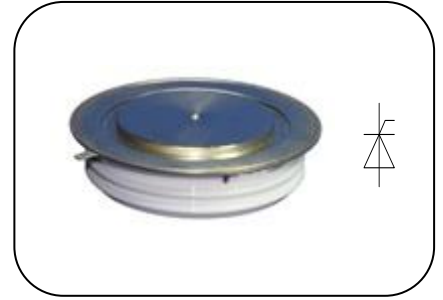
**Features**

- Interdigitated amplifying gates
- Fast turn-on and high di/dt
- Low switching losses

**Typical Applications**

- Inductive heating
- Electronic welders
- Self-commutated inverters

|                   |  |
|-------------------|--|
| $I_{T(AV)}$       | <b>2080A</b>                             |
| $V_{DRM}/V_{RRM}$ | <b>800~1800V</b>                         |
| $t_q$             | <b>18~50μs</b>                           |
| $I_{TSM}$         | <b>27 kA</b>                             |
| $I^2t$            | <b>3645 10<sup>3</sup>A<sup>2</sup>S</b> |



| 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, T <sub>C</sub> =55°C          | 125                 |       |      | 2080   | A                                |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | tp=10ms   | 125                 | 800   |      | 1800   | V                                |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak current  | at $V_{DRM}$<br>at $V_{RRM}$  | 125                 |       |      | 120    | mA                               |
| $I_{TSM}$              | Surge on-state current   | 10ms half sine wave   | 125                 |       |      | 27     | kA                               |
| $I^2t$                 | $I^2t$ for fusing coordination                                       |   |                     |       |      | 3645   | A <sup>2</sup> s*10 <sup>3</sup> |
| $V_{TO}$               | Threshold voltage  |   | 125                 |       |      | 1.41   | V                                |
| $r_T$                  | On-state slope resistance  |   |                     |       |      | 0.23   | mΩ                               |
| $V_{TM}$               | Peak on-state voltage  | $I_{TM}=3000A, F=32kN$  | 125                 |       |      | 2.10   | V                                |
| dv/dt                  | Critical rate of rise of off-state voltage                           | $V_{DM}=0.67V_{DRM}$  | 125                 |       |      | 500    | V/μs                             |
| di/dt                  | Critical rate of rise of on-state current                            | $V_{DM}=67\%V_{DRM}$ to 3000A<br>Gate pulse $t_r \leq 0.5\mu s$ $I_{GM}=1.5A$ | 125                 |       |      | 1200   | A/μs                             |
| $Q_{rr}$               | Recovery charge  | $I_{TM}=1000A, tp=2000\mu s,$<br>$di/dt=-60A/\mu s, V_R=50V$                  | 125                 |       | 860  |        | μC                               |
| t <sub>q</sub>         | Circuit commutated turn-off time                                     | $I_{TM}=1000A, tp=2000\mu s, V_R=50V$<br>$dv/dt=30V/\mu s, di/dt=-60A/\mu s$  | 125                 | 18    |      | 50     | μs                               |
| $I_{GT}$               | Gate trigger current   | $V_A=12V, I_A=1A$   | 25                  | 40    |      | 400    | mA                               |
| $V_{GT}$               | Gate trigger voltage   |   |                     | 0.9   |      | 4.0    | V                                |
| $I_H$                  | Holding current  |   |                     | 20    |      | 800    | mA                               |
| $V_{GD}$               | Non-trigger gate voltage   | $V_{DM}=67\%V_{DRM}$  | 125                 | 0.3   |      |        | V                                |
| $R_{th(j-c)}$          | Thermal resistance<br>Junction to case                               | DC: double side cooled<br>Clamping force 32kN                                 |                     |       |      | 0.0130 | °C/W                             |
| $R_{th(c-h)}$          | Thermal resistance<br>case to heat sink                              |   |                     |       |      | 0.0035 |                                  |
| $F_m$                  | Mounting force   |   |                     | 27    |      | 34     | kN                               |
| T <sub>stg</sub>       | Stored temperature   |   |                     | -40   |      | 140    | °C                               |
| W <sub>t</sub>         | Weight   |   |                     |       | 820  |        | g                                |
| Outline                | P15  |   |                     |       |      |        |                                  |

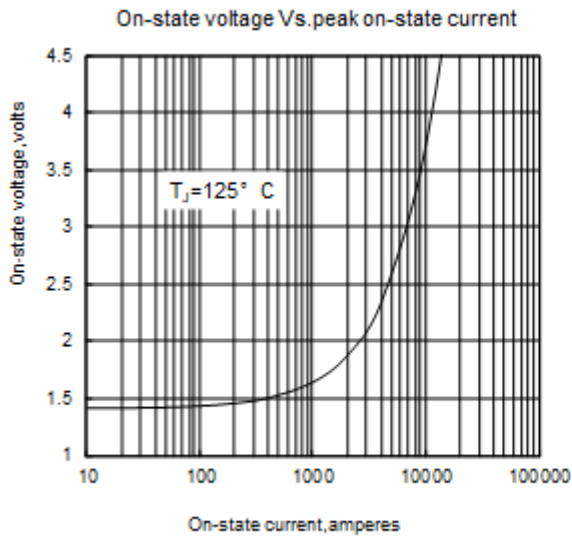


Fig1

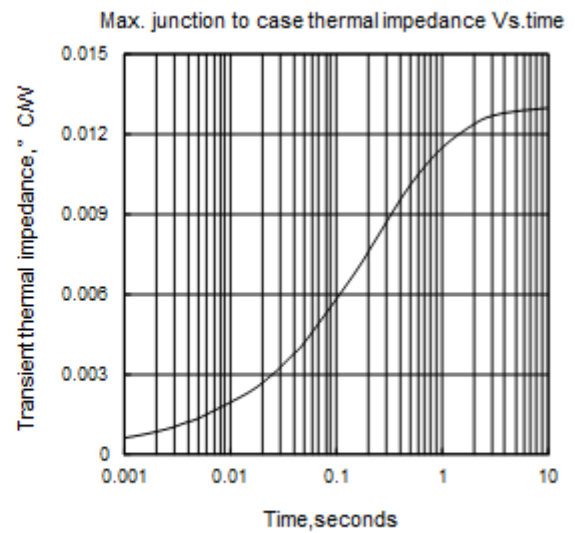


Fig2

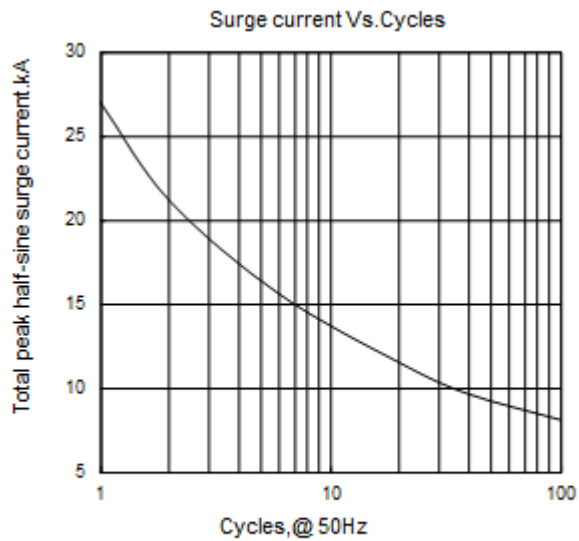


Fig3

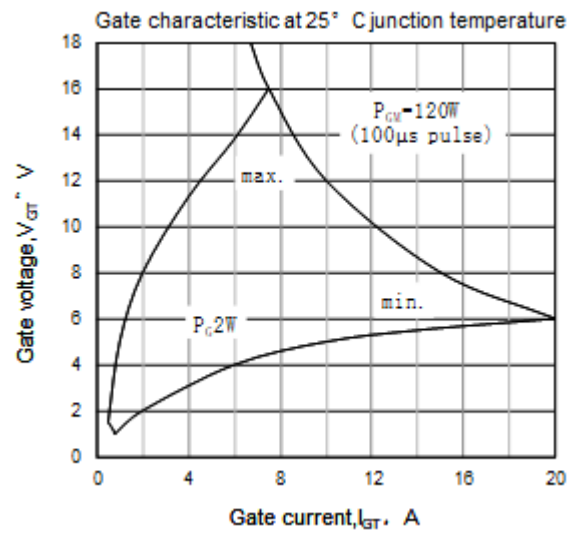


Fig4

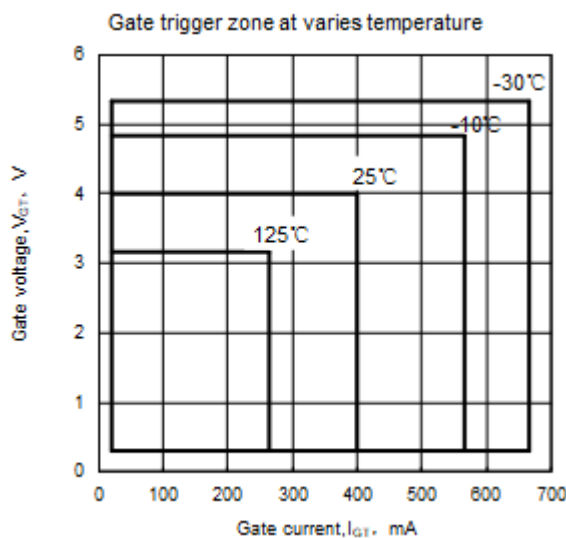
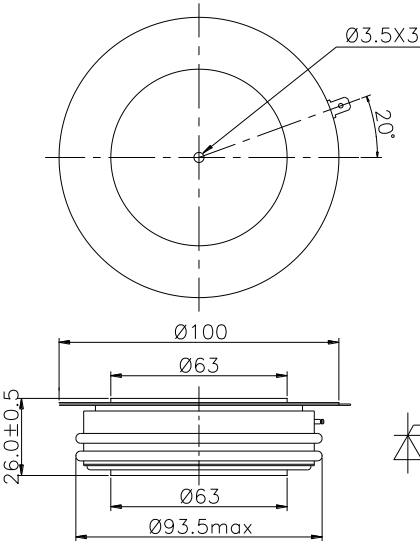


Fig5



Nlps reserves the right to change specifications without notice.