

#### 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>2240A</b>                             |
| $V_{DRM}/V_{RRM}$ | <b>4100~5200V</b>                        |
| $t_q$             | <b>60~150<math>\mu</math>s</b>           |
| $I_{TSM}$         | <b>21 kA</b>                             |
| $I^2t$            | <b>2205 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                 |       |      | 2240  | A                                |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | tp=10ms  |                      | 125                 | 4100  |      | 5200  | V                                |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak current  | at $V_{DRM}$<br>at $V_{RRM}$   |                      | 125                 |       |      | 250   | mA                               |
| $I_{TSM}$              | Surge on-state current   | 10ms half sine wave  |                      | 125                 |       |      | 21    | kA                               |
| $I^2t$                 | $I^2t$ for fusing coordination                                       | $V_R=0.6V_{RRM}$   |                      |                     |       |      | 2205  | A <sup>2</sup> s*10 <sup>3</sup> |
| $V_{TO}$               | Threshold voltage  |  |                      | 125                 |       |      | 1.68  | V                                |
| $r_T$                  | On-state slope resistance  |  |                      |                     |       |      | 0.26  | mΩ                               |
| $V_{TM}$               | Peak on-state voltage  | $I_{TM}=2000A, F=70kN$   |                      | 125                 |       |      | 3.20  | V                                |
| dv/dt                  | Critical rate of rise of off-state voltage                           | $V_{DM}=0.67V_{DRM}$   |                      | 125                 |       |      | 500   | V/ $\mu$ s                       |
| di/dt                  | Critical rate of rise of on-state current                            | $V_{DM}=67\%V_{DRM}$ , to4000A<br>Gate pulse $t_r \leq 0.5\mu s$ $I_{GM}=1.5A$ |                      | 125                 |       |      | 1200  | A/ $\mu$ s                       |
| $Q_{rr}$               | Recovery charge  | $I_{TM}=2000A, tp=2000\mu s,$<br>$di/dt=-20A/\mu s, V_R=50V$                   |                      | 125                 |       | 4000 |       | $\mu C$                          |
| $t_q$                  | Circuit commutated turn-off time                                     | $I_{TM}=2000A, tp=2000\mu s, V_R=50V$<br>$dv/dt=30V/\mu s, di/dt=-60A/\mu s$   |                      | 125                 | 60    |      | 150   | $\mu s$                          |
| $I_{GT}$               | Gate trigger current   |  |                      | 25                  | 50    |      | 300   | mA                               |
| $V_{GT}$               | Gate trigger voltage   | $V_A=12V, I_A=1A$  |                      |                     | 0.8   |      | 3.5   | V                                |
| $I_H$                  | Holding current  |  |                      |                     | 40    |      | 1000  | mA                               |
| $V_{GD}$               | Non-trigger gate voltage   | $V_{DM}=67\%V_{DRM}$   |                      | 125                 | 0.25  |      |       | V                                |
| $R_{th(j-c)}$          | Thermal resistance<br>Junction to case                               | At 180° sine double side cooled  |                      |                     |       |      | 0.010 | °C/W                             |
| $R_{th(c-h)}$          | Thermal resistance<br>case to heat sink                              | Clamping force 40kN  |                      |                     |       |      | 0.003 |                                  |
| $F_m$                  | Mounting force   |  |                      |                     | 35    |      | 47    | kN                               |
| $T_{stg}$              | Stored temperature   |  |                      |                     | -40   |      | 140   | °C                               |
| $W_t$                  | Weight   |  |                      |                     |       | 880  |       | g                                |
| Outline                |  |  |                      |                     |       |      |       |                                  |

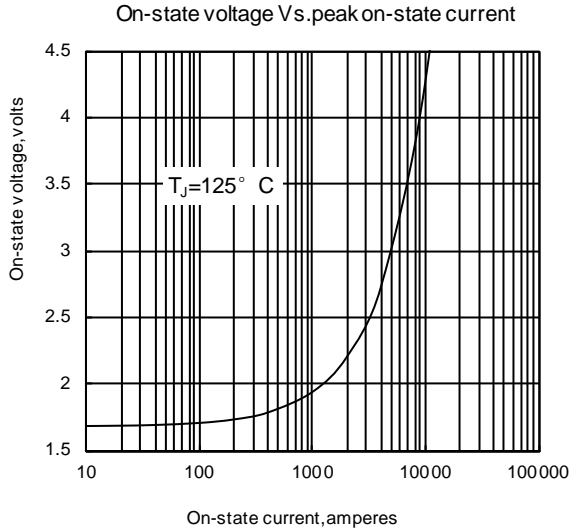


Fig1

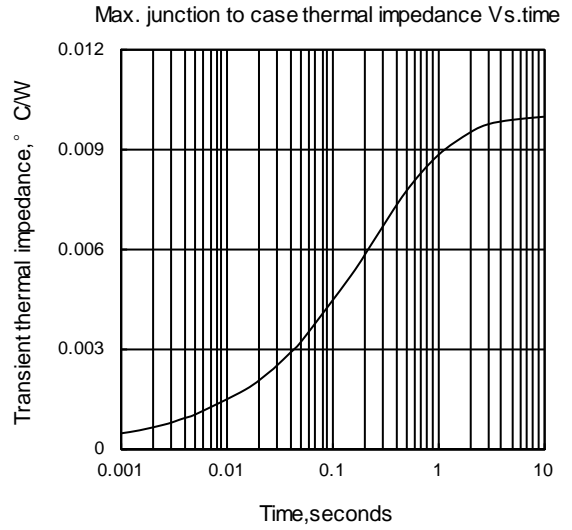


Fig2

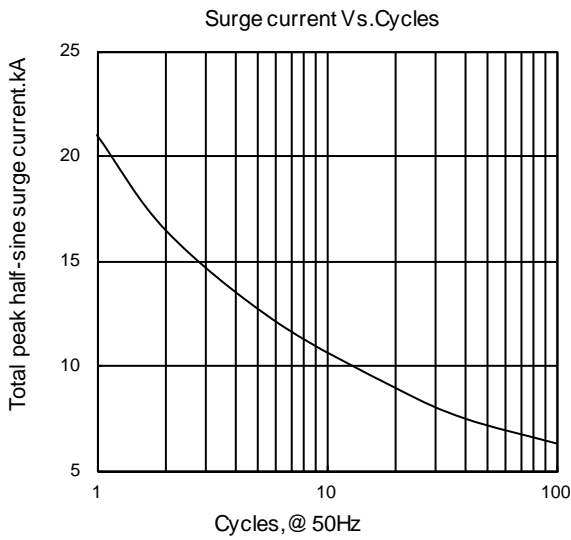


Fig3

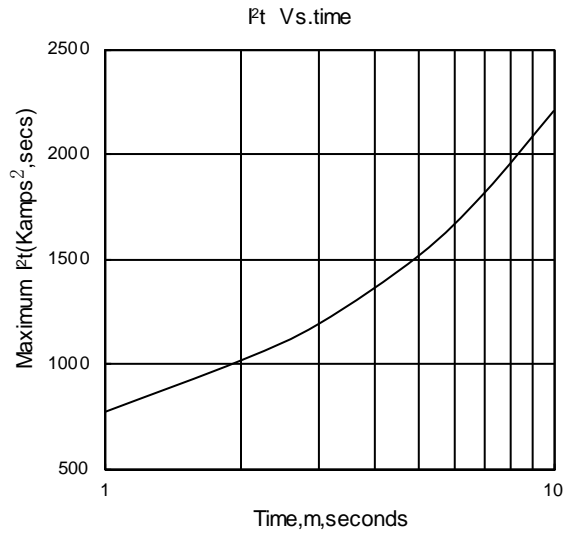


Fig4

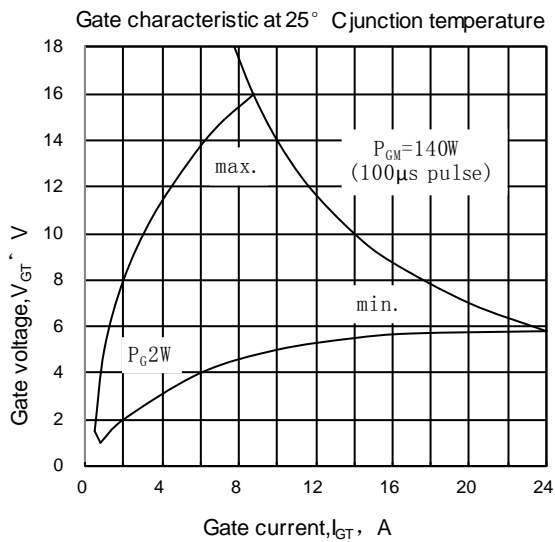


Fig5

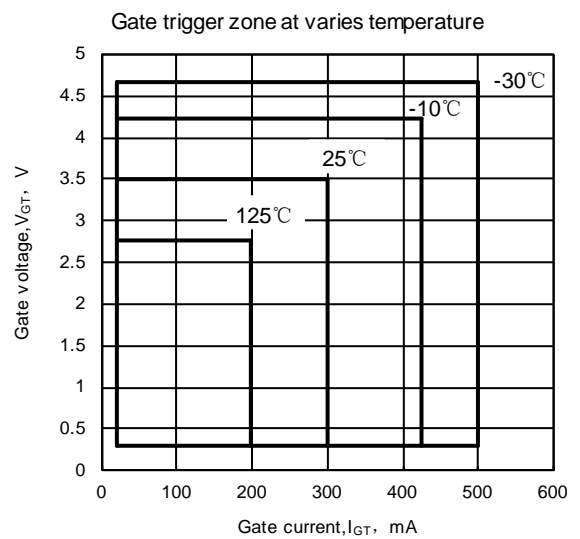


Fig6

**Outline:**

