

## Features

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

## Typical Applications

- Inductive heating
- Electronic welders
- Self-commutated inverters

品名：FH2500TN

 $I_{T(AV)}$  2500A $V_{DRM}$  800V~2000V $V_{RRM}$  1000V~1800V $t_q$  15~75 $\mu$ s

| SYMBOL                 | CHARACTERISTIC   | TEST CONDITIONS   |                          | $T_j(^{\circ}\text{C})$ | VALUE |      |       | UNIT                        |
|------------------------|--|---|--------------------------|-------------------------|-------|------|-------|-----------------------------|
|                        |  |   |                          |                         | Min   | Type | Max   |                             |
| $I_{T(AV)}$            | Mean on-state current                                      | 180° half sine wave 50Hz<br>Double side cooled  | $T_c=55^{\circ}\text{C}$ | 125                     |       |      | 2500  | A                           |
| $V_{DRM}$              | Repetitive peak off-state voltage                          | $t_p=10\text{ms}$   |                          | 125                     | 800   |      | 2000  | V                           |
| $V_{RRM}$              | Repetitive peak reverse voltage                            |   |                          |                         | 1000  |      | 1800  | V                           |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak current                                    | at $V_{DRM}$<br>at $V_{RRM}$  |                          | 125                     |       |      | 200   | mA                          |
| $I_{TSM}$              | Surge on-state current                                     | 10ms half sine wave   |                          | 125                     |       |      | 29    | kA                          |
| $I^2t$                 | $I^2t$ for fusing coordination                             | $V_R=0.6V_{RRM}$  |                          |                         |       |      | 4205  | $10^3\text{A}^2\text{s}$    |
| $V_{TO}$               | Threshold voltage  |   |                          | 125                     |       |      | 1.10  | V                           |
| $r_T$                  | On-state slope resistance                                  |   |                          |                         |       |      | 0.13  | m $\Omega$                  |
| $V_{TM}$               | Peak on-state voltage                                      | $I_{TM}=4000\text{A}$ , $F=32\text{kN}$   | $15 \leq t_q \leq 28$    | 25                      |       |      | 2.20  | V                           |
|                        |  |   | $29 \leq t_q \leq 50$    |                         |       |      | 2.00  | V                           |
|                        |  |   | $51 \leq t_q \leq 75$    |                         |       |      | 1.80  | V                           |
| dv/dt                  | Critical rate of rise of off-state voltage                 | $V_{DM}=0.67V_{DRM}$  |                          | 125                     |       |      | 1000  | V/ $\mu$ s                  |
| di/dt                  | Critical rate of rise of on-state current (Non-repetitive) | $V_{DM}=67\%V_{DRM}$ ,<br>Gate pulse $t_r \leq 0.5\mu\text{s}$ $I_{GM}=1.5\text{A}$   |                          | 125                     |       |      | 1500  | A/ $\mu$ s                  |
| $Q_{rr}$               | Recovery charge  | $I_{TM}=2000\text{A}$ , $t_p=4000\mu\text{s}$ , $di/dt=-20\text{A}/\mu\text{s}$ ,<br>$V_R=100\text{V}$                                |                          | 125                     |       | 750  |       | $\mu\text{C}$               |
| $t_q$                  | Circuit commutated turn-off time                           | $I_{TM}=2000\text{A}$ , $t_p=4000\mu\text{s}$ , $V_R=100\text{V}$<br>$dv/dt=30\text{V}/\mu\text{s}$ , $di/dt=-20\text{A}/\mu\text{s}$ |                          | 125                     | 15    |      | 75    | $\mu\text{s}$               |
| $I_{GT}$               | Gate trigger current                                       | $V_A=12\text{V}$ , $I_A=1\text{A}$  |                          | 25                      | 40    |      | 250   | mA                          |
| $V_{GT}$               | Gate trigger voltage                                       |   |                          |                         | 0.9   |      | 2.5   | V                           |
| $I_H$                  | Holding current  |   |                          |                         | 20    |      | 1000  | mA                          |
| $I_L$                  | Latching current   |   |                          |                         |       |      | 1000  | 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  |                          |                         |       |      | 0.012 | $^{\circ}\text{C}/\text{W}$ |
| $R_{th(c-h)}$          | Thermal resistance<br>case to heatsink                     |   |                          |                         |       |      | 0.003 |                             |
| $F_m$                  | Mounting force   |   |                          |                         | 30    |      | 40    | kN                          |
| $T_{vj}$               | Junction temperature                                       |   |                          |                         | -40   |      | 125   | $^{\circ}\text{C}$          |
| $T_{stg}$              | Stored temperature   |   |                          |                         | -40   |      | 130   | $^{\circ}\text{C}$          |
| $W_t$                  | Weight   |   |                          |                         |       |      | 880   | g                           |
| Outline                | P15  |   |                          |                         |       |      |       |                             |

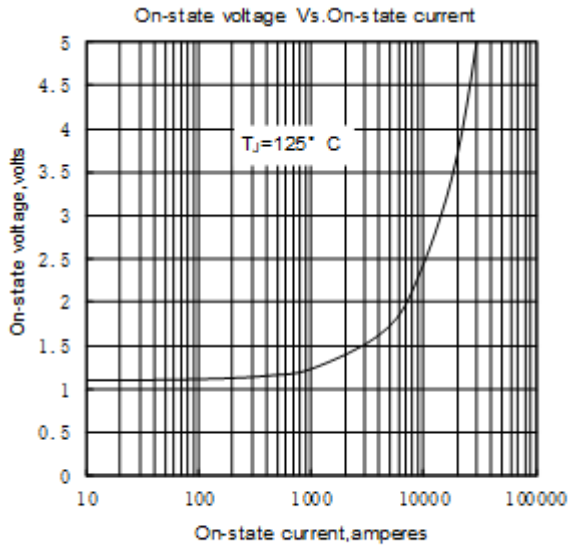


Fig. 1

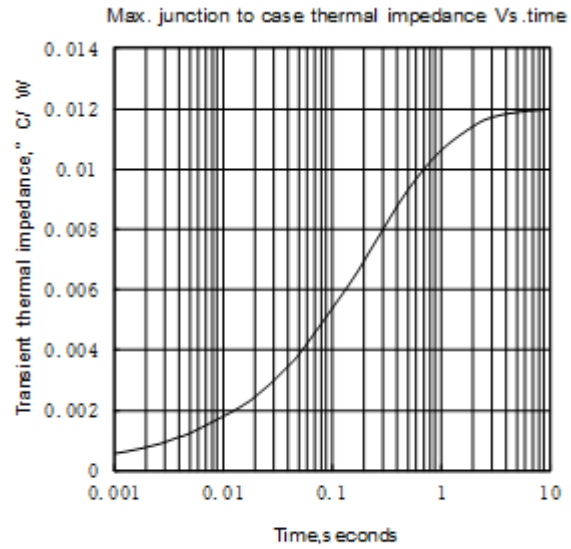


Fig. 2

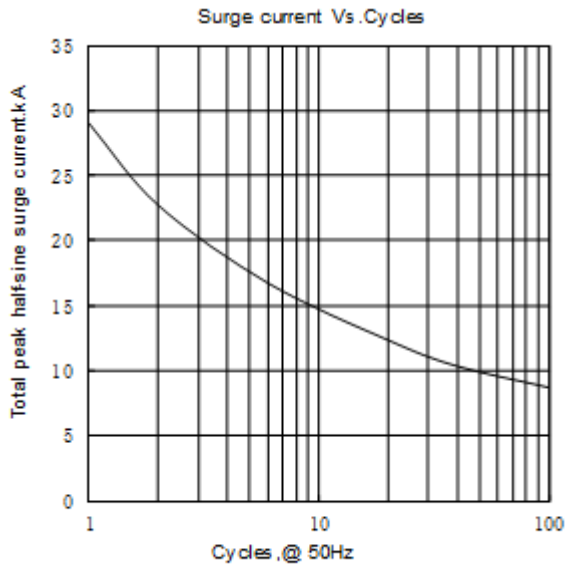


Fig. 3

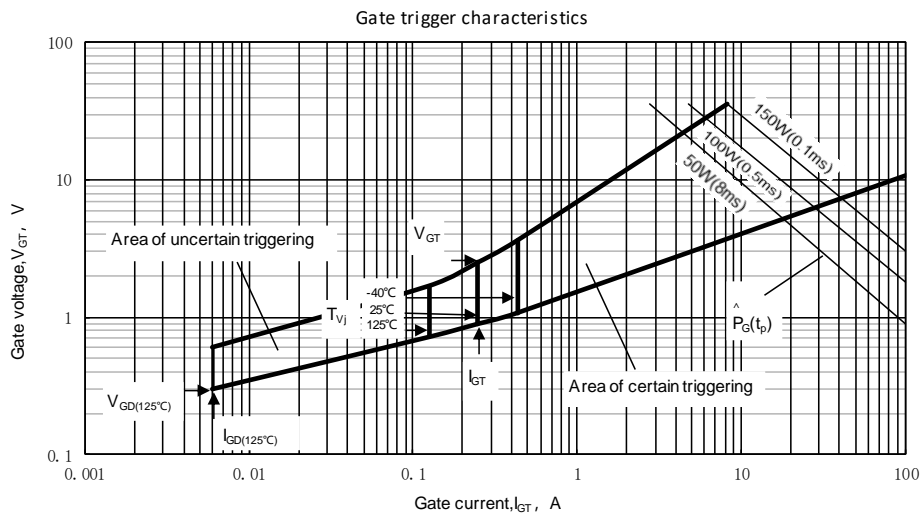
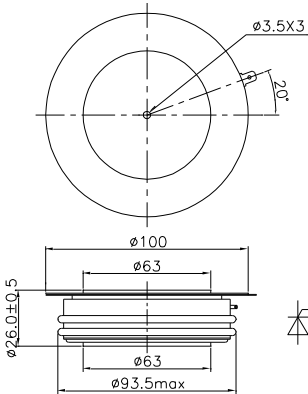


Fig. 4



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