

## Feature

- Full diffusion process,capsule type ceramic package
- Distributed extension to amplify the gate structure
- Excellent dynamic characteristic
- Low switching loss,Doule-sided cooling
- Fast switching performance

## Typical Application

- Inverter,Chopppe,Inductor
- Various types of forced converter

|                   |           |
|-------------------|-----------|
| $I_{T(AV)}$       | 2500A     |
| $V_{DRM}/V_{RRM}$ | 600-2500V |
| $T_q$             | 40-80us   |
| $I_{TSM}$         | 35.6KA    |

| SYMBOL                 | CHARACTERISTIC                                                       | TEST CONDITIONS                                                               | $T_J$<br>(°C) | VALUE |       | UNIT      |
|------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------|-------|-------|-----------|
|                        |                                                                      |                                                                               |               | Min   | Max   |           |
| $I_{T(AV)}$            | Mean on-state current                                                | 180° half sine wave 50Hz<br>Double side cooled, THS=55°C                      | 125           |       | 2500  | A         |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | $V_{DRM} \& V_{RRM} t_p=10ms$<br>$V_{DSM} \& V_{RSM}=V_{DRM} \& V_{RRM}+100V$ | 125           | 600   | 2500  | V         |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak current                                              | $V_{DM}=V_{DRM}$<br>$V_{RM}=V_{RRM}$                                          | 125           |       | 200   | mA        |
| $I_{TSM}$              | Surge on-state current                                               | 10ms half sine wave                                                           | 125           |       | 35.6  | KA        |
| $I^2t$                 | $I^2t$ for fusing coordination                                       | $V_R=0.6V_{RRM}$                                                              |               |       | 6337  | $A^2S*10$ |
| $V_{TO}$               | Threshold voltage                                                    |                                                                               |               |       | 1.3   | V         |
| $r_T$                  | On-state slop resistance                                             |                                                                               | 125           |       | 0.15  | mΩ        |
| $V_{TM}$               | Peak on-state voltage                                                | $I_{TM}=5000A, F=15KN$                                                        | 25            |       | 3.15  | V         |
| $dv/dt$                | Critical rate of rise of-state voltage                               | $V_{DM}=0.67V_{DRM}$                                                          | 125           |       | 1000  | V/us      |
| $di/dt$                | Critical rate of rise of on-state current                            | $V_{DM}=67\% V_{DRM}$ TO 1000A,<br>Gate pulse $tr \leq 0.5us$ $I_{GM}=1.5A$   | 125           |       | 250   | A/us      |
| $I_{TM}$               | Reverse recovery current                                             | $I_{TM}=5000A, t_q=1000us$<br>$Di/dt=-20A/us.$<br>$V_f=50V$                   | 125           | 178   |       | A         |
| $t_{rr}$               | Reverse recovery time                                                |                                                                               |               | 10.5  |       | us        |
| $Q_{rr}$               | Recovery charge                                                      |                                                                               |               | 934   | 1100  | uC        |
| $t_q$                  | Circuit commutated turn-off time                                     | $I_{TM}=5000A, t_q=1000us,$<br>$di/dt=20a/us$ $V_R=50V$                       | 125           | 40    | 80    | us        |
| $I_{GT}$               | Gate trigger current                                                 | $V_A=12V, I_A=1A$                                                             | 25            | 40    | 450   | mA        |
| $V_{GT}$               | Gate trigger voltage                                                 |                                                                               |               | 0.9   | 4.5   | V         |
| $I_H$                  | Holding current                                                      |                                                                               |               | 20    | 1000  | mA        |
| $V_{GD}$               | Npn-trigger gate voltage                                             | $V_{DM}=0.67V_{DRM}$                                                          | 125           | 0.3   |       | V         |
| $R_{th(j-h)}$          | Thermal resistance<br>Junction to heat sink                          | At 180° sine double side cooled<br>Clamping force 5.0kn                       |               |       | 0.011 | °C/W      |
| $F_M$                  | Mounting force                                                       |                                                                               |               | 35    | 47    | KN        |
| $T_{stq}$              | Stored temperature                                                   |                                                                               |               | -40   | 140   | °C        |
| $W_t$                  | Weight                                                               |                                                                               |               |       |       | g         |
| Outline                |                                                                      |                                                                               |               |       |       |           |

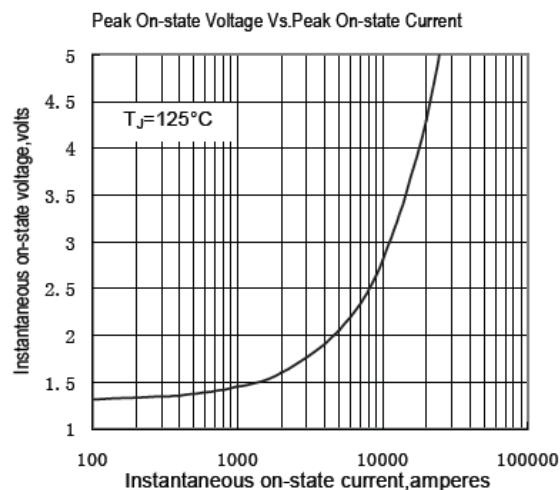


Fig.1

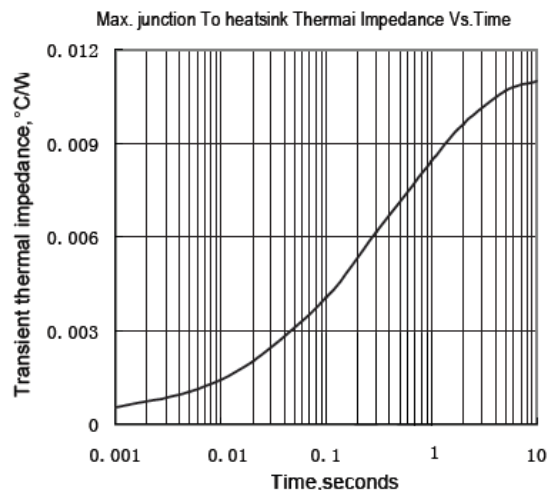


Fig.2

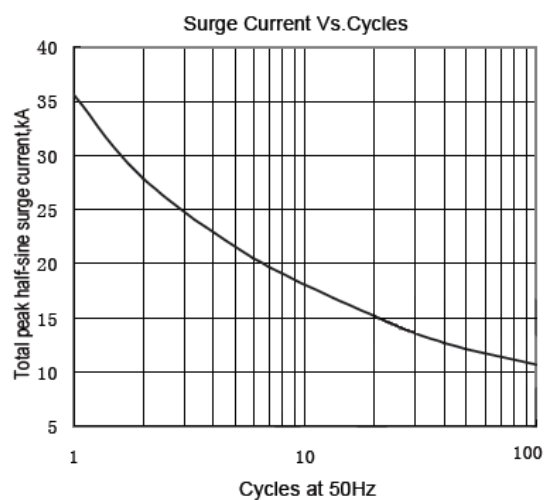


Fig.3

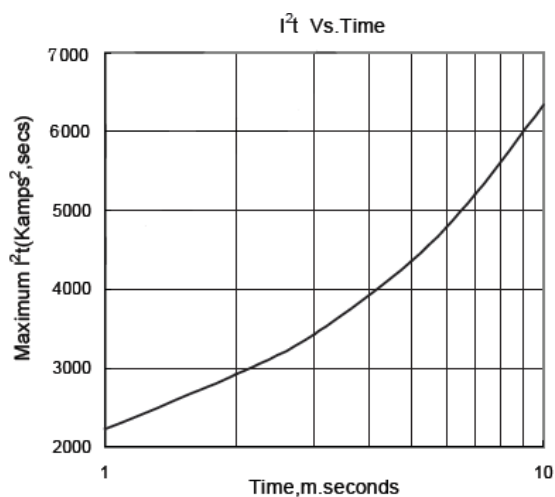


Fig.4

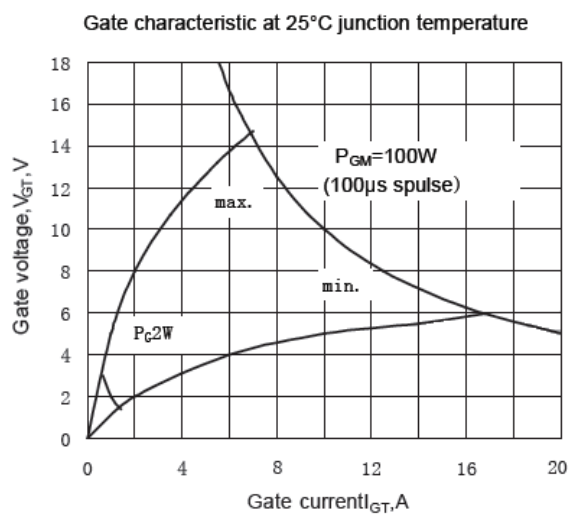


Fig.5

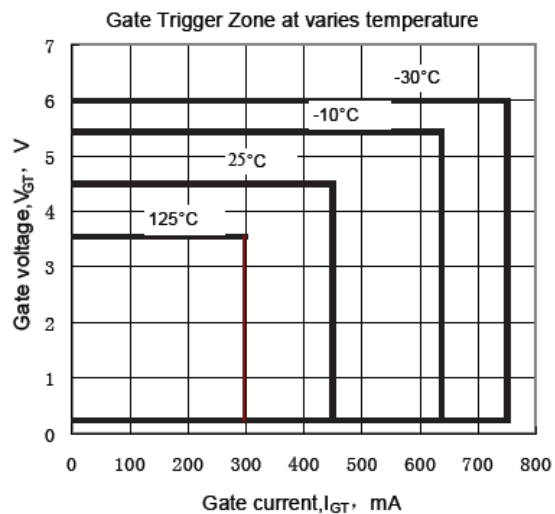
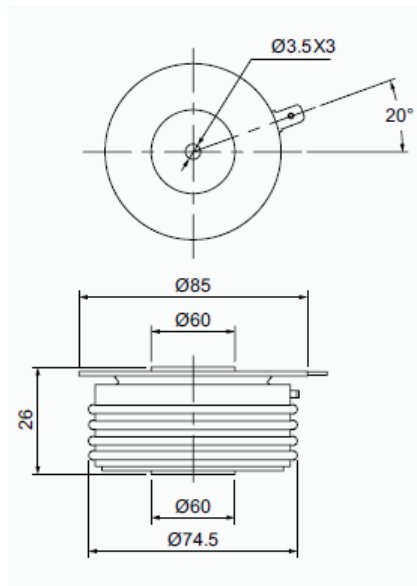
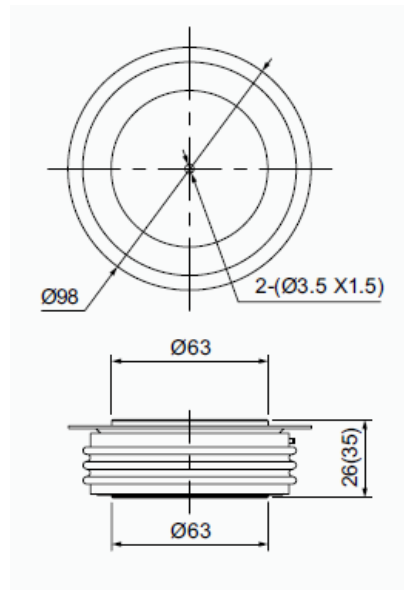


Fig.6

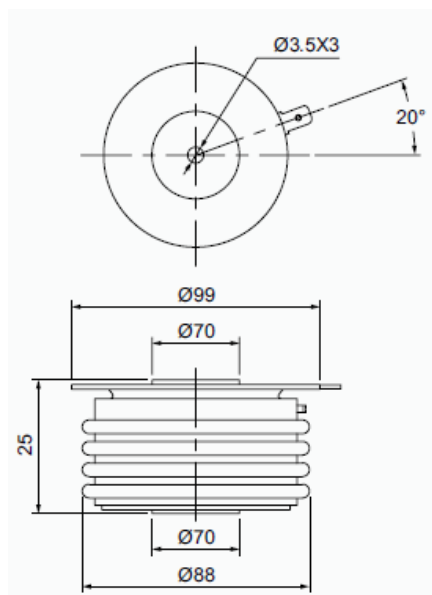
### Outline:



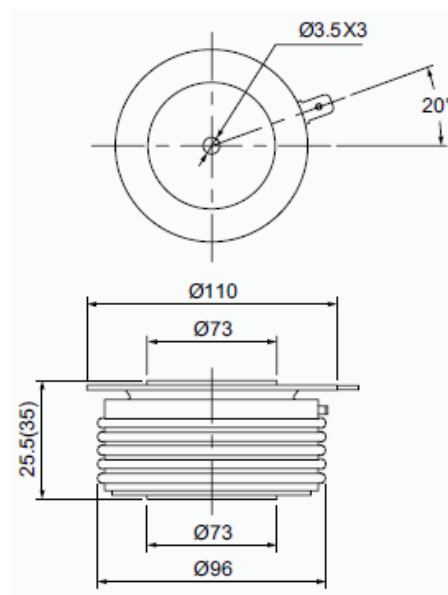
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