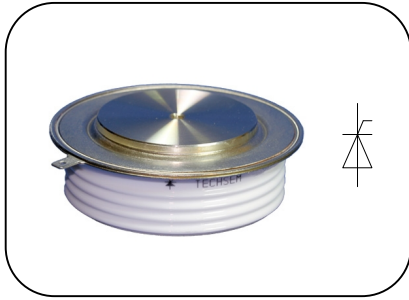


**Features:**

Interdigitated amplifying gates  
Fast turn-on and high di/dt  
Low switching losses  
Short turn-off time  
Hermetic metal cases with ceramic insulators

**Typical Applications**

Inductive heating  
Electronic welders  
Self-commutated inverters  
AC motor speed control  
General power switching applications

**Part No. Y55KAC-KT54cT**

|                    |                     |
|--------------------|---------------------|
| $I_{T(AV)}$        | 1730A               |
| $V_{DRM}, V_{RRM}$ | 800V 1000V<br>1200V |
| $t_q$              | 10~20 $\mu$ s       |

| SYMBOL                 | CHARACTERISTIC                                                       | TEST CONDITIONS                                                                          | $T_j$ ( C) | VALUE |      |       | UNIT                             |
|------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------|-------|------|-------|----------------------------------|
|                        |                                                                      |                                                                                          |            | Min   | Type | Max   |                                  |
| $I_{T(AV)}$            | Mean on-state current                                                | 180 half sine wave 50Hz<br>Double side cooled,<br>$T_c=55$ C                             | 125        |       |      | 1730  | A                                |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | $t_p=10$ ms                                                                              | 125        | 800   |      | 1200  | V                                |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak off-state current<br>Repetitive peak reverse current | at $V_{DRM}$<br>at $V_{RRM}$                                                             | 125        |       |      | 100   | mA                               |
| $I_{TSM}$              | Surge on-state current                                               | 10ms half sine wave                                                                      | 125        |       |      | 17    | kA                               |
| $I^2t$                 | $I^2t$ for fusing coordination                                       | $V_R=0.6V_{RRM}$                                                                         | 125        |       |      | 1445  | A <sup>2</sup> s*10 <sup>3</sup> |
| $V_{TO}$               | Threshold voltage                                                    |                                                                                          | 125        |       |      | 1.27  | V                                |
| $r_T$                  | On-state slope resistance                                            |                                                                                          | 125        |       |      | 0.23  | m $\Omega$                       |
| $V_{TM}$               | Peak on-state voltage                                                | $I_{TM}=3000$ A, $F=26$ kN                                                               | 25         |       |      | 3.20  | 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                            | $V_{DM}=67\%V_{DRM}$ to 3000A,<br>Gate pulse $t_r \leq 0.5\mu$ s $I_{GM}=1.5$ A          | 125        |       |      | 1500  | A/ $\mu$ s                       |
| $Q_{rr}$               | Recovery charge                                                      | $I_{TM}=1000$ A, $t_p=4000\mu$ s,<br>di/dt=-20A/ $\mu$ s, $V_R=100$ V                    | 125        |       | 90   | 110   | $\mu$ C                          |
| $t_q$                  | Circuit commutated turn-off time                                     | $I_{TM}=1000$ A, $t_p=4000\mu$ s, $V_R=100$ V<br>dv/dt=30V/ $\mu$ s, di/dt=-20A/ $\mu$ s | 125        | 10    |      | 20    | $\mu$ s                          |
| $I_{GT}$               | Gate trigger current                                                 | $V_A=12$ V, $I_A=1$ A                                                                    | 25         | 30    |      | 300   | mA                               |
| $V_{GT}$               | Gate trigger voltage                                                 |                                                                                          |            | 0.8   |      | 3.0   | V                                |
| $I_H$                  | Holding current                                                      |                                                                                          |            | 20    |      | 400   | 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                               | At 180° sine double side cooled<br>Clamping force 26kN                                   |            |       |      | 0.018 | C/W                              |
| $R_{th(c-h)}$          | Thermal resistance<br>case to heat sink                              |                                                                                          |            |       |      | 0.004 |                                  |
| $F_m$                  | Mounting force                                                       |                                                                                          |            | 21    |      | 30    | kN                               |
| $T_{vj}$               | Junction temperature                                                 |                                                                                          |            | -40   |      | 125   | C                                |
| $T_{stg}$              | Stored temperature                                                   |                                                                                          |            | -40   |      | 140   | C                                |
| $W_t$                  | Weight                                                               |                                                                                          |            |       | 620  |       | g                                |
| Outline                | KT54cT                                                               |                                                                                          |            |       |      |       |                                  |

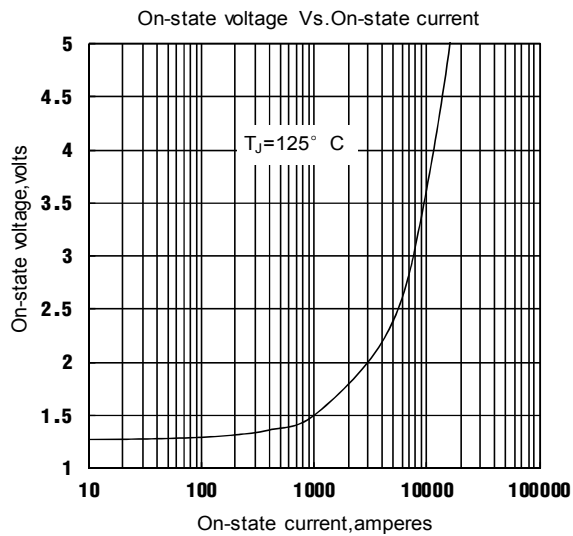


Fig.1

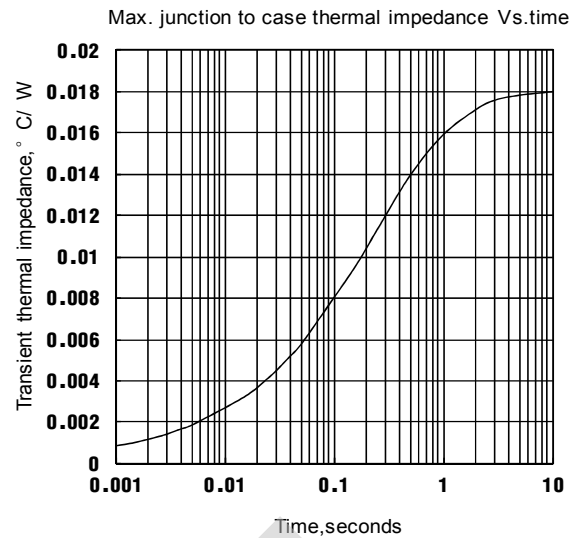


Fig.2

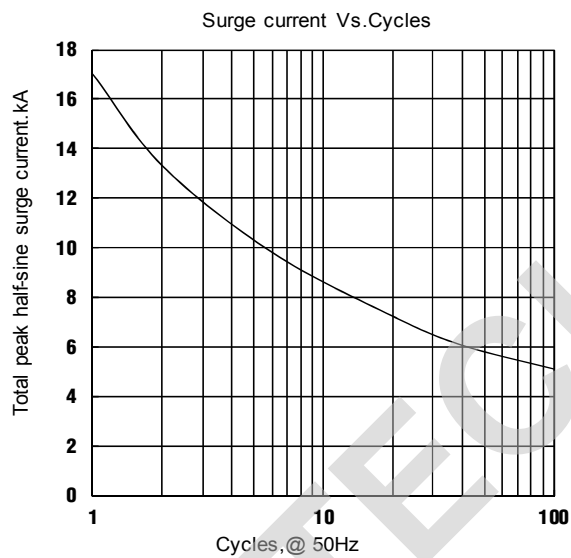


Fig.3

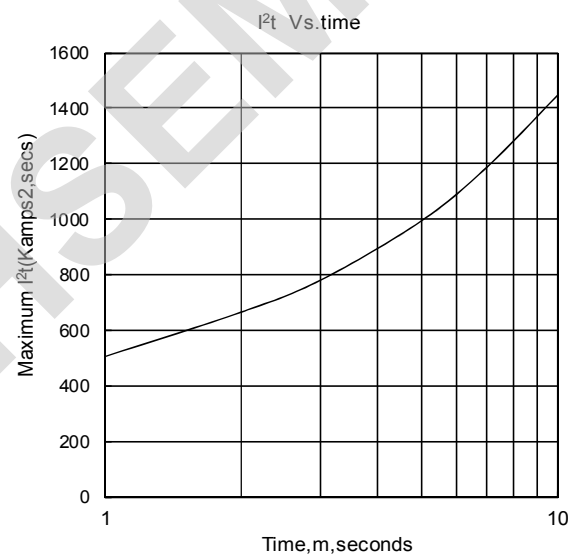


Fig.4

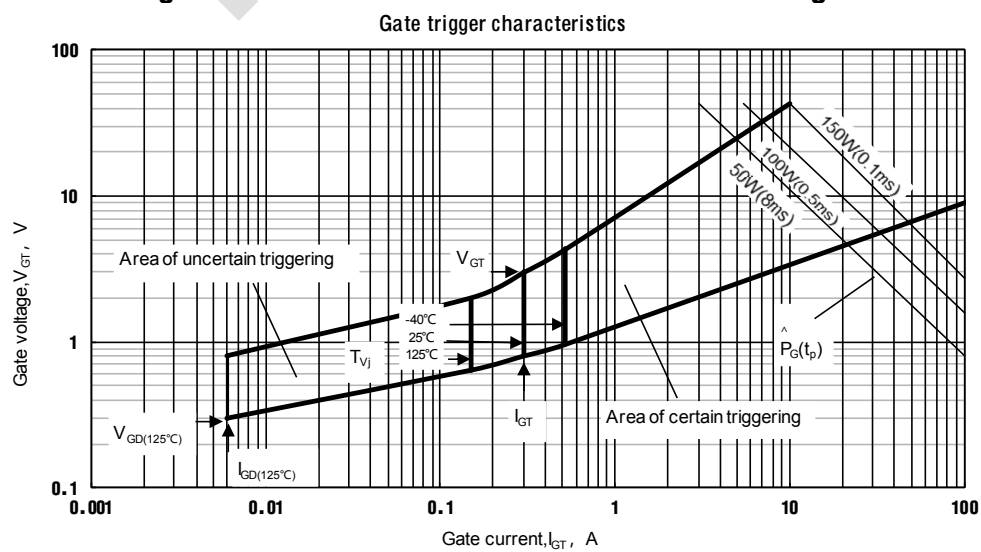
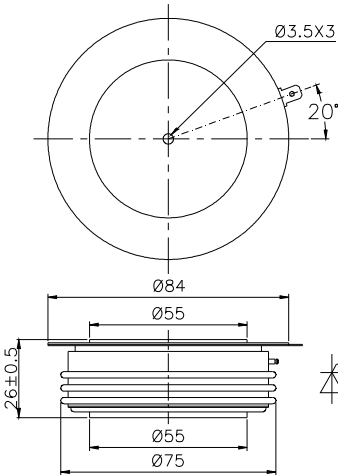


Fig.5

Outline:



TECHSEM reserves the right to change specifications without notice.