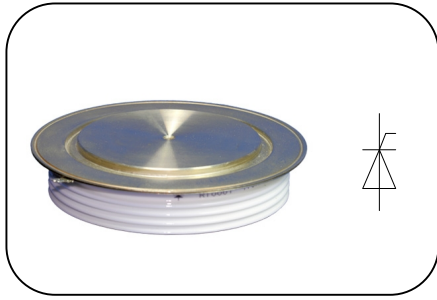


**Features**

- Center amplifying gate
- Metal case with ceramic insulator
- Low on-state and switching losses

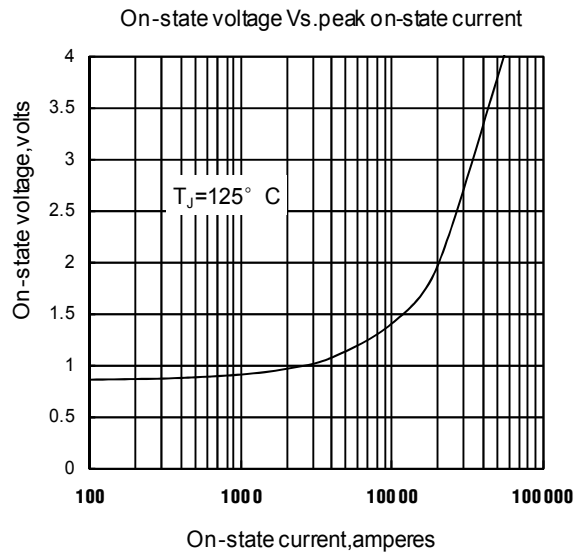
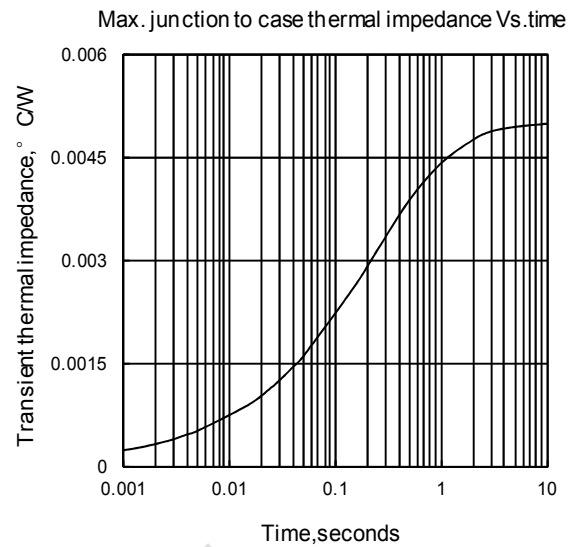
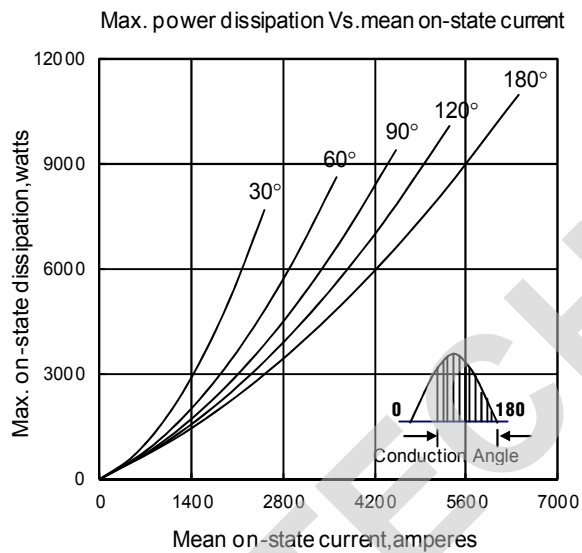
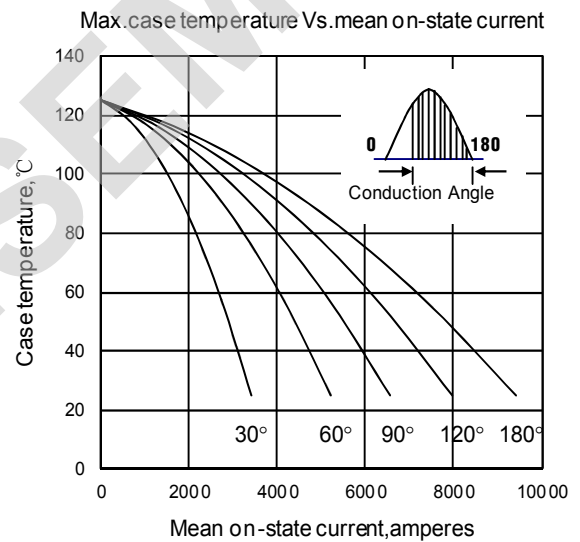
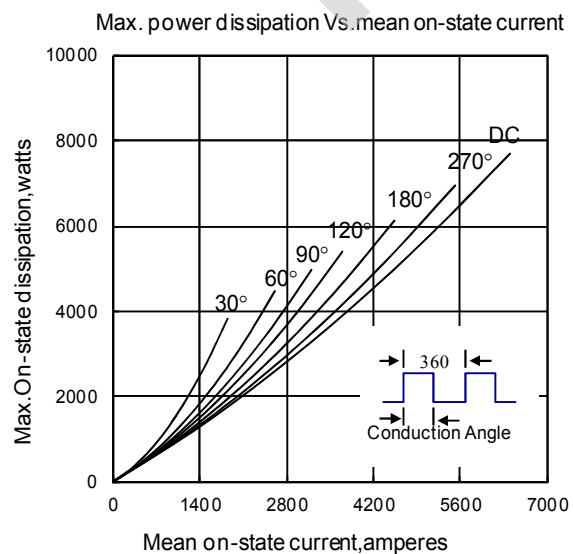
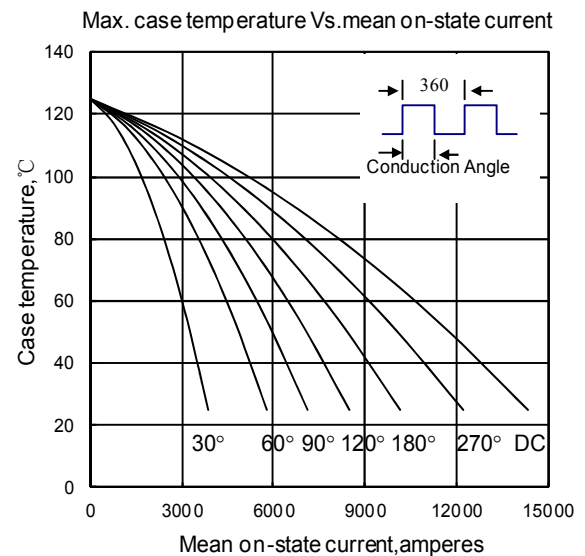
**Typical Applications**

- AC controllers
- DC and AC motor control
- Controlled rectifiers

**Part No. Y100KPC-KT100cT**

|                                      |                   |
|--------------------------------------|-------------------|
| <b><math>I_{T(AV)}</math></b>        | <b>7300A</b>      |
| <b><math>V_{DRM}, V_{RRM}</math></b> | <b>400V 600V</b>  |
|                                      | <b>800V 1000V</b> |
|                                      | <b>1200V</b>      |

| 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,                                                         | $T_C=70^\circ\text{C}$ |       |      | 6400   | A                                |
|                        |                                                                      |                                                                                                        | $T_C=55^\circ\text{C}$ |       |      | 7300   | A                                |
| $V_{DRM}$<br>$V_{RRM}$ | Repetitive peak off-state voltage<br>Repetitive peak reverse voltage | $t_p=10\text{ms}$                                                                                      | 125                    | 400   |      | 1200   | V                                |
| $I_{DRM}$<br>$I_{RRM}$ | Repetitive peak current                                              | at $V_{DRM}$<br>at $V_{RRM}$                                                                           | 125                    |       |      | 300    | mA                               |
| $I_{TSM}$              | Surge on-state current                                               | 10ms half sine wave<br>$V_R=0.6V_{RRM}$                                                                | 125                    |       |      | 74     | kA                               |
| $I^2t$                 | $I^2t$ for fusing coordination                                       |                                                                                                        |                        |       |      | 27380  | $\text{A}^2\text{s} \times 10^3$ |
| $V_{TO}$               | Threshold voltage                                                    |                                                                                                        | 125                    |       |      | 0.850  | V                                |
| $r_T$                  | On-state slope resistance                                            |                                                                                                        |                        |       |      | 0.055  | $\text{m}\Omega$                 |
| $V_{TM}$               | Peak on-state voltage                                                | $I_{TM}=5000\text{A}$ , $F=90\text{kN}$                                                                | 25                     |       |      | 2.00   | V                                |
| $dv/dt$                | Critical rate of rise of off-state voltage                           | $V_{DM}=0.67V_{DRM}$                                                                                   | 125                    |       |      | 1000   | $\text{V}/\mu\text{s}$           |
| $di/dt$                | Critical rate of rise of on-state current                            | $V_{DM}=67\%V_{DRM}$ to 4000A,<br>Gate pulse $t_r \leq 0.5\mu\text{s}$ $I_{GM}=1.5\text{A}$            | 125                    |       |      | 250    | $\text{A}/\mu\text{s}$           |
| $Q_{rr}$               | 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                    |       | 3500 |        | $\mu\text{C}$                    |
| $I_{GT}$               | Gate trigger current                                                 | $V_A=12\text{V}$ , $I_A=1\text{A}$                                                                     | 25                     | 50    |      | 250    | mA                               |
| $V_{GT}$               | Gate trigger voltage                                                 |                                                                                                        |                        | 0.8   |      | 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                               | sine: double side cooled<br>Clamping force 90kN                                                        |                        |       |      | 0.0050 | C/W                              |
| $R_{th(c-h)}$          | Thermal resistance<br>case to heatsink                               |                                                                                                        |                        |       |      | 0.0015 |                                  |
| $F_m$                  | Mounting force                                                       |                                                                                                        |                        | 81    |      | 108    | kN                               |
| $T_{vj}$               | Junction temperature                                                 |                                                                                                        |                        | -40   |      | 125    | °C                               |
| $T_{stg}$              | Stored temperature                                                   |                                                                                                        |                        | -40   |      | 140    | °C                               |
| $W_t$                  | Weight                                                               |                                                                                                        |                        |       | 2000 |        | g                                |
| Outline                | KT100cT                                                              |                                                                                                        |                        |       |      |        |                                  |

**Fig1****Fig2****Fig3****Fig4****Fig5****Fig6**

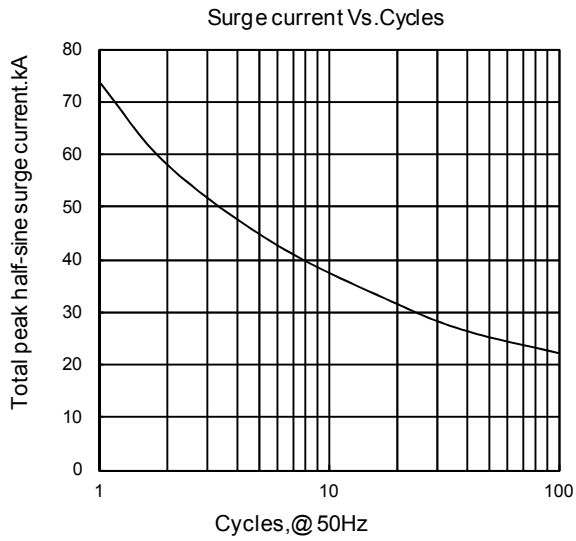


Fig7

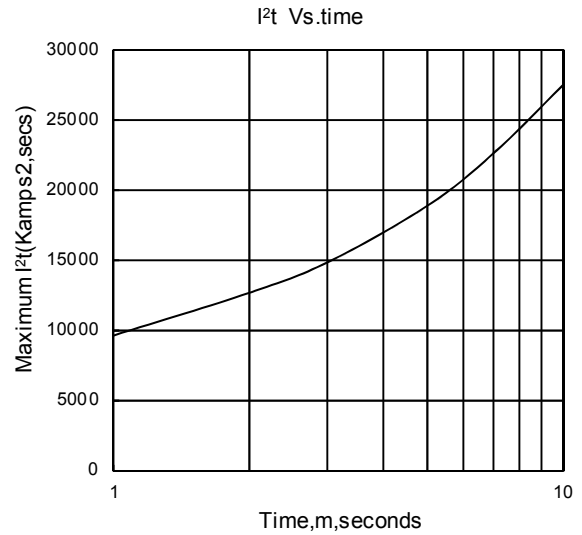


Fig8

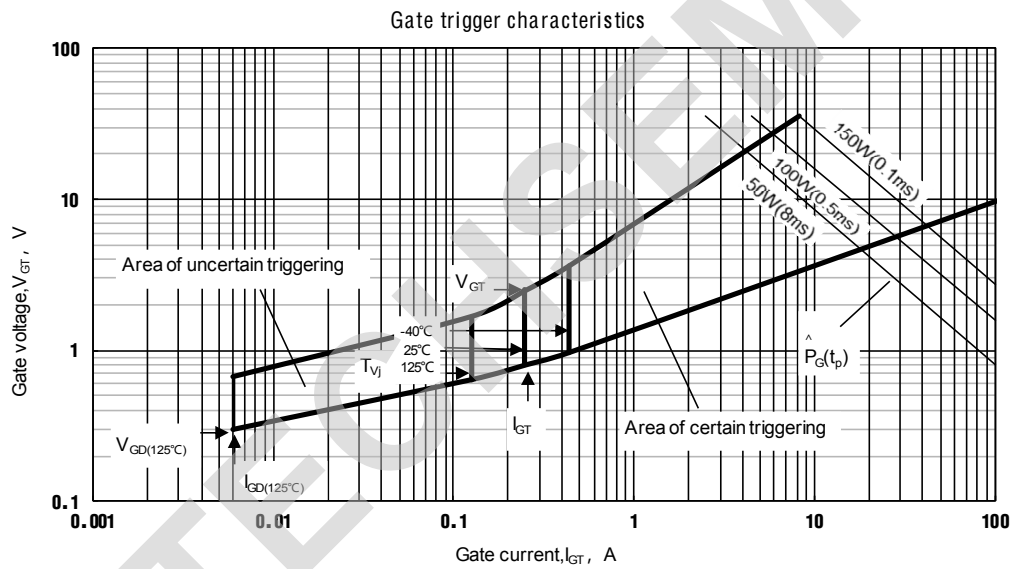
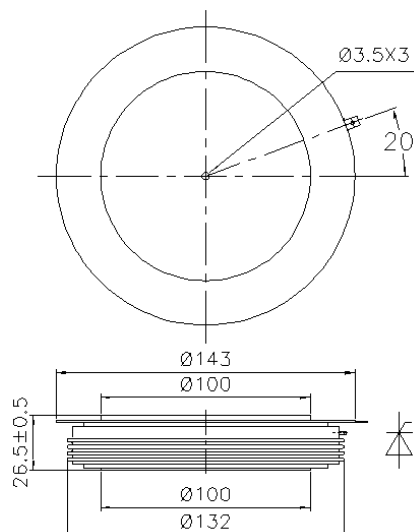


Fig.9

## Outline:



TECHSEM reserves the right to change specifications without notice.