

## Features

- Full blocking capability over wide temperature range
- Pressure contacts technology for high reliability
- Highest robustness

## Key Parameters

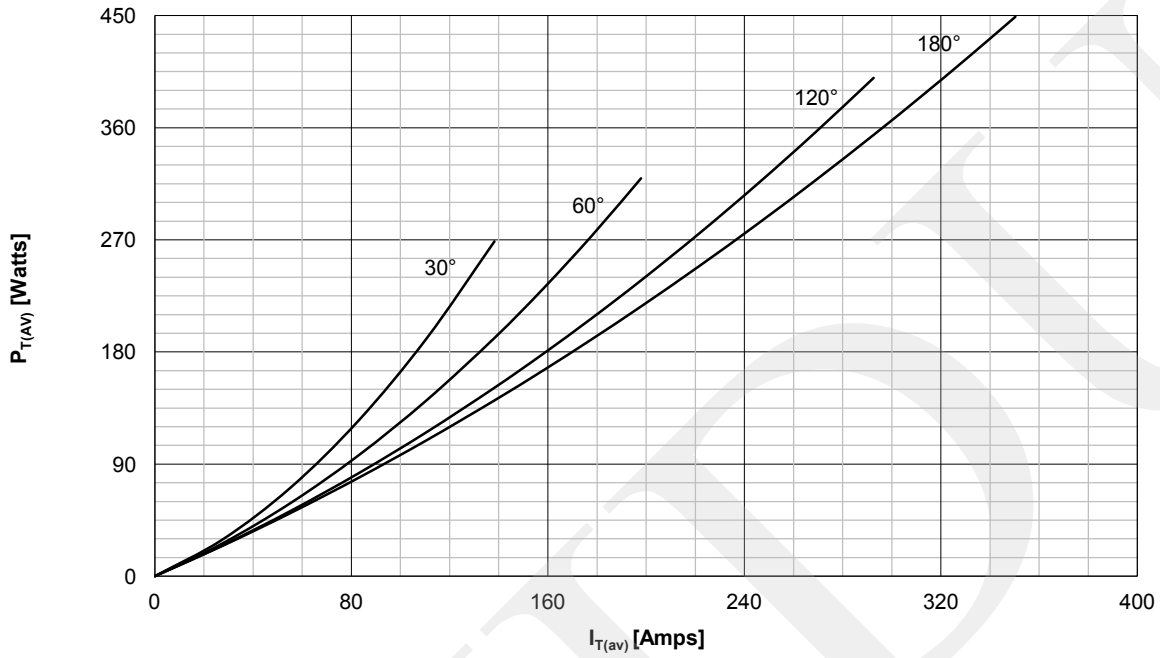
|                     |          |
|---------------------|----------|
| $V_{DRM} / V_{RRM}$ | = 1600V  |
| $I_{T(AV)}$         | = 350A   |
| $I_{TSM}$           | = 9000A  |
| $V_{T(TO)}$         | = 0.85V  |
| $r_T$               | = 0.50mΩ |

## Applications

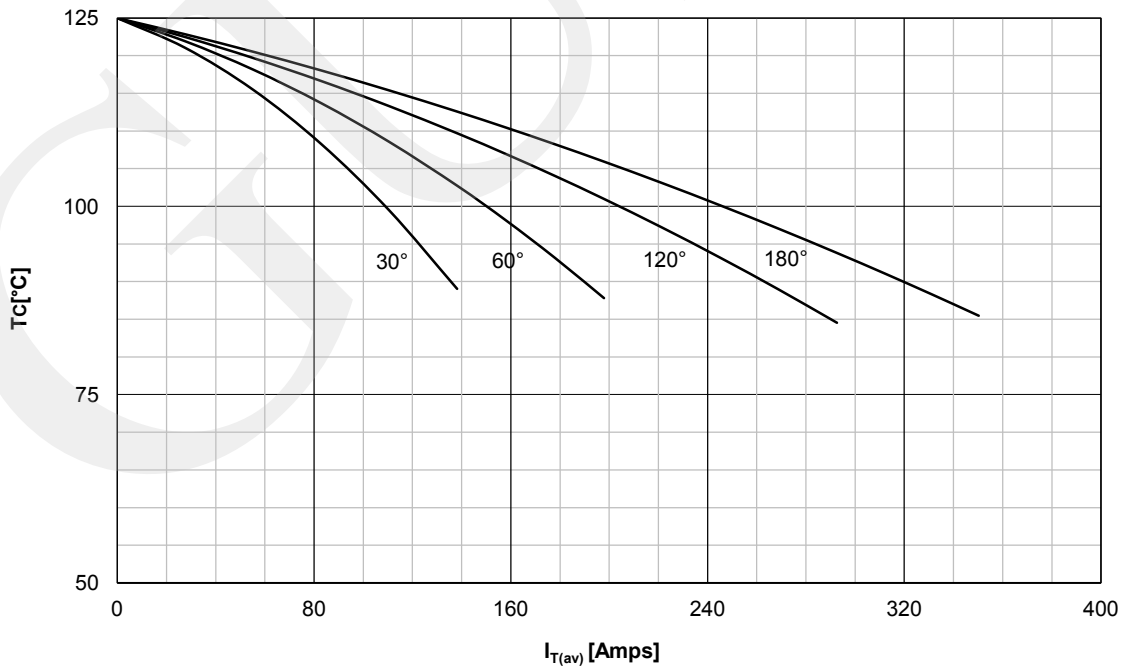
- Power Supplies
- AC Controllers
- Controlled Rectifiers
- DC motor control

| Symbol            | Characteristic                             | Conditions                                  | T <sub>J</sub> [°C] | Value             | Unit             |
|-------------------|--|---|---------------------|-------------------|------------------|
| <b>BLOCKING</b>   |  |   |                     |                   |                  |
| $V_{RRM}$         | Repetitive peak reverse voltage            |   | 125                 | 200 - 1600        | V                |
| $V_{RSM}$         | Non-repetitive peak reverse voltage        |   | 125                 | 300 - 1700        | V                |
| $V_{DRM}$         | Repetitive peak off-state voltage          |   | 125                 | 200 - 1600        | V                |
| $I_{RRM}$         | Repetitive peak reverse current            | $V = V_{RRM}$                               | 125                 | 80                | mA               |
| $I_{DRM}$         | Repetitive peak off-state current          | $V = V_{DRM}$                               | 125                 | 80                | mA               |
| <b>CONDUCTING</b> |  |   |                     |                   |                  |
| $I_{T(AV)}$       | Mean on state current                      | 180° sin ,50 Hz, T <sub>c</sub> = 85°C      |                     | 350               | A                |
| $I_{TRMS}$        | RMS on state current                       |   |                     | 550               | A                |
| $I_{TSM}$         | Surge on state current                     | Sine wave, 10 ms<br>Without reverse voltage | 25                  | 9000              | A                |
|                   |  |   | 125                 | 8000              | A                |
| $I^2 t$           | $I^2 t$                                    | Sine wave, 10 ms<br>Without reverse voltage | 25                  | $405 \times 10^3$ | A <sup>2</sup> s |
|                   |  |   | 125                 | $320 \times 10^3$ | A <sup>2</sup> s |
| $V_T$             | Peak on state voltage                      | Peak on state current = 1100A               | 125                 | 1.65              | V                |
| $V_{T(TO)}$       | Threshold voltage                          |   | 125                 | 0.85              | V                |
| $r_T$             | On state slope resistance                  |   | 125                 | 0.50              | mΩ               |
| <b>SWITCHING</b>  |  |   |                     |                   |                  |
| di/dt             | Critical rate of rise of on-state current  | Repetitive                                  | 125                 | 200               | A/μs             |
| dv/dt             | Critical rate of rise of off-state voltage | $V_{DR} = 67\% V_{DRM}$                     | 125                 | 1000              | V/μs             |
| <b>GATE</b>       |  |   |                     |                   |                  |
| $I_{gt}$          | Gate trigger current                       | $V_D = 6V$                                  | 25                  | 200               | mA               |
| $V_{gt}$          | Gate trigger voltage                       | $V_D = 6V$                                  | 25                  | 3.0               | V                |
| $I_H$             | Holding current                            | $V_D = 6V$ , gate open circuit              | 25                  | 600               | mA               |
| $I_L$             | Latching current                           | $V_D = 6V$                                  | 25                  | 1000              | mA               |
| <b>MOUNTING</b>   |  |   |                     |                   |                  |
| $R_{th(j-c)}$     | Thermal impedance, sin 180°                | Junction to case                            |                     | 0.088             | °C/W             |
| $R_{th(c-h)}$     | Thermal impedance                          | Case to heatsink                            |                     | 0.04              | °C/W             |
| $T_j$             | Max. junction temperature                  |   |                     | 125               | °C               |
| $T_{stg}$         | Storage temperature                        |   |                     | -40 ... 125       | °C               |
| M                 | Mounting Torque                            |   |                     | 2.5 - 2.7         | Kgm              |
| W                 | Weight (Approx.)                           |   |                     | 520               | gm               |

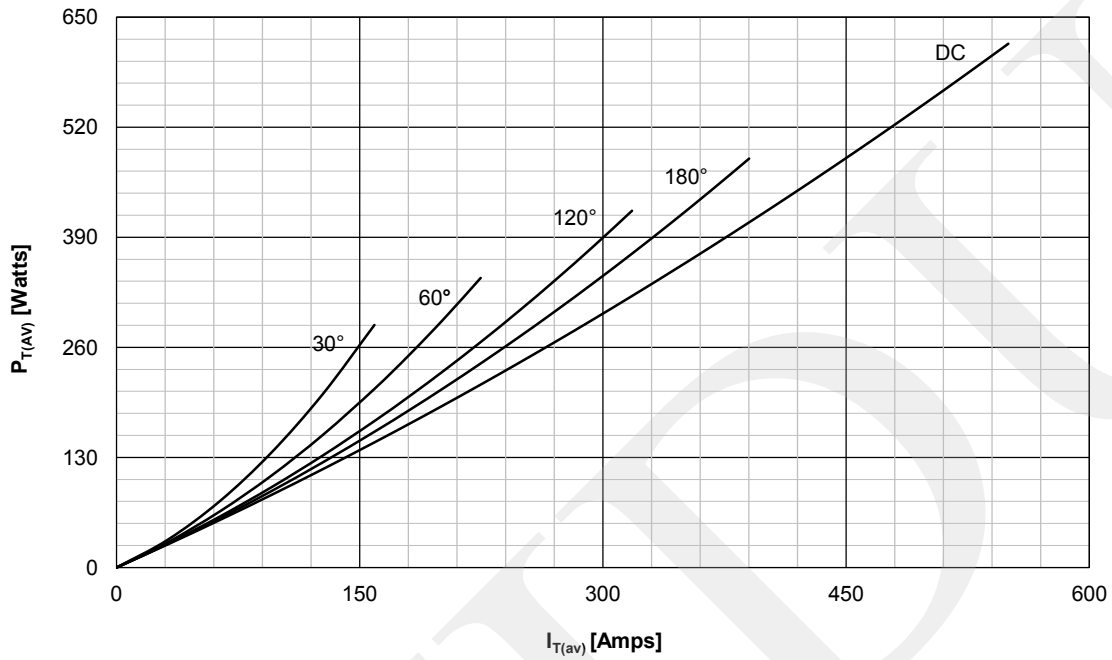
DISSIPATION CHARACTERISTICS  
SINE WAVE



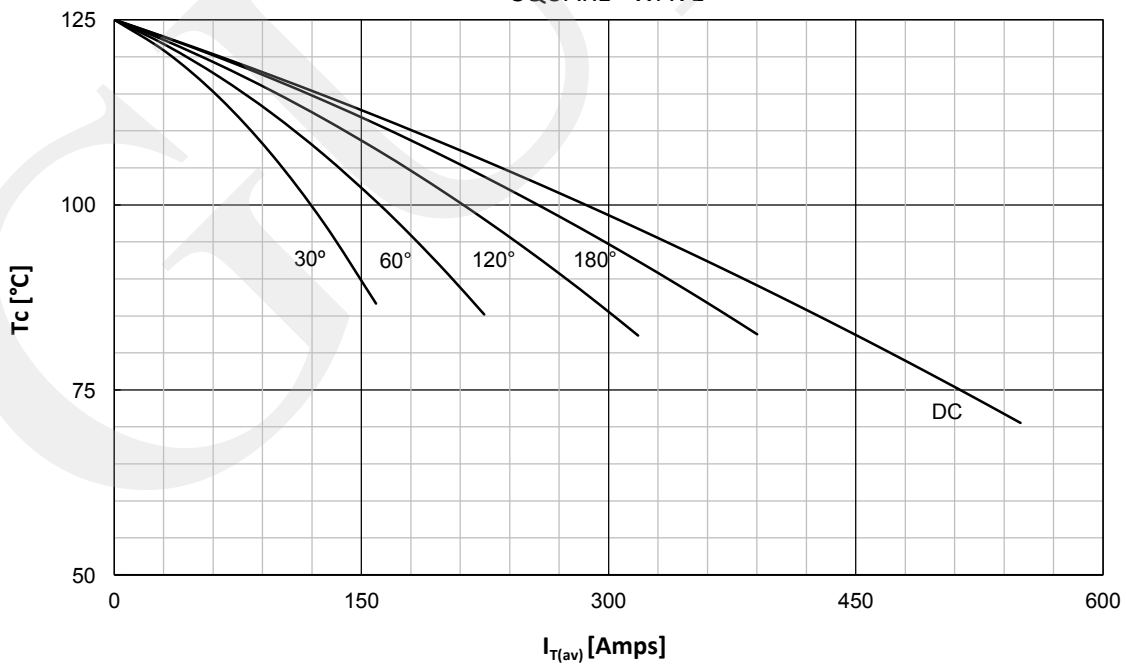
ON STATE CURRENT DERATING CURVE  
SINE WAVE



DISSIPATION CHARACTERISTICS  
SQUARE WAVE

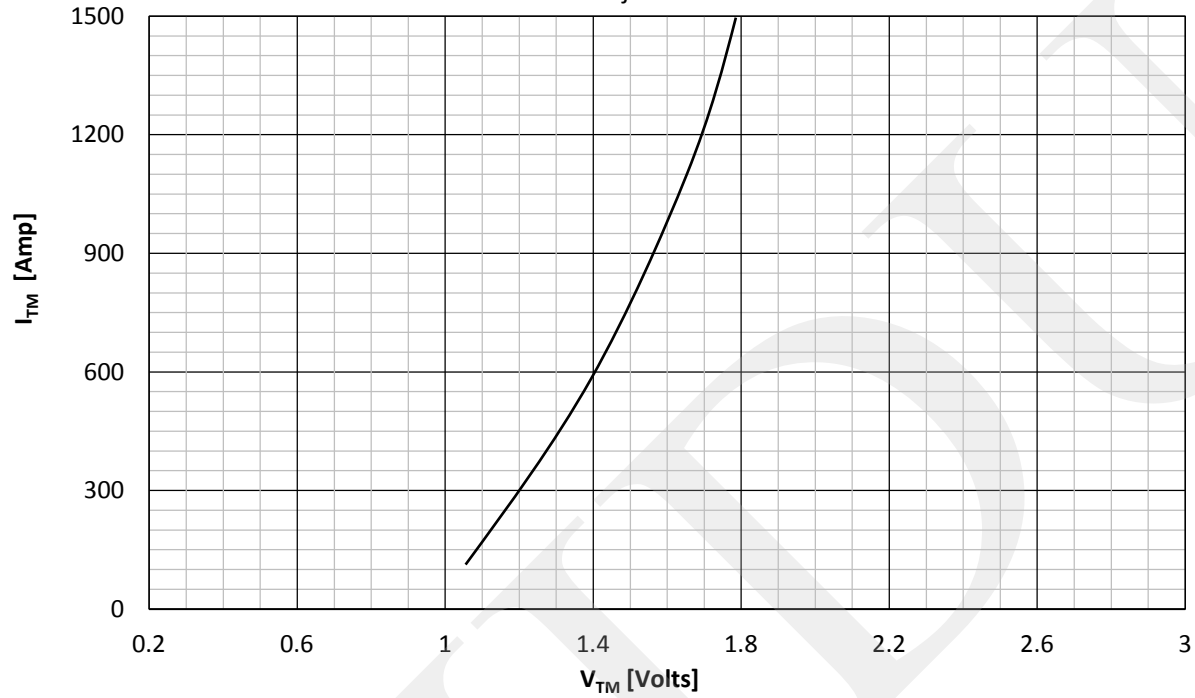


ON STATE CURRENT DERATING CURVE  
SQUARE WAVE

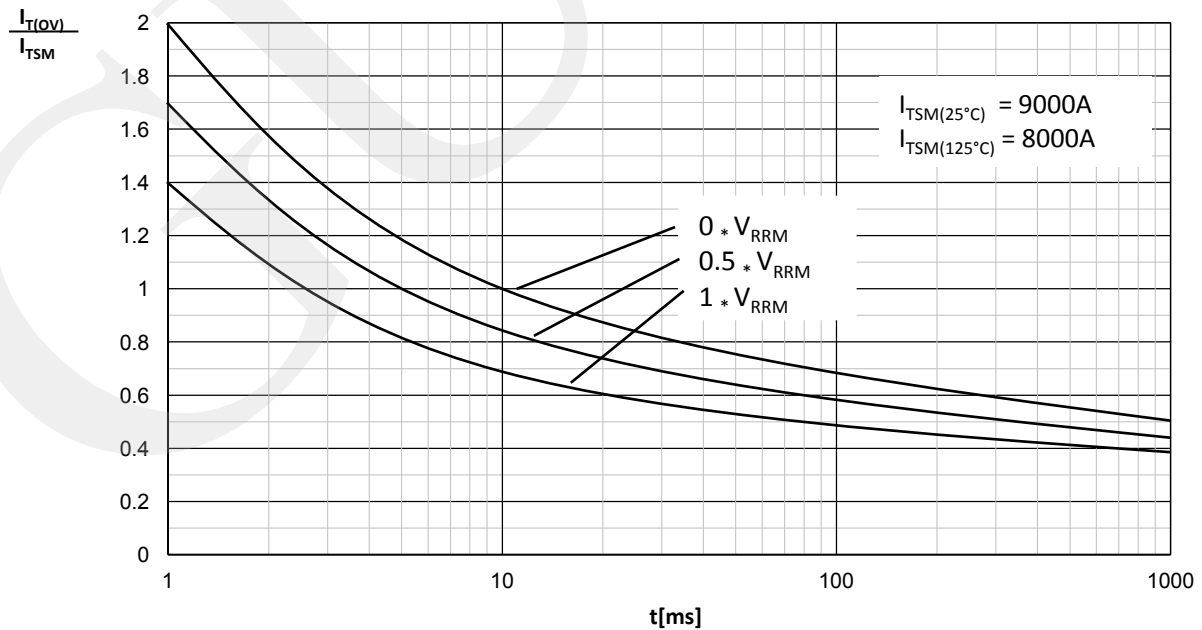


ON -STATE CHARACTERISTICS

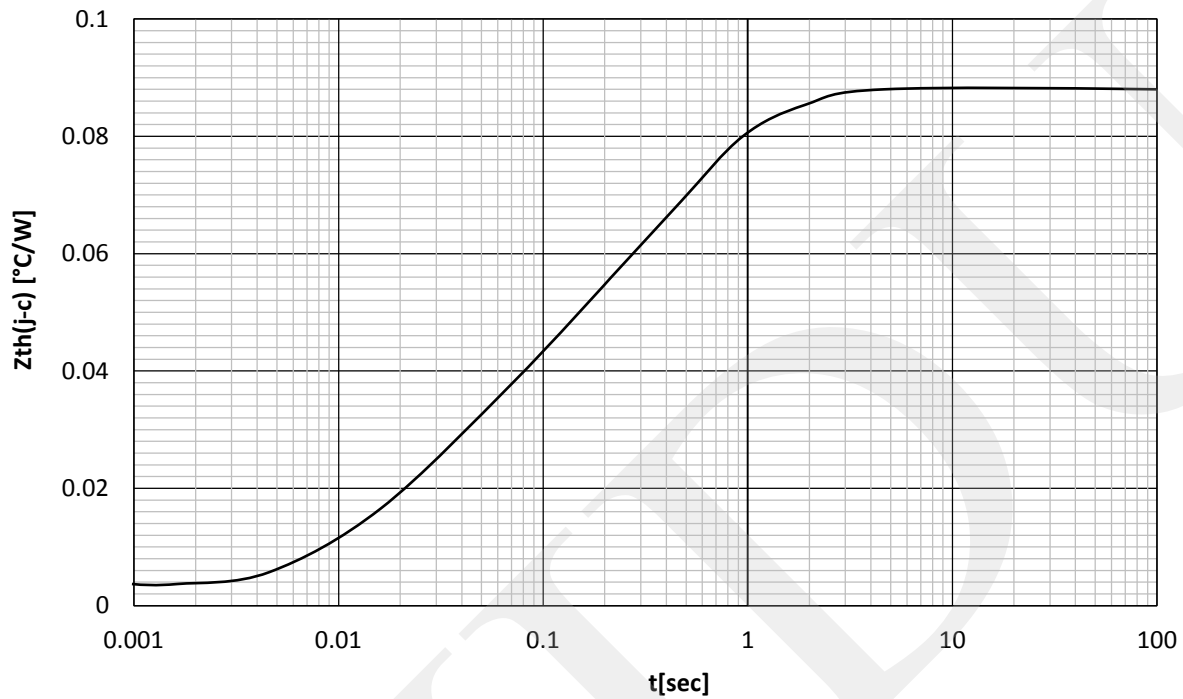
$T_j = 125^\circ\text{C}$



SURGE CHARACTERISTICS



**TRANSIENT THERMAL IMPEDANCE**



**ORDERING INFORMATION**

| <b>GDKP</b>             | <b>351</b>   | <b>S</b>                 | <b>XX</b>   | <b>U</b>                     |
|-------------------------|--------------|--------------------------|---|------------------------------|
| Phase Control Thyristor | Current Code | Stud / Flat Base Version | Voltage Code<br>Code X 100 =<br>$V_{DRM}/V_{RRM}$ | Stud Threads<br>U = 3/4" UNF |

Order Code GDKP351S16U : 1600V  $V_{DRM}, V_{RRM}$ , Stud base Thyristor with 3/4" UNF threads

