

# GPTR2360

## PHASE CONTROLLED SCR

High reliability operation  
DC power supply  
AC drives

|                        |               |
|------------------------|---------------|
| <b>VOLTAGE UP TO</b>   | <b>1600 V</b> |
| <b>AVERAGE CURRENT</b> | <b>3600 A</b> |
| <b>SURGE CURRENT</b>   | <b>50 kA</b>  |

### BLOCKING CHARACTERISTICS

| Characteristic   | Conditions                              | Value  |
|------------------|---|--|
| V <sub>RRM</sub> | Repetitive peak reverse voltage         | 1600 V   |
| V <sub>RSM</sub> | Non-repetitive peak reverse voltage     | 1700 V   |
| V <sub>DRM</sub> | Repetitive peak off-state voltage       | 1600 V   |
| I <sub>DRM</sub> | Repetitive peak off-state current, max. | V <sub>DRM</sub> , single phase, half wave, T <sub>j</sub> = T <sub>jmax</sub> |
| I <sub>RRM</sub> | Repetitive peak reverse current, max.   | V <sub>RRM</sub> , single phase, half wave, T <sub>j</sub> = T <sub>jmax</sub> |

### ON-STATE CHARACTERISTICS

|                     |  |  |                         |
|---------------------|--|--|-------------------------|
| I <sub>T(AV)</sub>  | Average on-state current                 | Sine wave, 180° conduction, T <sub>h</sub> = 55 °C                                       | 3600 A                  |
| I <sub>T(RMS)</sub> | R.M.S. on-state current                  | Sine wave, 180° conduction, T <sub>h</sub> = 55 °C                                       | 5655 A                  |
| I <sub>TSM</sub>    | Surge on-state current                   | Non rep. half sine wave, 50 Hz, V <sub>R</sub> = 0 V, T <sub>j</sub> = T <sub>jmax</sub> | 50 kA                   |
| I <sup>2</sup> t    | I <sup>2</sup> t for fusing coordination |  | 12500 kA <sup>2</sup> s |
| V <sub>T(TO)</sub>  | Threshold voltage                        | T <sub>j</sub> = T <sub>jmax</sub>   | 0.94 V                  |
| r <sub>T</sub>      | On-state slope resistance                | T <sub>j</sub> = T <sub>jmax</sub>   | 0.066 mΩ                |
| V <sub>TM</sub>     | Peak on-state voltage, max               | On-state current I <sub>T</sub> = 4000 A , T <sub>j</sub> = 25 °C                        | 1.25 V                  |
| I <sub>H</sub>      | Holding current, max                     | T <sub>j</sub> = 25 °C   | 170 mA                  |
| I <sub>L</sub>      | Latching current, typ                    | T <sub>j</sub> = 25 °C   | 1500 mA                 |

### TRIGGERING CHARACTERISTICS

|                    |                                |  |        |
|--------------------|--------------------------------|--|--------|
| V <sub>GT</sub>    | Gate trigger voltage           | T <sub>j</sub> = 25 °C, V <sub>D</sub> = 5 V                               | 3 V    |
| I <sub>GT</sub>    | Gate trigger current           | T <sub>j</sub> = 25 °C, V <sub>D</sub> = 5 V                               | 250 mA |
| V <sub>GD</sub>    | Non-trigger voltage            | V <sub>D</sub> = 67% V <sub>RRM</sub> , T <sub>j</sub> = T <sub>jmax</sub> | 0.2 V  |
| P <sub>GM</sub>    | Peak gate power dissipation    | Pulse width 0.5 ms   | 100 W  |
| P <sub>G(AV)</sub> | Average gate power dissipation |  | 5 W    |
| I <sub>FGM</sub>   | Peak gate current              |  | 10 A   |
| V <sub>FGM</sub>   | Peak gate voltage (forward)    |  | 12 V   |
| V <sub>RGM</sub>   | Peak gate voltage (reverse)    |  | 10 V   |

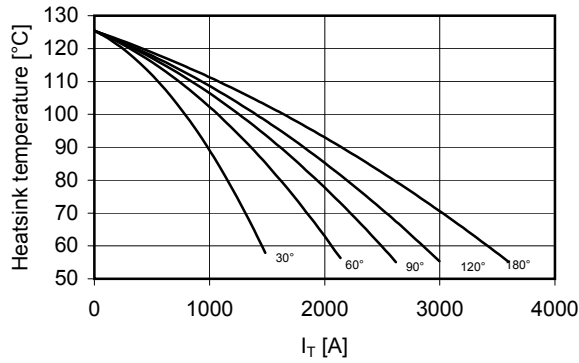
### SWITCHING CHARACTERISTICS

|                |  |  |           |
|----------------|--|--|-----------|
| di/dt          | Critical rate of rise of on-state current  | T <sub>j</sub> = T <sub>jmax</sub>   | 200 A/μs  |
| dV/dt          | Critical rate of rise of off-state voltage | T <sub>j</sub> = T <sub>jmax</sub>   | 1000 V/μs |
| t <sub>q</sub> | Turn-off time, typ                         | T <sub>j</sub> = T <sub>jmax</sub> , I <sub>T</sub> = 800 A, di/dt = -12.5 A/μs<br>V <sub>R</sub> = 100 V, V <sub>D</sub> = 67% V <sub>DRM</sub> , dV/dt = 20 V/μs | 400 μs    |

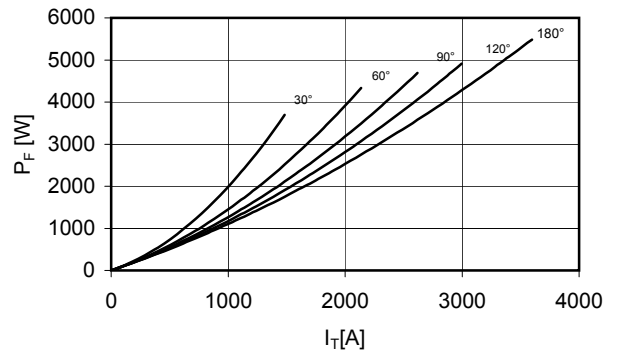
### THERMAL AND MECHANICAL CHARACTERISTICS

|                      |                                       |                    |              |
|----------------------|---------------------------------------|--------------------|--------------|
| R <sub>th(j-c)</sub> | Thermal resistance (junction to case) | Double side cooled | 0.010 °C/W   |
| R <sub>th(c-h)</sub> | Thermal resistance (case to heatsink) | Double side cooled | 0.003 °C/W   |
| T <sub>jmax</sub>    | Max operating junction temperature    |                    | 125 °C       |
| T <sub>stg</sub>     | Storage temperature                   |                    | -40 / 125 °C |
| F                    | Clamping force ± 10%                  |                    | 50 kN        |
|                      | Mass                                  |                    | 650 g        |

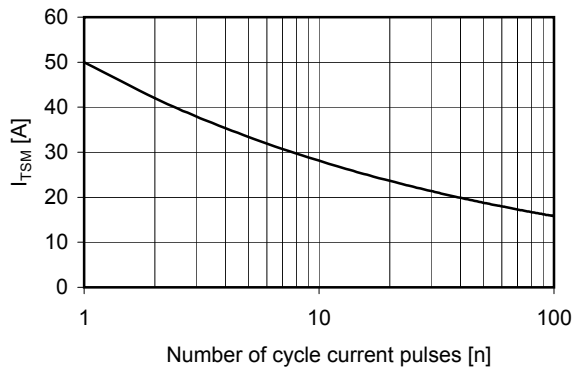
**Current rating - sine wave**



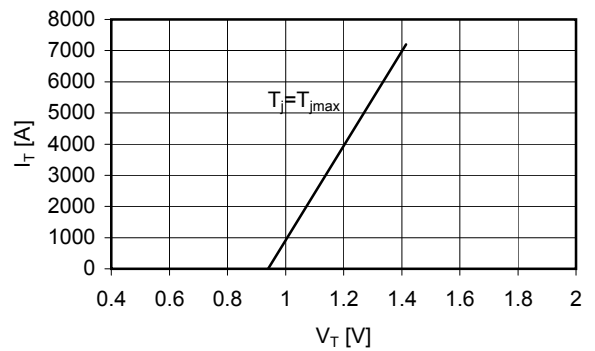
**Power loss - sine wave**



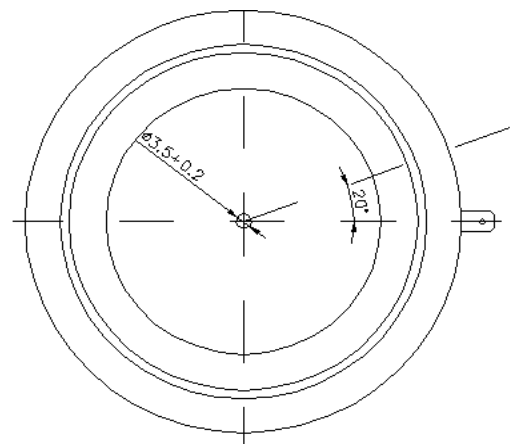
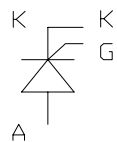
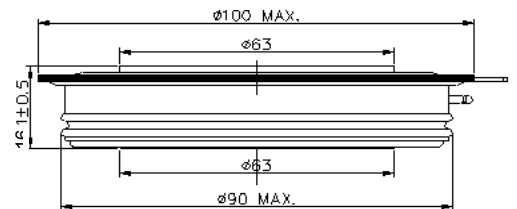
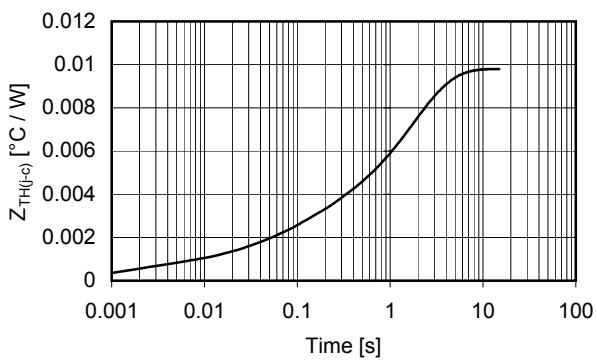
**Maximum surge current d.s. cooled**



**On-state voltage drop**



**Thermal impedance (j-c)**



In the interest of product improvement Green Power Solutions reserves the right to change any specification given in this data sheet without notice.