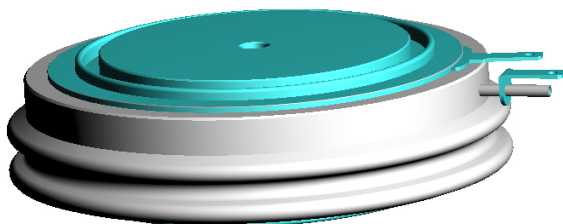


GPTR3190

PHASE CONTROLLED SCR



High reliability operation
DC power supply
AC drives

VOLTAGE UP TO 2400 V
AVERAGE CURRENT 1900 A
SURGE CURRENT 22 kA

BLOCKING CHARACTERISTICS

| Characteristic | Conditions | Value |
|------------------|---|--|
| V _{RRM} | Repetitive peak reverse voltage | 2400 V |
| V _{RSM} | Non-repetitive peak reverse voltage | 2500 V |
| V _{DRM} | Repetitive peak off-state voltage | 2400 V |
| I _{DRM} | Repetitive peak off-state current, max. | V _{DRM} , single phase, half wave, T _j = T _{jmax} |
| I _{RRM} | Repetitive peak reverse current, max. | V _{RRM} , single phase, half wave, T _j = T _{jmax} |

ON-STATE CHARACTERISTICS

| | | | |
|---------------------|--|--|------------------------|
| I _{T(AV)} | Average on-state current | Sine wave, 180° conduction, Th = 55 °C | 1900 A |
| I _{T(RMS)} | R.M.S. on-state current | Sine wave, 180° conduction, Th = 55 °C | 2984 A |
| I _{TSM} | Surge on-state current | Non rep. half sine wave, 50 Hz, V _R = 0 V, T _j = T _{jmax} | 22 kA |
| I ² t | I ² t for fusing coordination | | 2420 kA ² s |
| V _{T(TO)} | Threshold voltage | T _j = T _{jmax} | 1,04 V |
| r _T | On-state slope resistance | T _j = T _{jmax} | 0,23 mΩ |
| V _{TM} | Peak on-state voltage, max | On-state current I _T = 5000 A, T _j = 25 °C | 2,15 V |
| I _H | Holding current, max | T _j = 25 °C | mA |
| I _L | Latching current, typ | T _j = 25 °C | mA |

TRIGGERING CHARACTERISTICS

| | | | |
|--------------------|--------------------------------|--|--------|
| V _{GT} | Gate trigger voltage | T _j = 25 °C, V _D = 5 V | 3 V |
| I _{GT} | Gate trigger current | T _j = 25 °C, V _D = 5 V | 400 mA |
| V _{GD} | Non-trigger voltage | V _D = 67% V _{RRM} , T _j = T _{jmax} | V |
| P _{GM} | Peak gate power dissipation | Pulse width 0.5 ms | W |
| P _{G(AV)} | Average gate power dissipation | | W |
| I _{FGM} | Peak gate current | | A |
| V _{FGM} | Peak gate voltage (forward) | | V |
| V _{RGM} | Peak gate voltage (reverse) | | V |

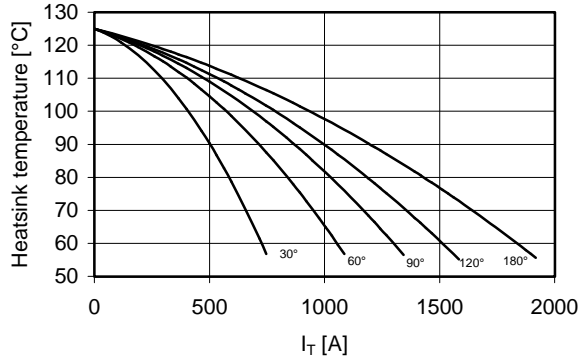
SWITCHING CHARACTERISTICS

| | | | |
|----------------|--|--|-----------|
| di/dt | Critical rate of rise of on-state current | T _j = T _{jmax} | 200 A/μs |
| dV/dt | Critical rate of rise of off-state voltage | T _j = T _{jmax} | 1000 V/μs |
| t _q | Turn-off time, typ | T _j = T _{jmax} , I _T = 800 A, di/dt = -12.5 A/μs V _R = 100 V, V _D = 67% V _{DRM} , dV/dt = 20 V/μs | 400 μs |

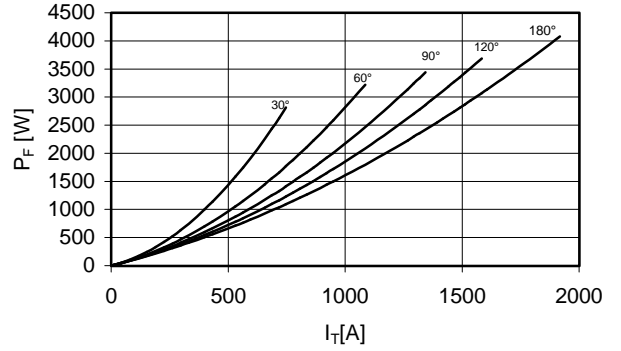
THERMAL AND MECHANICAL CHARACTERISTICS

| | | | |
|----------------------|---------------------------------------|--------------------|--------------|
| R _{th(j-c)} | Thermal resistance (junction to case) | Double side cooled | 0,016 °C/W |
| R _{th(c-h)} | Thermal resistance (case to heatsink) | Double side cooled | 0,001 °C/W |
| T _{jmax} | Max operating junction temperature | | 125 °C |
| T _{stg} | Storage temperature | | -40 / 125 °C |
| F | Clamping force ± 10% | | 30 kN |
| | Mass | | 1,4 g |

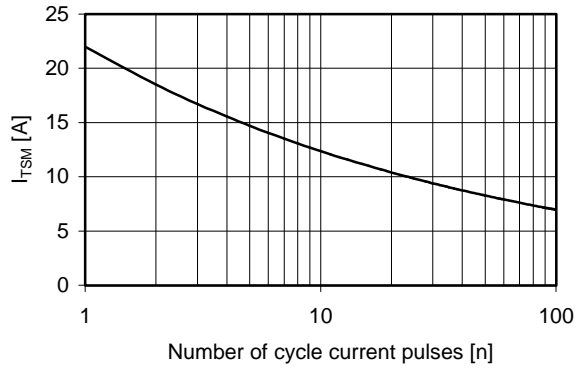
Current rating - sine wave



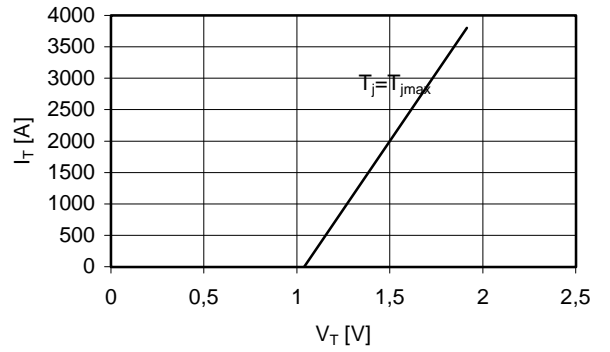
Power loss - sine wave



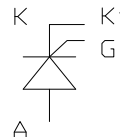
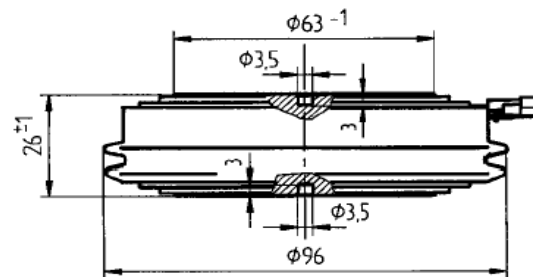
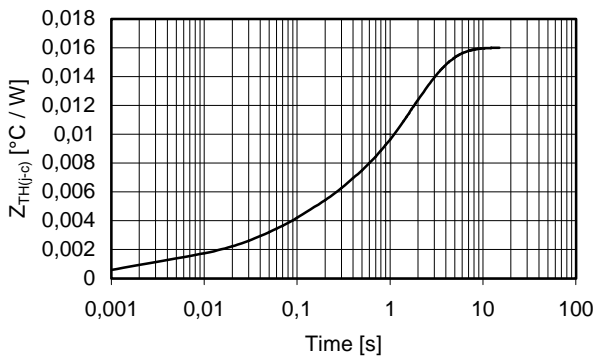
**Maximum surge current
d.s. cooled**



On-state voltage drop



Thermal impedance (j-c)



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