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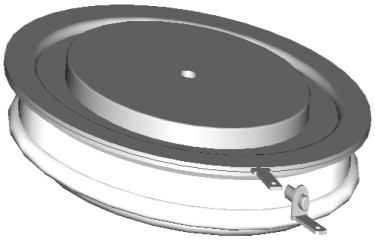
http://gpsemi.it/pdf/GPTG3066.pdf



# GPTG3066

## PHASE CONTROLLED SCR

High reliability operation

DC power supply

AC drives

| | | |
|---|---|---|
| **VOLTAGE UP TO** | **2000** | **V** |
| **AVERAGE CURRENT** | **660** | **A** |
| **SURGE CURRENT** | **7.5** | **kA** |

### BLOCKING CHARACTERISTICS

| Characteristic | | Conditions | Value | |
|---|---|---|---|---|
| $V_{RRM}$ | Repetitive peak reverse voltage | | (*) 2000 | V |
| $V_{RSM}$ | Non-repetitive peak reverse voltage | | (*) 2100 | V |
| $V_{DRM}$ | Repetitive peak off-state voltage | | (*) 2000 | V |
| $I_{DRM}$ | Repetitive peak off-state current, max. | $V_{DRM}$, single phase, half wave, Tj = Tjmax | 50 | mA |
| $I_{RRM}$ | Repetitive peak reverse current, max. | $V_{RRM}$, single phase, half wave, Tj = Tjmax | 50 | mA |

### ON-STATE CHARACTERISTICS

| | | | | |
|---|---|---|---|---|
| $I_{T(AV)}$ | Average on-state current | Sine wave,180° conduction, Th = 55 °C | 660 | A |
| $I_{T(RMS)}$ | R.M.S. on-state current | Sine wave,180° conduction, Th = 55 °C | 1037 | A |
| $I_{TSM}$ | Surge on-state current | Non rep. half sine wave, 50 Hz, $V_R$ = 0 V, $T_j = T_{jmax}$ | 7.5 | kA |
| $I^2t$ | $I^2$ t for fusing coordination | | 281 | $kA^2s$ |
| $V_{T(TO)}$ | Threshold voltage | $T_j = T_{jmax}$ | 0.95 | V |
| $r_T$ | On-state slope resistance | $T_j = T_{jmax}$ | 0.720 | mΩ |
| $V_{TM}$ | Peak on-state voltage, max | On-state current $I_T$ = 1000 A , Tj = Tjmax | 1.67 | V |
| $I_H$ | Holding current, max | $T_j$ = 25 °C | 300 | mA |
| $I_L$ | Latching current, typ | $T_j$ = 25 °C | 1000 | mA |

### TRIGGERING CHARACTERISTICS

| | | | | |
|---|---|---|---|---|
| $V_{GT}$ | Gate trigger voltage | $T_j$ = 25 °C, $V_D$ = 5 V | 3.5 | V |
| $I_{GT}$ | Gate trigger current | $T_j$ = 25 °C, $V_D$ = 5 V | 300 | mA |
| $V_{GD}$ | Non-trigger voltage | $V_D$ = 67% $V_{RRM}$, $T_j = T_{jmax}$ | 0.25 | V |
| $P_{GM}$ | Peak gate power dissipation | Pulse width 5 ms | 10 | W |
| $P_{G(AV)}$ | Average gate power dissipation | | 2 | W |
| $I_{FGM}$ | Peak gate current | | 3 | A |
| $V_{FGM}$ | Peak gate voltage (forward) | | 20 | V |
| $V_{RGM}$ | Peak gate voltage (reverse) | | 5 | 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 | $T_j = T_{jmax}$ | 500 | V/µs |
| $t_q$ | Turn-off time, typ | $T_j = T_{jmax}$, $I_T$ = 320 A, di/dt = -12.5 A/µs | | µs |
| | | VR = 100 V, VD = 67% VDRM, dV/dt = 20 V/µs | | |

### THERMAL AND MECHANICAL CHARACTERISTICS

| | | | | |
|---|---|---|---|---|
| $R_{th(j-c)}$ | Thermal resistance (junction to case) | Double side cooled | 0.035 | °C/W |
| $R_{th(c-h)}$ | Thermal resistance (case to heatsink) | Double side cooled | 0.015 | °C/W |
| $T_{jmax}$ | Max operating junction temperature | | 125 | °C |
| $T_{stg}$ | Storage temperature | | -40 / 125 | °C |
| F | Clamping force ± 10% | | 9.0 | kN |
| | Mass | | 100 | g |

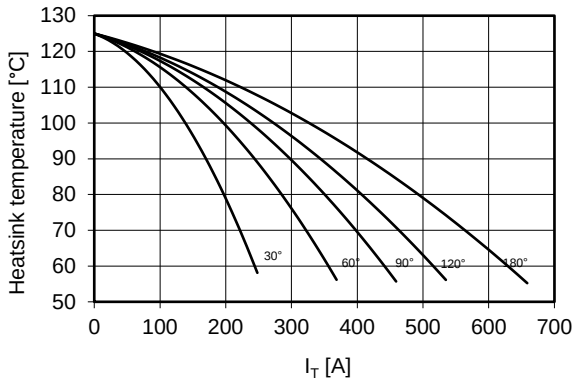


(*) higher blocking voltage available on request: contact factory

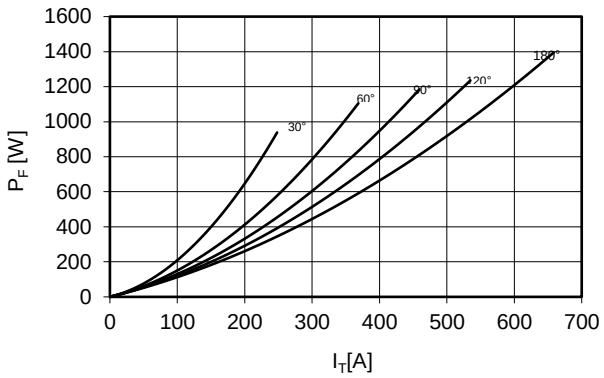
Green Power Solutions

**PHASE CONTROLLED SCR** **GPTG3066**

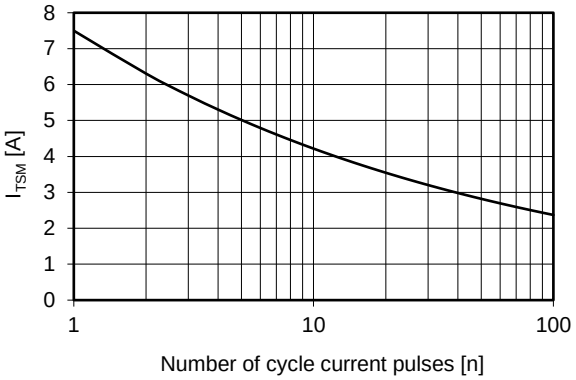
**Current rating - sine wave**



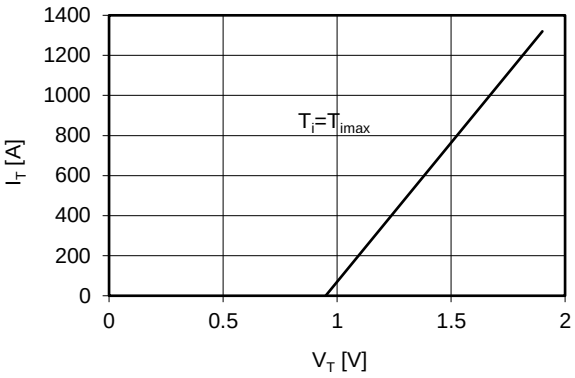

**Power loss - sine wave**



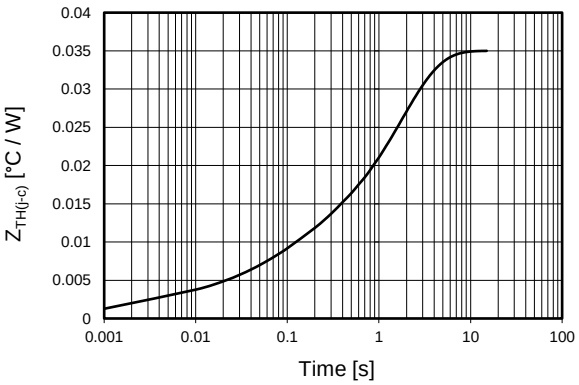

**Maximum surge current**
**d.s. cooled**

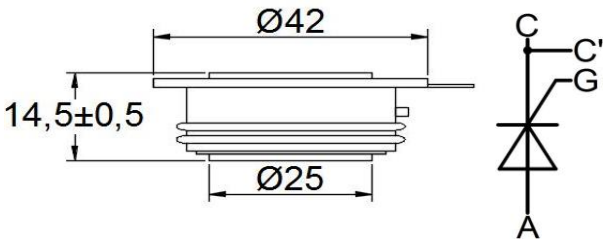


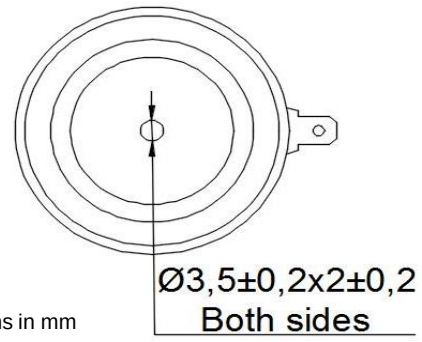

**On-state voltage drop**




**Thermal impedance (j-c)**




## Ordering information GPTG3066-VVGL

**VV**: blocking voltage / 100 (e.g. 20 for 2000 V)
**G**: trigger lead type (**S** = straight **T** = twisted **blank** = no leads)
**L**: trigger lead lenght x 100mm (**3 - 4 - 5 - 7** **blank** = no leads)

dimensions in mm

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