

GPTR5222

PHASE CONTROLLED SCR

High reliability operation

DC power supply

AC drives

VOLTAGE UP TO

4400 V

AVERAGE CURRENT

2225 A

SURGE CURRENT

27 kA

BLOCKING CHARACTERISTICS

Characteristic	Conditions	Value
V_{RRM}	Repetitive peak reverse voltage	4400 V
V_{RSM}	Non-repetitive peak reverse voltage	4400 V
V_{DRM}	Repetitive peak off-state voltage	4500 V
I_{DRM}	Repetitive peak off-state current, max.	200 mA
I_{IRR}	Repetitive peak reverse current, max.	200 mA

ON-STATE CHARACTERISTICS

$I_{T(AV)}$	Average on-state current	Sine wave, 180° conduction, $T_h = 55^\circ C$	2225 A
$I_{T(RMS)}$	R.M.S. on-state current	Sine wave, 180° conduction, $T_h = 55^\circ C$	3493 A
I_{TSM}	Surge on-state current	Non rep. half sine wave, 50 Hz, $V_R = 0 V$, $T_j = T_{jmax}$	27 kA
$I^2 t$	$I^2 t$ for fusing coordination		3645 kA ² s
$V_{T(TO)}$	Threshold voltage	$T_j = T_{jmax}$	1.06 V
r_T	On-state slope resistance	$T_j = T_{jmax}$	0.245 mΩ
V_{TM}	Peak on-state voltage, max	On-state current $I_T = 4000 A$, $T_j = T_{jmax}$	2.04 V
I_H	Holding current, max	$T_j = 25^\circ C$	400 mA
I_L	Latching current, typ	$T_j = 25^\circ C$	1500 mA

TRIGGERING CHARACTERISTICS

V_{GT}	Gate trigger voltage	$T_j = 25^\circ C$, $V_D = 12 V$	3 V
I_{GT}	Gate trigger current	$T_j = 25^\circ C$, $V_D = 12 V$	300 mA
V_{GD}	Non-trigger voltage	$V_D = 67\% V_{RRM}$, $T_j = T_{jmax}$	0.35 V
P_{GM}	Peak gate power dissipation	Pulse width 0.5 ms	50 W
$P_{G(AV)}$	Average gate power dissipation		5 W
I_{FGM}	Peak gate current		8 A
V_{FGM}	Peak gate voltage (forward)		5 V
V_{RGM}	Peak gate voltage (reverse)		5 V

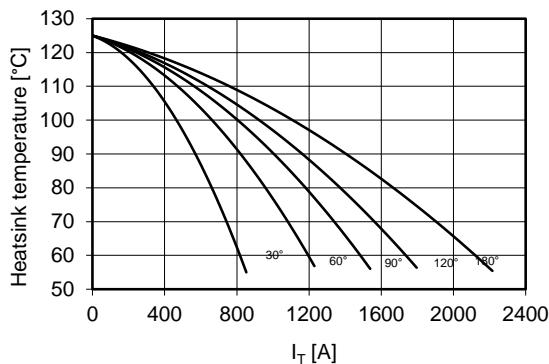
SWITCHING CHARACTERISTICS

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	$T_j = T_{jmax}$	1000 V/μs
t_q	Turn-off time, typ	$T_j = T_{jmax}$, $I_T = 1200 A$, $di/dt = -10 A/\mu s$	600 μs
		$V_R = 100 V$, $V_D = 67\% V_{DRM}$, $dV/dt = 50 V/\mu s$	

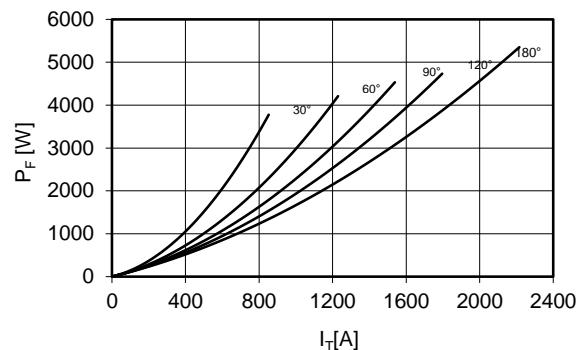
THERMAL AND MECHANICAL CHARACTERISTICS

$R_{th(j-c)}$	Thermal resistance (junction to case)	Double side cooled	0.010 °C/W
$R_{th(c-h)}$	Thermal resistance (case to heatsink)	Double side cooled	0.003 °C/W
T_{jmax}	Max operating junction temperature		125 °C
T_{stg}	Storage temperature		-40 / 125 °C
F	Clamping force ± 10%		40 kN
	Mass		950 g

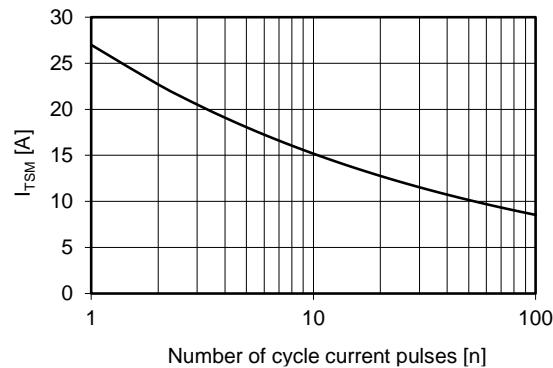
Current rating - sine wave



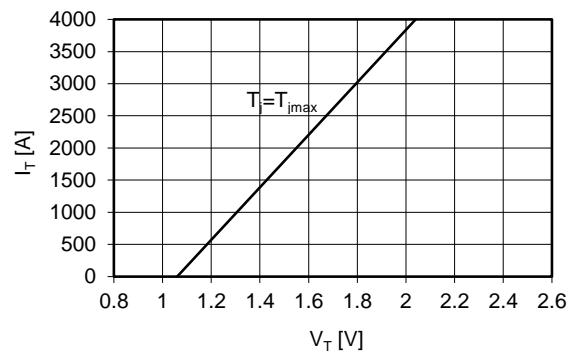
Power loss - sine wave



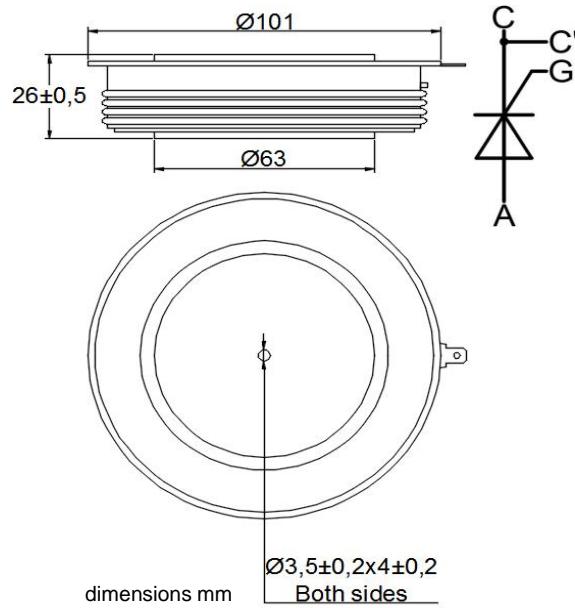
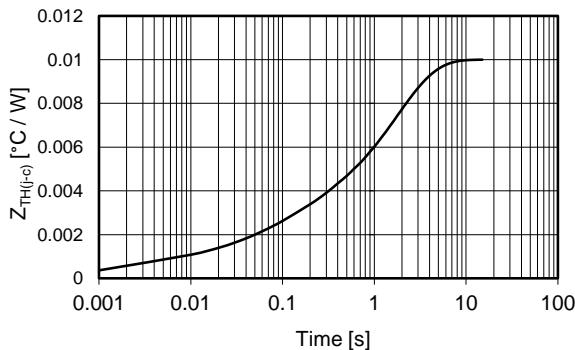
**Maximum surge current
d.s. cooled**



On-state voltage drop



Thermal impedance (j-c)



Ordering information G PTR5222-VVGL

VV: blocking voltage / 100 (e.g. 44 for 4400 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)

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