

GPTP3180

PHASE CONTROLLED SCR

High reliability operation
DC power supply
AC drives

VOLTAGE UP TO **2200 V**
AVERAGE CURRENT **1800 A**
SURGE CURRENT **30 kA**

BLOCKING CHARACTERISTICS

Characteristic	Conditions	Value
VRRM	Repetitive peak reverse voltage	2200 V
VRSM	Non-repetitive peak reverse voltage	2200 V
VDRM	Repetitive peak off-state voltage	2300 V
IDRM	Repetitive peak off-state current, max.	VDRM, single phase, half wave, Tj = Tjmax
IRRM	Repetitive peak reverse current, max.	VRRM, single phase, half wave, Tj = Tjmax

ON-STATE CHARACTERISTICS

IT(AV)	Average on-state current	Sine wave, 180° conduction, Th = 55 °C	1800 A
IT(RMS)	R:M:S on-state current	Sine wave, 180° conduction, Th = 55 °C	2826 A
ITSM	Surge on-state current	Non rep. half sine wave, 50 Hz, VR = 0 V, Tj = Tjmax	30 kA
I ² t	I ² t for fusing coordination		4500 kA ² s
VT(TO)	Threshold voltage	Tj = Tjmax	0,992 V
rT	On-state slope resistance	Tj = Tjmax	0,206 mΩ
VTM	Peak on-state voltage, max	On-state current It = 2000 A , Tj = Tjmax	1,40 V
IH	Holding current, typ	Tj = 25 °C	300 mA
IL	Latching current, typ	Tj = 25 °C	700 mA

TRIGGERING CHARACTERISTICS

VGT	Gate trigger voltage	Tj = 25 °C, VD = 5 V	3,0 V
IGT	Gate trigger current	Tj = 25 °C, VD = 5 V	250 mA
VGD	Non-trigger voltage	VD = 67% VRRM, Tj = Tjmax	0,25 V
PGM	Peak gate power dissipation	Pulse width 100 μs	150 W
PG(AV)	Average gate power dissipation		2 W
IFGM	Peak gate current		10 A
VFGM	Peak gate voltage (forward)		10 V
VRGM	Peak gate voltage (reverse)		12 V

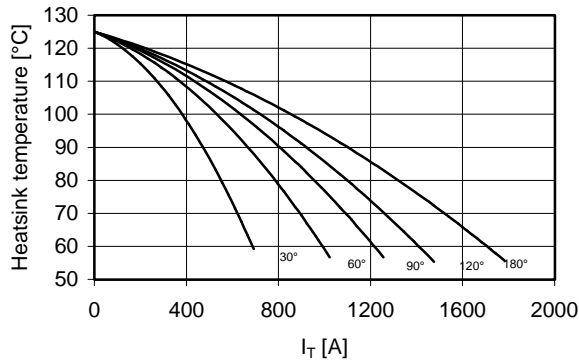
SWITCHING CHARACTERISTICS

di/dt	Critical rate of rise of on-state current	Tj = Tjmax	200 A/μs
dV/dt	Critical rate of rise of off-state voltage	Tj = Tjmax	1000 V/μs
tq	Turn-off time, typ	Tj = Tjmax, It = 1000 A, di/dt = -20 A/μs VR = 50 V, VD = 67% VDRM, dV/dt = 20 V/μs	μs

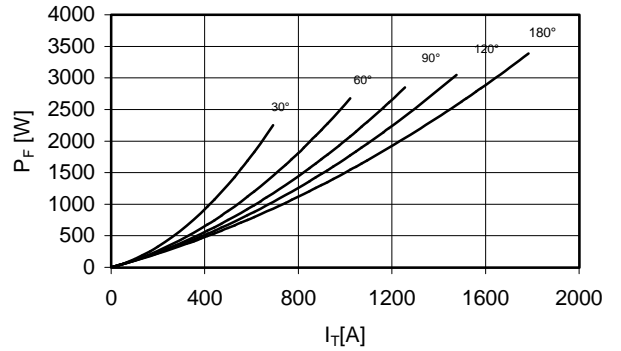
THERMAL AND MECHANICAL CHARACTERISTICS

Rth(j-c)	Thermal resistance (junction to case)	Double side cooled	0,015 °C/W
Rth(c-h)	Thermal resistance (case to heatsink)	Double side cooled	0,006 °C/W
Tjmax	Max operating junction temperature		125 °C
Tstg	Storage temperature		-40 / 125 °C
F	Clamping force ± 10%		22 kN
	Mass		520 g

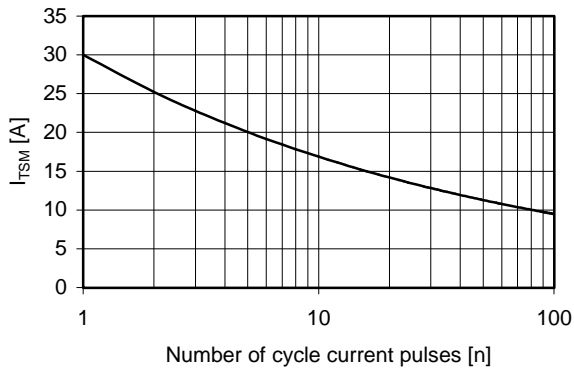
Current rating - sine wave



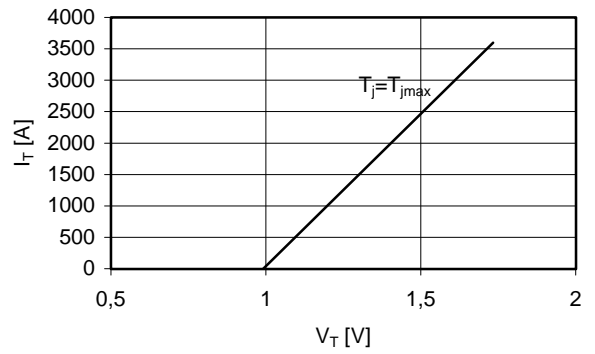
Power loss - sine wave



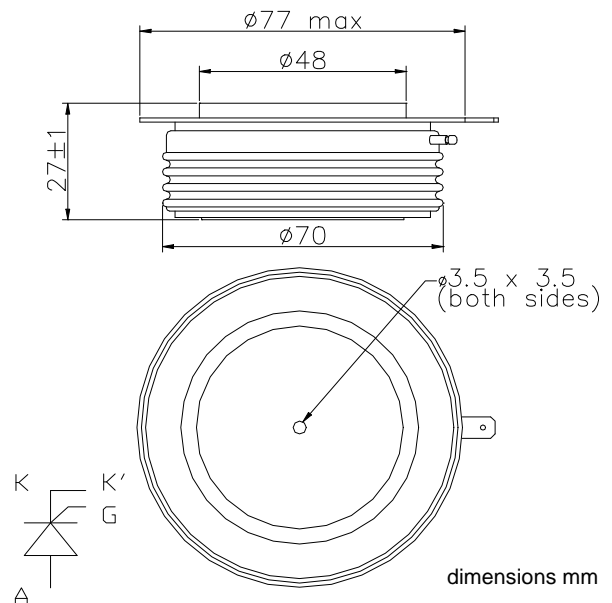
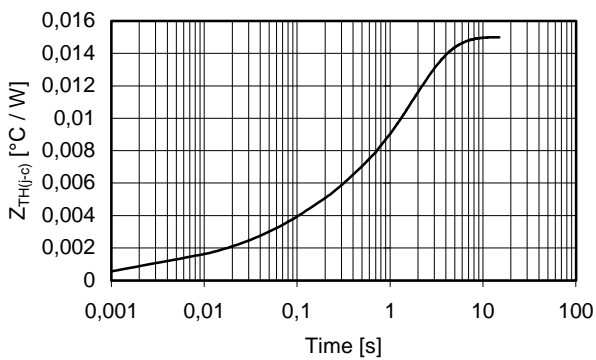
**Maximum surge current
d.s. cooled**



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.