

GPTN5061

PHASE CONTROLLED SCR

High reliability operation
DC power supply
AC drives

VOLTAGE UP TO	4200 V
AVERAGE CURRENT	610 A
SURGE CURRENT	7.5 kA

BLOCKING CHARACTERISTICS

Characteristic	Conditions	Value	
VRRM	Repetitive peak reverse voltage	4200 V	
VRSM	Non-repetitive peak reverse voltage	4300 V	
VDRM	Repetitive peak off-state voltage	4200 V	
IDRM	Repetitive peak off-state current, max.	VDRM, single phase, half wave, Tj = Tjmax	100 mA
IRRM	Repetitive peak reverse current, max.	VRRM, single phase, half wave, Tj = Tjmax	100 mA

ON-STATE CHARACTERISTICS

IT(AV)	Average on-state current	Sine wave, 180° conduction, Th = 55 °C	610 A
IT(RMS)	R.M.S. on-state current	Sine wave, 180° conduction, Th = 55 °C	958 A
ITSM	Surge on-state current	Non rep. half sine wave, 50 Hz, VR = 0 V, Tj = Tjmax	7.5 kA
I ² t	I ² t for fusing coordination		281 kA ² s
VT(TO)	Threshold voltage	Tj = Tjmax	1.297 V
rT	On-state slope resistance	Tj = Tjmax	0.935 mΩ
VTM	Peak on-state voltage, max	On-state current It = 1500 A , Tj = Tjmax	2.70 V
IH	Holding current, max	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	0.3 V
PGM	Peak gate power dissipation	Pulse width 1 ms	150 W
PG(AV)	Average gate power dissipation		3 W
IFGM	Peak gate current		10 A
VFGM	Peak gate voltage (forward)		12 V
VRGM	Peak gate voltage (reverse)		10 V

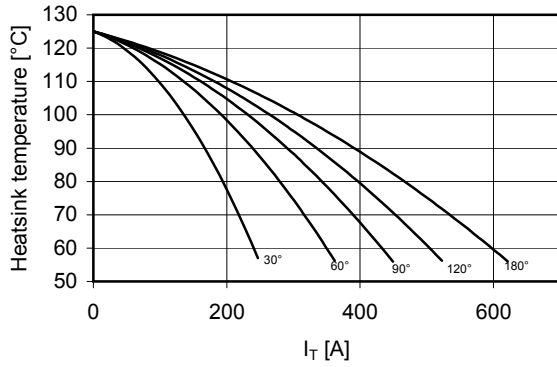
SWITCHING CHARACTERISTICS

di/dt	Critical rate of rise of on-state current	Non rep. - Tj = Tjmax	150 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 = 2000 A, di/dt = -5 A/μs VR = 200 V, VD = 67% VDRM, dV/dt = 20 V/μs	μs

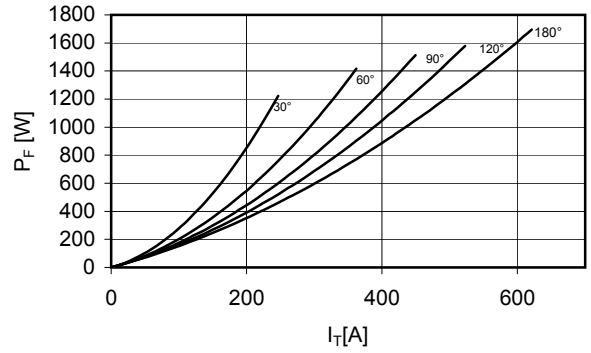
THERMAL AND MECHANICAL CHARACTERISTICS

Rth(j-c)	Thermal resistance (junction to case)	Double side cooled	0.032 °C/W
Rth(c-h)	Thermal resistance (case to heatsink)	Double side cooled	0.007 °C/W
Tjmax	Max operating junction temperature		125 °C
Tstg	Storage temperature		-40 / 125 °C
F	Clamping force ± 5%		12 kN
	Mass		300 g

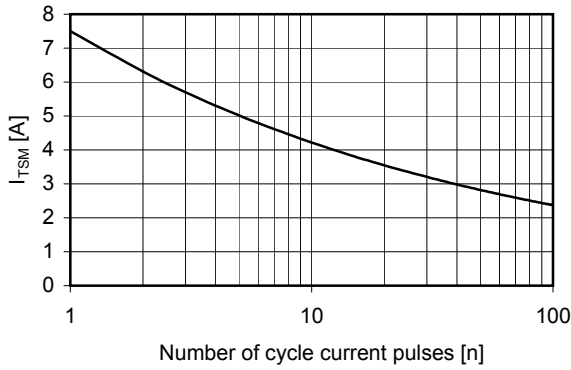
Current rating - sine wave



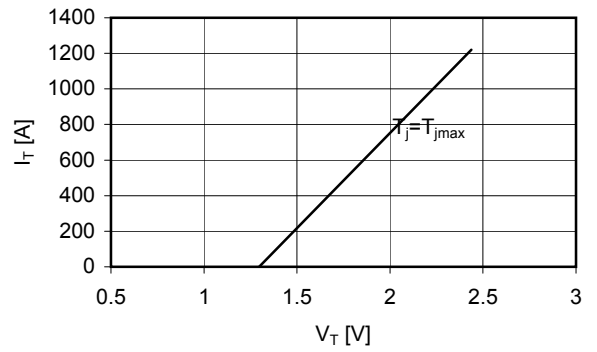
Power loss - sine wave



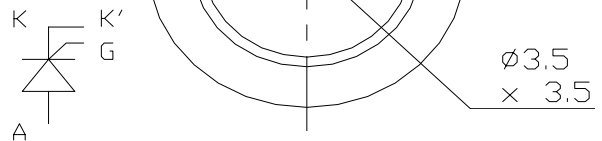
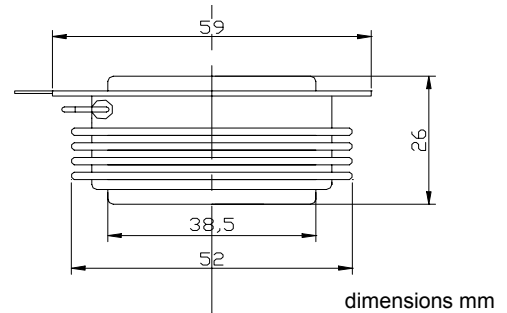
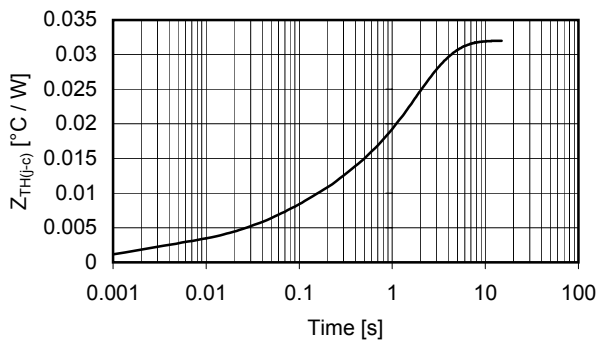
Maximum surge current d.s. cooled



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.