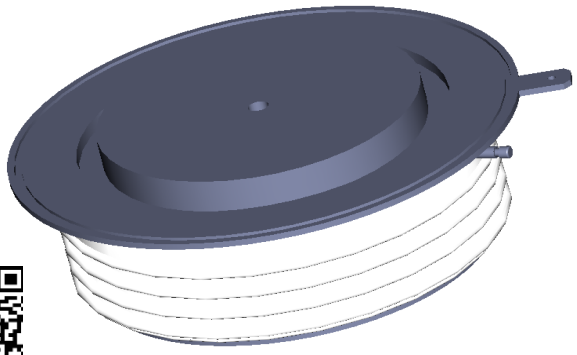
Green Power Solutions Srl
Web: www.gpsemi.it e-mail: info@gpsemi.it
Phone: +39-011-988 2251
Fax: +39-011-988 1358
http://gpsemi.it/pdf/GPTP2165.pdf



GPTP2165

PHASE CONTROLLED SCR

High reliability operation
DC power supply
AC drives

VOLTAGE UP TO	**1600**	**V**
AVERAGE CURRENT	**1650**	**A**
SURGE CURRENT	**27**	**kA**

BLOCKING CHARACTERISTICS

Characteristic		Conditions	Value	
V_{RRM}	Repetitive peak reverse voltage		1600	V
V_{RSM}	Non-repetitive peak reverse voltage		1700	V
V_{DRM}	Repetitive peak off-state voltage		1600	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	1650	A
$I_{T(RMS)}$	R.M.S. on-state current	Sine wave,180° conduction, Th = 55 °C	2592	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^2t	I^2 t for fusing coordination		3920	kA^2s
$V_{T(TO)}$	Threshold voltage	$T_j = T_{jmax}$	0.82	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 = 2900 A , Tj = 25 °C	1.45	V
I_H	Holding current, max	T_j = 25 °C	300	mA
I_L	Latching current, typ	T_j = 25 °C	700	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 100 µs	150	W
$P_{G(AV)}$	Average gate power dissipation		2	W
I_{FGM}	Peak gate current		10	A
V_{FGM}	Peak gate voltage (forward)		30	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 = 1000 A, di/dt = -20 A/µs		µs
		VR = 50 V, VD = 67% VDRM, dV/dt = 20 V/µs		

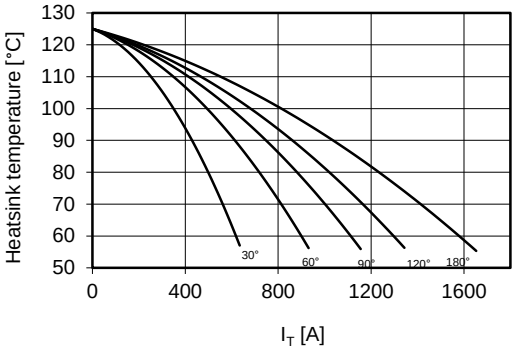
THERMAL AND MECHANICAL CHARACTERISTICS

$R_{th(j-c)}$	Thermal resistance (junction to case)	Double side cooled	0.018	°C/W
$R_{th(c-h)}$	Thermal resistance (case to heatsink)	Double side cooled	0.006	°C/W
T_{jmax}	Max operating junction temperature		125	°C
T_{stg}	Storage temperature		-40 / 125	°C
F	Clamping force ± 10%		22	kN
	Mass		500	g

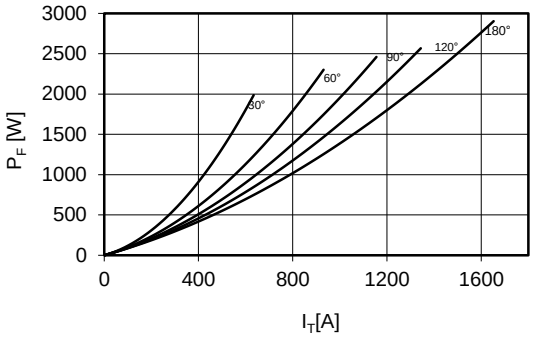
Green Power Solutions

PHASE CONTROLLED SCR **GPTP2165**

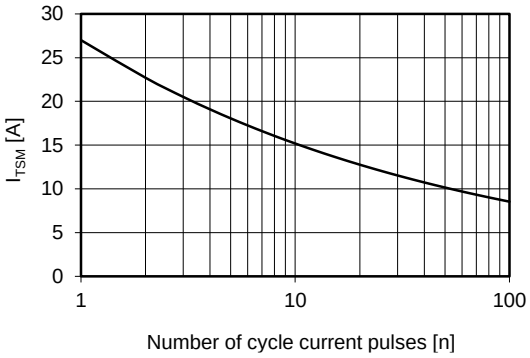
Current rating - sine wave



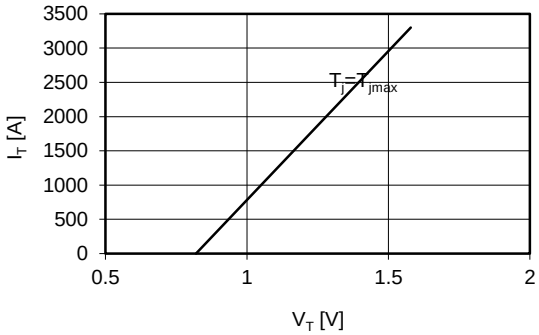
Power loss - sine wave



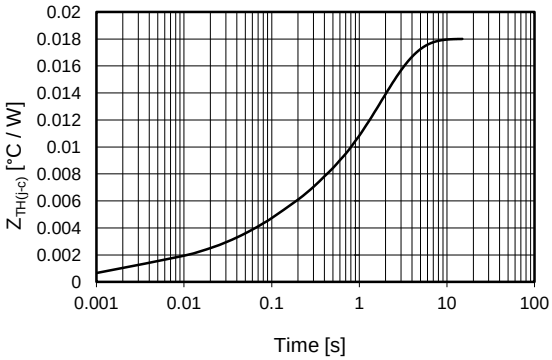
Maximum surge current d.s. cooled

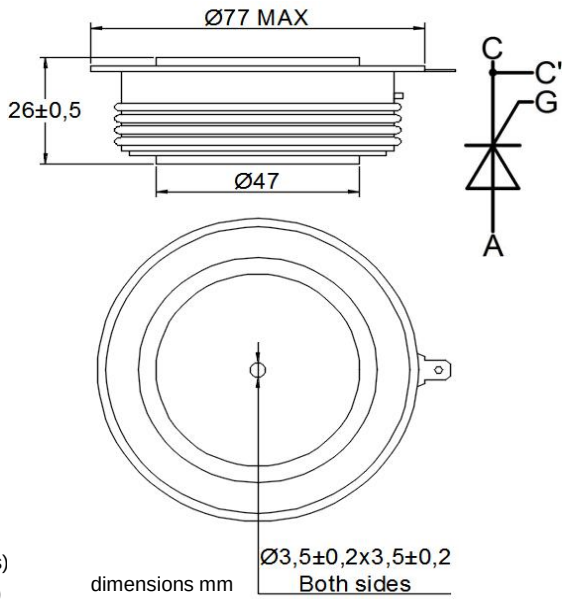


On-state voltage drop



Thermal impedance (j-c)





Ordering information GPTP2165-VVGL

VV: blocking voltage / 100 (e.g. 16 for 1600 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.