

GPTS3612

PHASE CONTROLLED SCR

High reliability operation
DC power supply

Controlled rectifiers

DC drives - Motor starters

BLOCKING VOLTAGE UP TO	2800 V
AVERAGE CURRENT	6120 A
SURGE CURRENT	76 kA



BLOCKING CHARACTERISTICS

Characteristic	Conditions	Value
VRMM	Repetitive peak reverse voltage	2800 V
VRSM	Non-repetitive peak reverse voltage	2900 V
VDRM	Repetitive peak off-state voltage	2800 V
IDRM	Repetitive peak off-state current, max.	VDRM, single phase, half wave, T _j = T _{jmax}
IRRM	Repetitive peak reverse current, max.	VRMM, single phase, half wave, T _j = T _{jmax}

ON-STATE CHARACTERISTICS

I _{T(AV)}	Average on-state current	Sine wave, 180° conduction, Th = 55 °C	6120 A
I _{T(RMS)}	R.M.S. on-state current	Sine wave, 180° conduction, Th = 55 °C	9613 A
I _{TSM}	Surge on-state current	Non rep. half sine wave, 50 Hz, VR = 0 V, T _j = T _{jmax}	76 kA
I ² t	I ² t for fusing coordination		28880 kA ² s
V _{T(TO)}	Threshold voltage	T _j = T _{jmax}	0.85 V
r _T	On-state slope resistance	T _j = T _{jmax}	0.070 mΩ
V _{TM}	Peak on-state voltage, max	On-state current I _T = 8000 A, T _j = T _{jmax}	1.41 V
I _H	Holding current, max	T _j = 25 °C	400 mA
I _L	Latching current, typ	T _j = 25 °C	1500 mA

TRIGGERING CHARACTERISTICS

V _{GT}	Gate trigger voltage	T _j = 25 °C, V _D = 12 V	3 V
I _{GT}	Gate trigger current	T _j = 25 °C, V _D = 12 V	300 mA
V _{GD}	Non-trigger voltage	V _D = 67% VRMM, T _j = T _{jmax}	0.35 V
P _{GM}	Peak gate power dissipation	Pulse width 0.5 ms	150 W
P _{GA(V)}	Average gate power dissipation		5 W
I _{FGM}	Peak gate current		12 A
V _{FGM}	Peak gate voltage (forward)		30 V
V _{RGM}	Peak gate voltage (reverse)		5 V

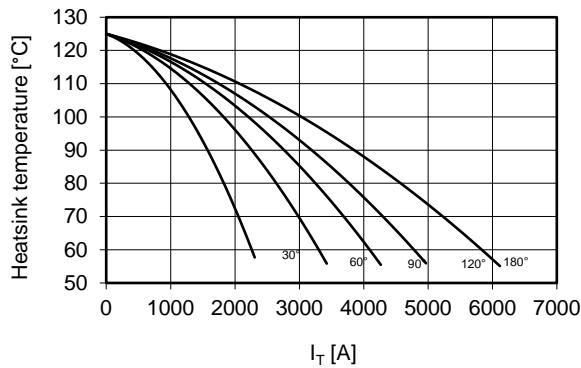
SWITCHING CHARACTERISTICS

d <i>i</i> /dt	Critical rate of rise of on-state current	T _j = T _{jmax}	250 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 = 2000 A, d <i>i</i> /dt = -10 A/μs VR = 100 V, V _D = 67% VDRM, dV/dt = 20 V/μs	500 μs

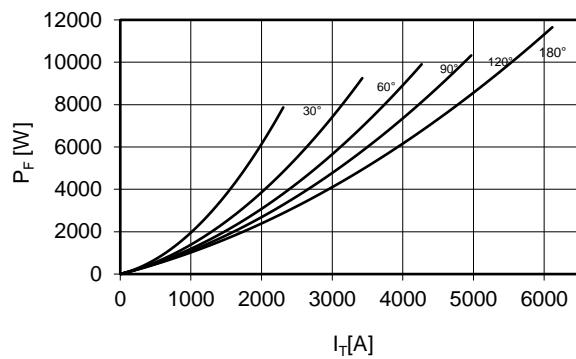
THERMAL AND MECHANICAL CHARACTERISTICS

R _{th(j-c)}	Thermal resistance (junction to case)	Double side cooled	0.005 °C/W
R _{th(c-h)}	Thermal resistance (case to heatsink)	Double side cooled	0.001 °C/W
T _{jmax}	Max operating junction temperature		125 °C
T _{stg}	Storage temperature		-40 / 125 °C
F	Clamping force ± 10%		80 kN
	Mass		2200 g

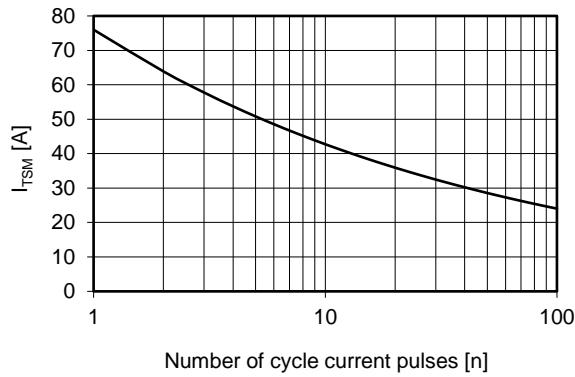
Current rating - sine wave



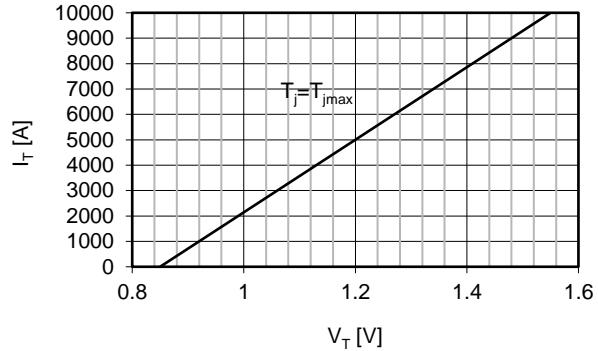
Power loss - sine wave



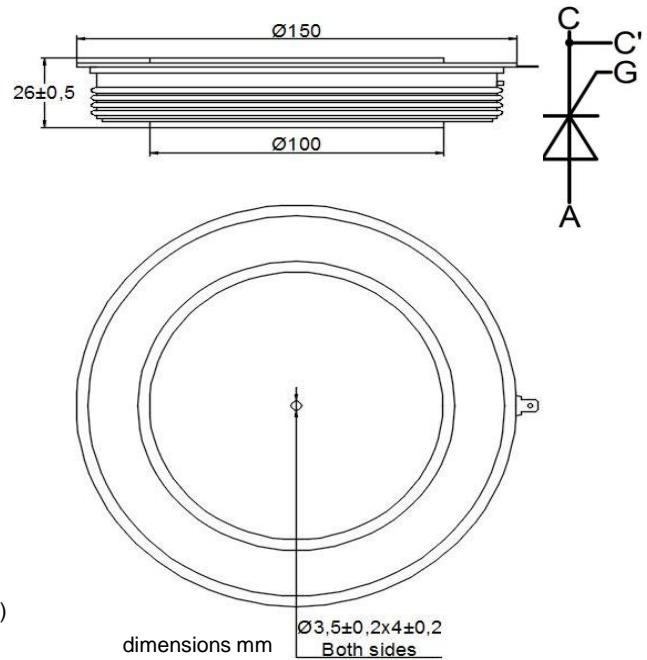
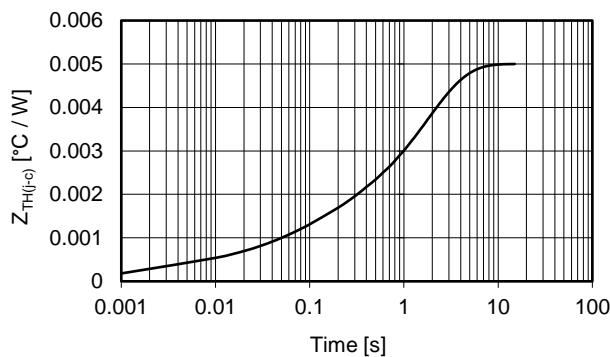
**Maximum surge current
d.s. cooled**



On-state voltage drop



Thermal impedance (j-c)



Ordering information GPTS3612-VVGL

VV: blocking voltage / 100 (e.g. 28 for 2800 V)

G: trigger lead type (**S** = straight **T** = twisted **blank** = no leads)

L: trigger lead length 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