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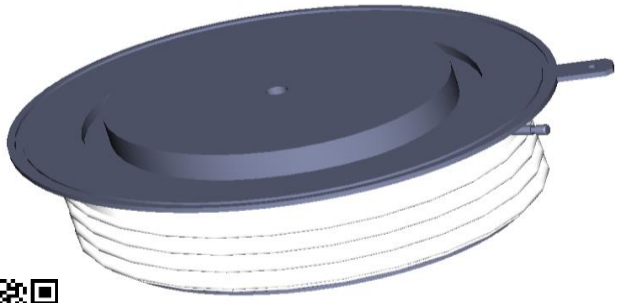
http://gpsemi.it/pdf/GPTR7157.pdf



GPTR7157

PHASE CONTROLLED SCR

High reliability operation
DC power supply
Controlled rectifiers
DC drives - Motor starters

BLOCKING VOLTAGE UP TO	**6500**	**V**
AVERAGE CURRENT	**1575**	**A**
SURGE CURRENT	**18**	**kA**

BLOCKING CHARACTERISTICS

Characteristic		Conditions	Value	
V_{RRM}	Repetitive peak reverse voltage		6500	V
V_{RSM}	Non-repetitive peak reverse voltage		6600	V
V_{DRM}	Repetitive peak off-state voltage		6500	V
I_{DRM}	Repetitive peak off-state current, max.	V_{DRM}, single phase, half wave, Tj = Tjmax	300	mA
I_{RRM}	Repetitive peak reverse current, max.	V_{RRM}, single phase, half wave, Tj = Tjmax	300	mA

ON-STATE CHARACTERISTICS

$I_{T(AV)}$	Average on-state current	Sine wave,180° conduction, Th = 55 °C	1575	A
$I_{T(RMS)}$	R.M.S. on-state current	Sine wave,180° conduction, Th = 55 °C	2474	A
I_{TSM}	Surge on-state current	Non rep. half sine wave, 50 Hz, V_R = 0 V, $T_j = T_{jmax}$	18	kA
I^2t	I² t for fusing coordination		1620	kA²s
$V_{T(TO)}$	Threshold voltage	$T_j = T_{jmax}$	1.0	V
r_T	On-state slope resistance	$T_j = T_{jmax}$	0.56	mΩ
V_{TM}	Peak on-state voltage, max	On-state current I_T = 1800 A , Tj = Tjmax	2.0	V
I_H	Holding current, max	T_j = 25 °C	300	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% V_{RRM}, $T_j = T_{jmax}$	0.35	V
P_{GM}	Peak gate power dissipation	Pulse width 0.5 ms	150	W
$P_{G(AV)}$	Average gate power dissipation		5	W
I_{FGM}	Peak gate current		8	A
V_{FGM}	Peak gate voltage (forward)		20	V
V_{RGM}	Peak gate voltage (reverse)		5	V

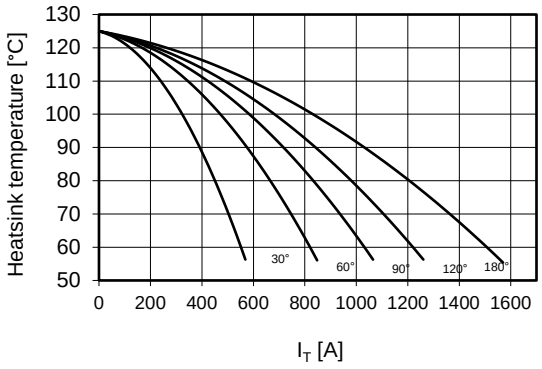
SWITCHING CHARACTERISTICS

di/dt	Critical rate of rise of on-state current	$T_j = T_{jmax}$, I_G = 2 A , dI/dt ≥ 1 A/µs	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 = 2000 A, di/dt = -10 A/µs VR = 100 V, VD = 67% VDRM, dV/dt = 50 V/µs	800	µs
Qrr	Reverse recovery charge, max	I_T = 1000 A, di/dt = -5 A/µs V_R = 100 V, Tj = Tjmax	3900	µC
Irr	Reverse recovery current, max		130	A

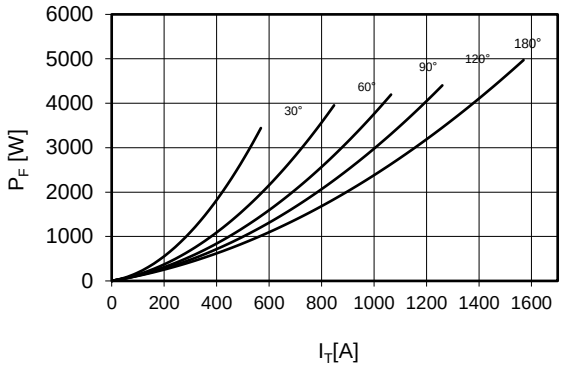
THERMAL AND MECHANICAL CHARACTERISTICS

$R_{th(j-c)}$	Thermal resistance (junction to case)	Double side cooled	0.011	°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		35 - 40	kN
	Mass		1000	g

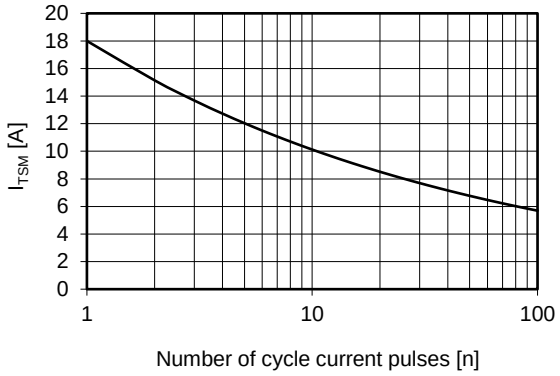
Current rating - sine wave



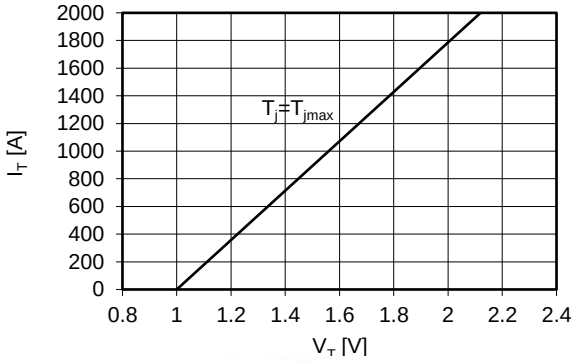
Power loss - sine wave



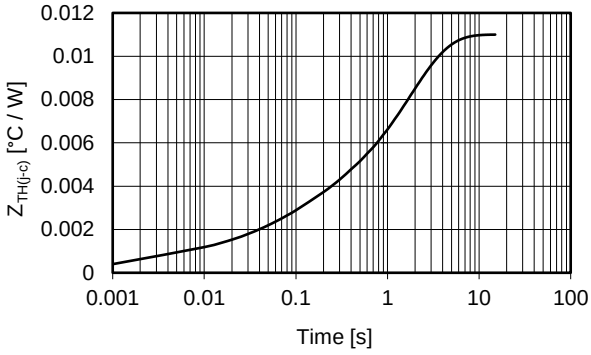
Maximum surge current d.s. cooled

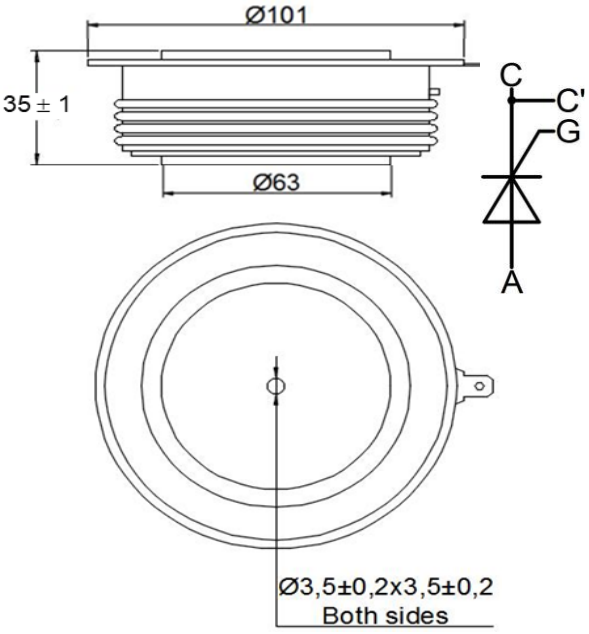


On-state voltage drop



Thermal impedance (j-c)





dimensions mm

Ordering information GPTR7157-VVGL

VV: blocking voltage / 100 (e.g. 65 for 6500 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)