

Features

- Full blocking capability over wide temperature range
- High Surge current capability
- Hermetic metal case with ceramic insulator

Key Parameters

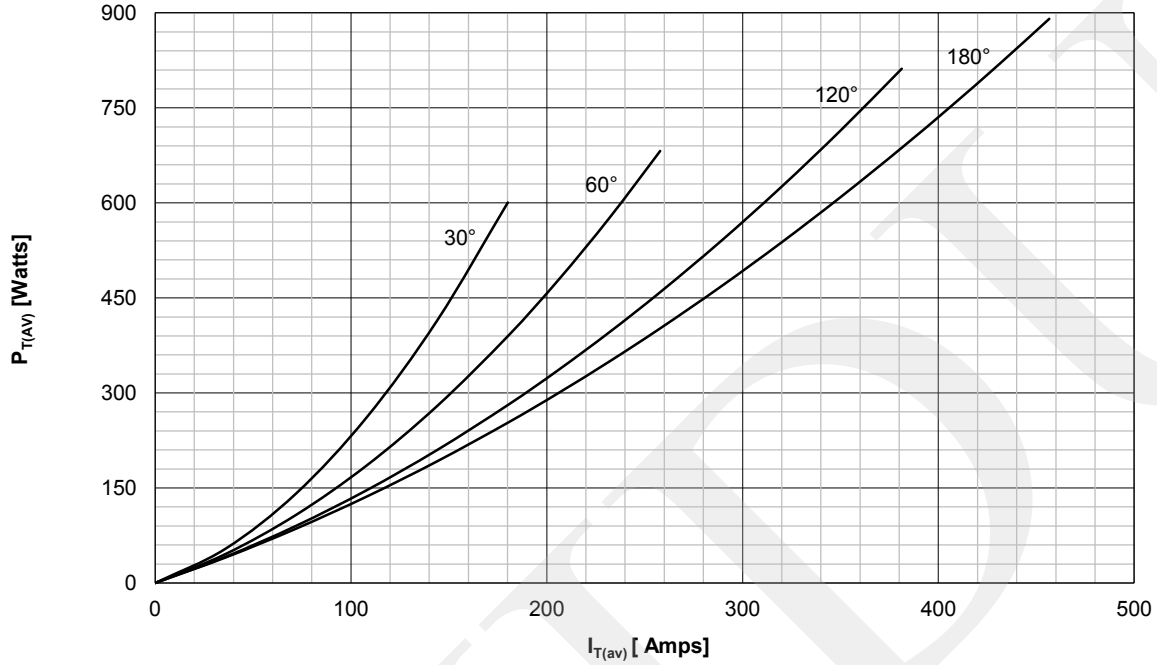
V_{DRM} / V_{RRM}	= 1800V
$I_{T(AV)}$	= 456A
I_{TSM}	= 7.5kA
$V_{T(TO)}$	= 1.05V
r_T	= 0.80mΩ

Applications

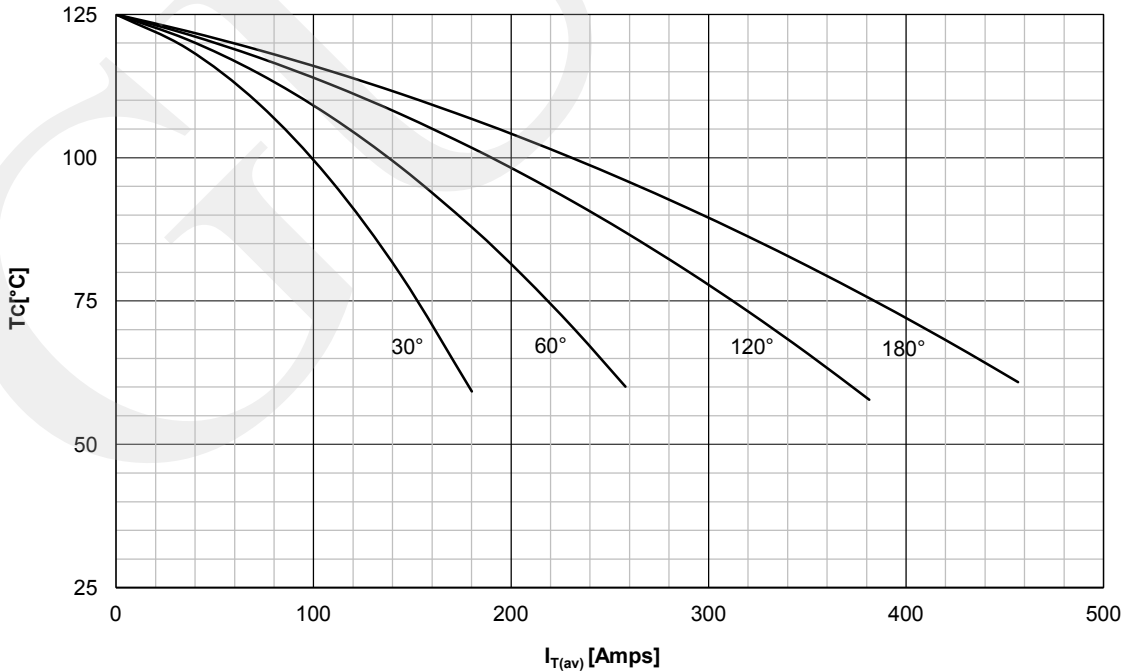
- Power Supplies
- AC Controllers
- Controlled Rectifiers

Symbol	Characteristic	Conditions	T _J [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		125	200 - 1800	V
V_{RSM}	Non-repetitive peak reverse voltage		125	300 - 1900	V
V_{DRM}	Repetitive peak off-state voltage		125	200 - 1800	V
I_{RRM}	Repetitive peak reverse current	$V = V_{RRM}$	125	50	mA
I_{DRM}	Repetitive peak off-state current	$V = V_{DRM}$	125	50	mA
CONDUCTING					
$I_{T(AV)}$	Mean on state current	180° sin ,50 Hz, T _c =60°C, double side cooled		456	A
I_{TRMS}	RMS on state current			717	A
I_{TSM}	Surge on state current	Sine wave, 10 ms Without reverse voltage	25	7.5	kA
			125	6.8	kA
$I^2 t$	$I^2 t$	Sine wave, 10 ms Without reverse voltage	25	281 x 10 ³	A ² s
			125	231 x 10 ³	A ² s
V_T	Peak on state voltage	Peak on state current = 1000A	125	1.85	V
$V_{T(TO)}$	Threshold voltage		125	1.05	V
r_T	On state slope resistance		125	0.80	mΩ
SWITCHING					
di/dt	Critical rate of rise of on-state current	Repetitive	125	150	A/μs
dv/dt	Critical rate of rise of off-state voltage	$V_{DR} = 67\%V_{DRM}$	125	1000	V/μs
GATE					
I_{gt}	Gate trigger current	$V_D=6V$	25	150	mA
V_{gt}	Gate trigger voltage	$V_D=6V$	25	3.0	V
I_H	Holding current	$V_D=6V$, gate open circuit	25	300	mA
I_L	Latching current	$V_D=6V$	25	600	mA
MOUNTING					
$R_{th(j-c)}$	Thermal impedance, sin 180°	Junction to case, Double side cooled		0.072	°C/W
$R_{th(c-h)}$	Thermal impedance	Case to heatsink, Double side cooled		0.02	°C/W
T_j	Max. junction temperature			125	°C
T_{stg}	Storage temperature			-40 ... 125	°C
M	Mounting Torque			4 -5	KN
W	Weight (Approx.)			60	gm

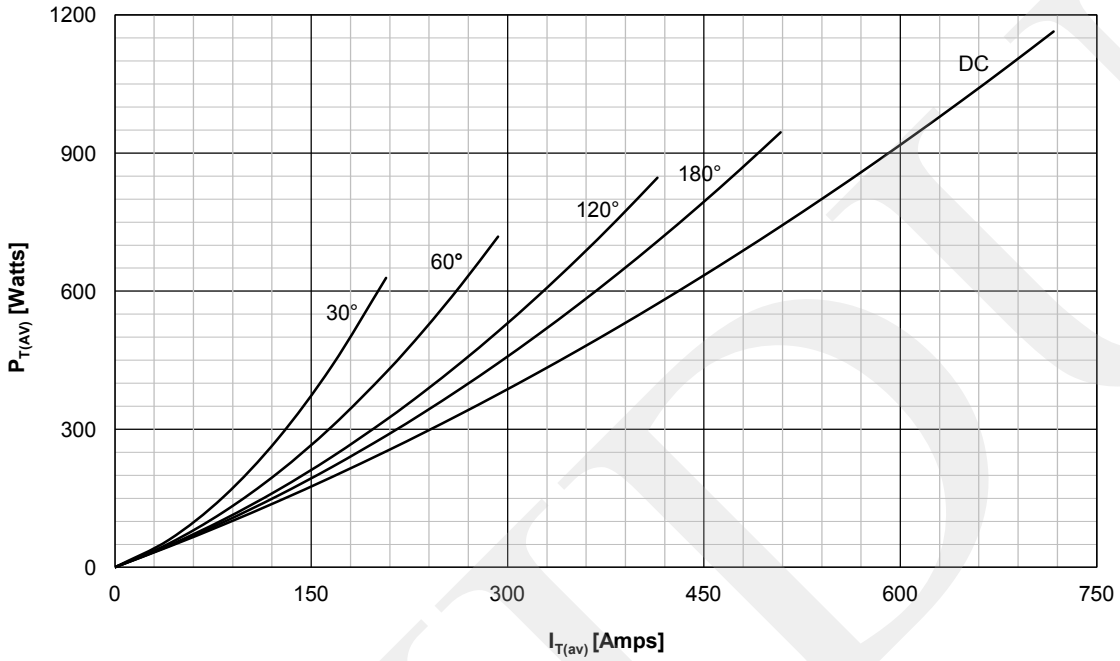
DISSIPATION CHARACTERISTICS
SINE WAVE



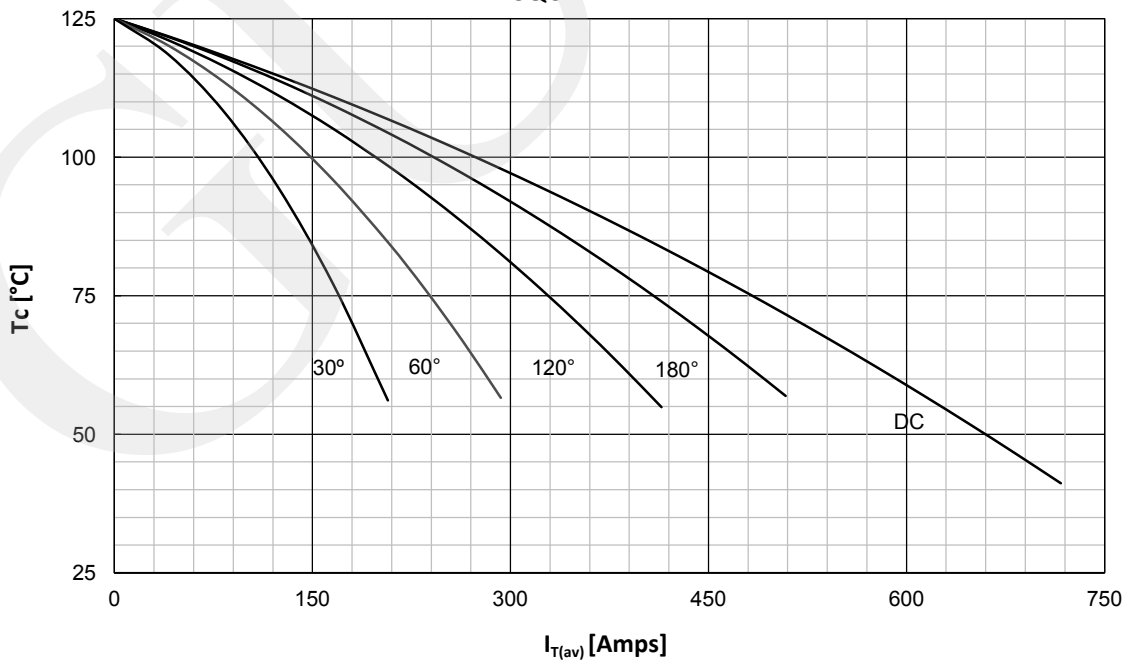
ON STATE CURRENT DERATING CURVE
SINE WAVE



DISSIPATION CHARACTERISTICS
SQUARE WAVE

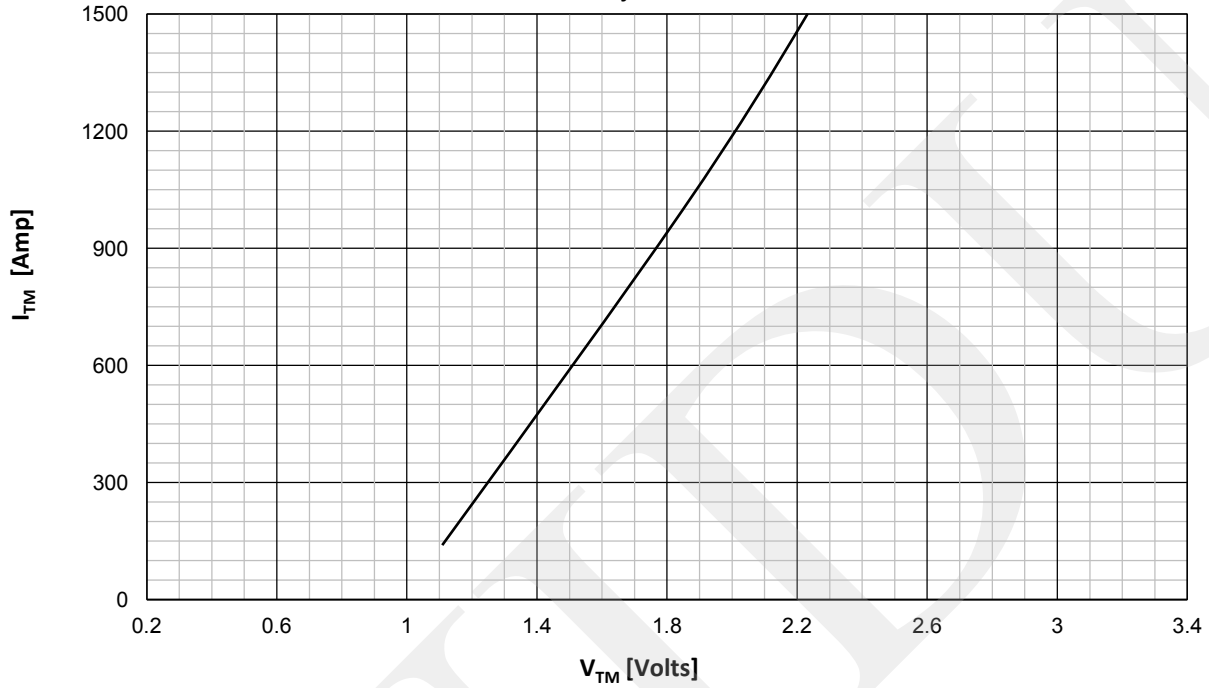


ON STATE CURRENT DERATING CURVE
SQUARE WAVE

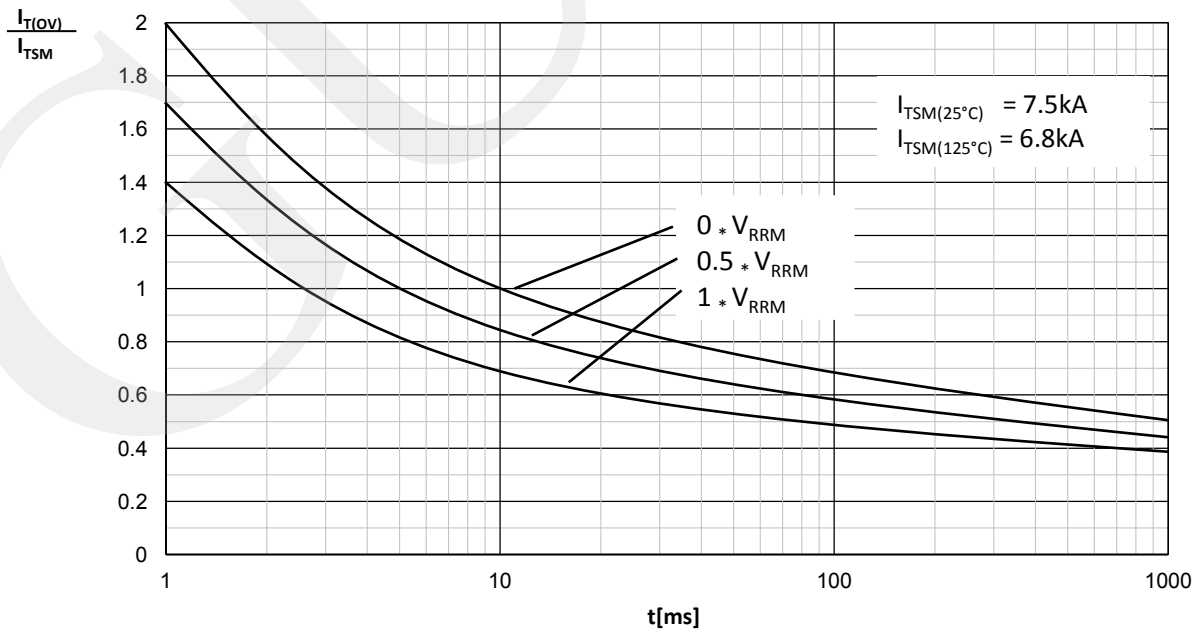


ON-STATE CHARACTERISTICS

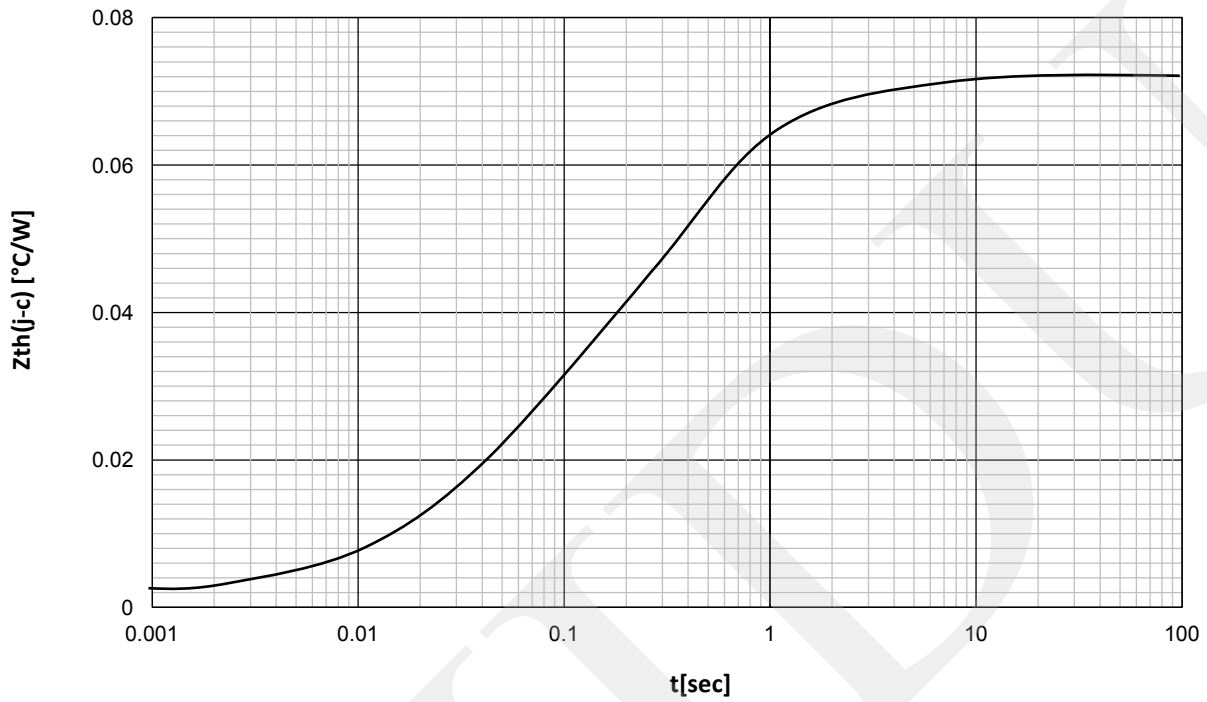
$T_j = 125^\circ\text{C}$



SURGE CHARACTERISTICS



TRANSIENT THERMAL IMPEDANCE, DSC



ORDERING INFORMATION

GDKP	504	C	X X
Phase Control Thyristor	Current code	Capsule Version	Voltage Code Code X 100 = V_{DRM}/V_{RRM}

Order Code GDKP504C18 – 1800V V_{DRM}, V_{RRM} , 14mm clamp height capsule

Outline

