

Features

- Full blocking capability over wide temperature range
- Hard soldered joints for high reliability

Key Parameters

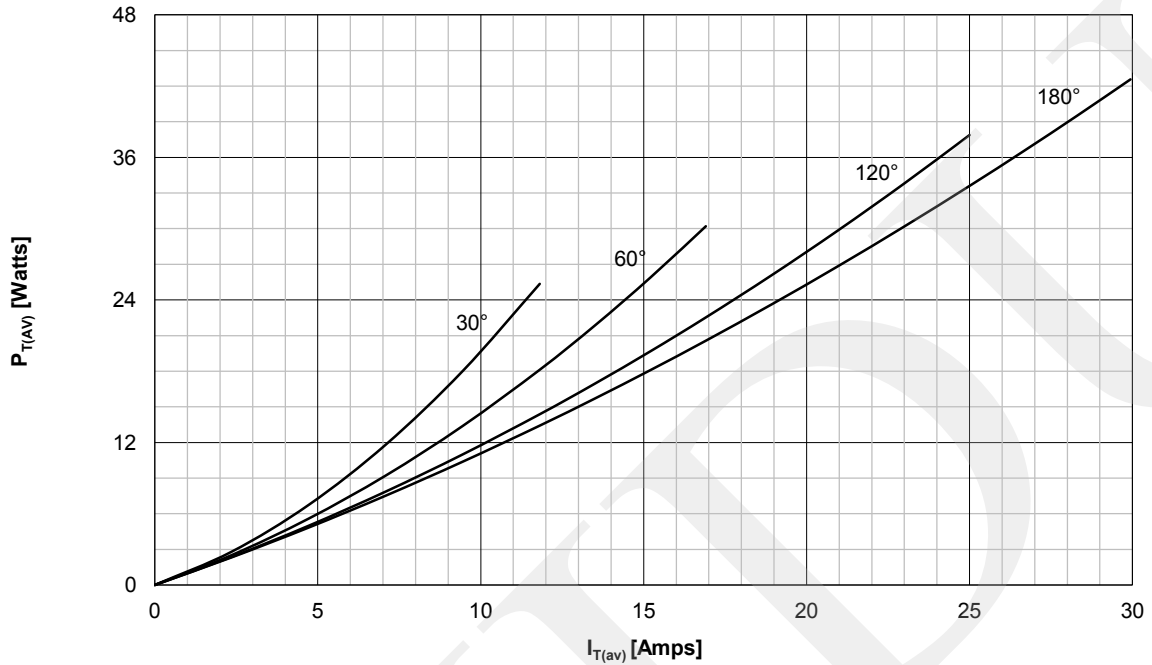
V_{DRM} / V_{RRM}	= 1600V
$I_{T(AV)}$	= 30A
I_{TSM}	= 550A
$V_{T(TO)}$	= 0.95V
r_T	= 6.40mΩ

Applications

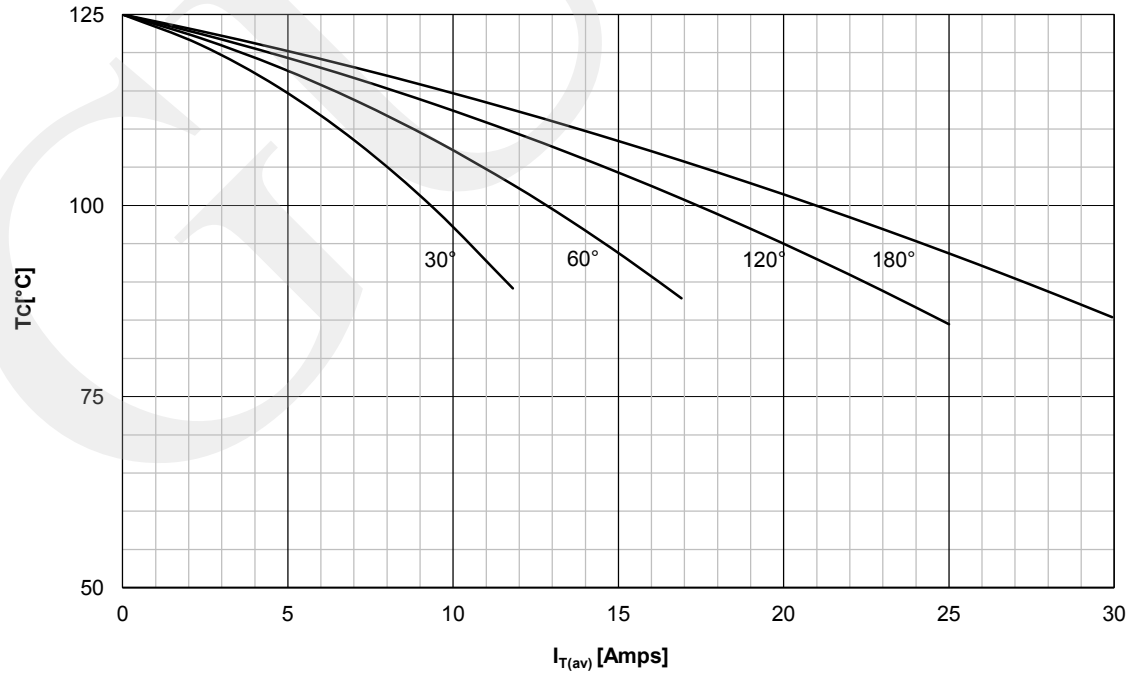
- Power Supplies
- AC Controllers
- Controlled Rectifiers
- DC motor control

Symbol	Characteristic	Conditions	T _J [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		125	200 - 1600	V
V_{RSM}	Non-repetitive peak reverse voltage		125	300 - 1700	V
V_{DRM}	Repetitive peak off-state voltage		125	200 - 1600	V
I_{RRM}	Repetitive peak reverse current	$V = V_{RRM}$	125	10	mA
I_{DRM}	Repetitive peak off-state current	$V = V_{DRM}$	125	10	mA
CONDUCTING					
$I_{T(AV)}$	Mean on state current	180° sin ,50 Hz, T _c = 85°C		30	A
I_{TRMS}	RMS on state current			47	A
I_{TSM}	Surge on state current	Sine wave, 10 ms Without reverse voltage	25	550	A
			125	500	A
$I^2 t$	$I^2 t$	Sine wave, 10 ms Without reverse voltage	25	1512	A ² s
			125	1250	A ² s
V_T	Peak on state voltage	Peak on state current = 100A	125	1.69	V
$V_{T(TO)}$	Threshold voltage		125	0.95	V
r_T	On state slope resistance		125	6.40	mΩ
SWITCHING					
di/dt	Critical rate of rise of on-state current	Repetitive	125	50	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	100	mA
V_{gt}	Gate trigger voltage	$V_D = 6V$	25	3.0	V
I_H	Holding current	$V_D = 6V$, gate open circuit	25	150	mA
I_L	Latching current	$V_D = 6V$	25	300	mA
MOUNTING					
$R_{th(j-c)}$	Thermal impedance, sin 180°	Junction to case		0.93	°C/W
$R_{th(c-h)}$	Thermal impedance	Case to heatsink		0.30	°C/W
T_j	Max. junction temperature			125	°C
T_{stg}	Storage temperature			-40 ... 125	°C
M	Mounting Torque			2	Nm
W	Weight (Approx.)			15	gm

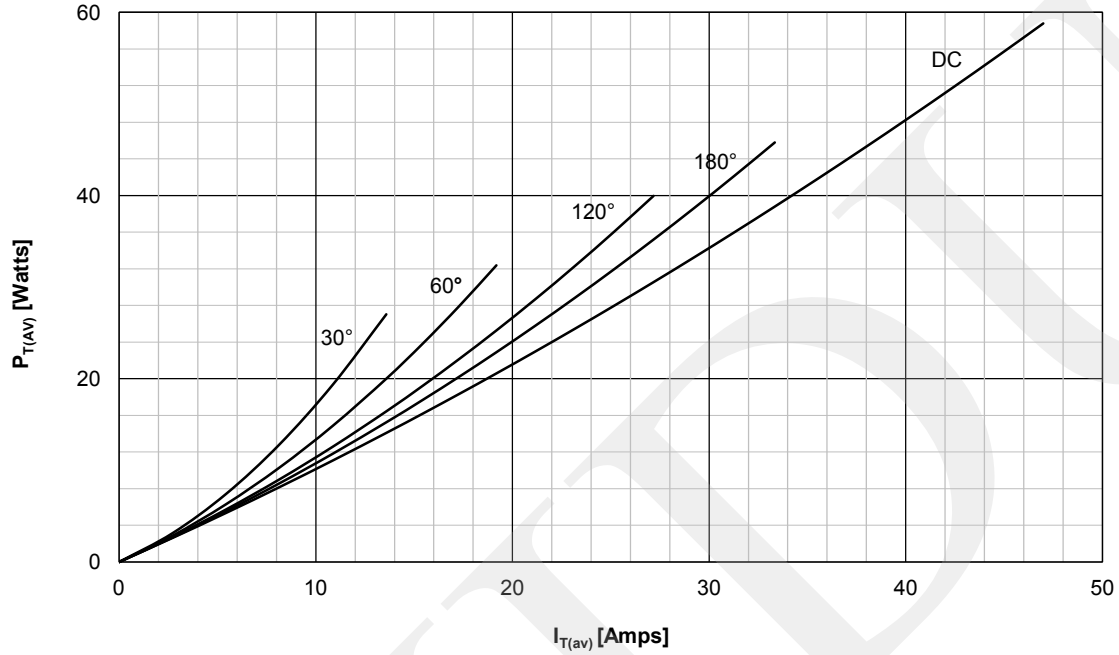
DISSIPATION CHARACTERISTICS
SINE WAVE



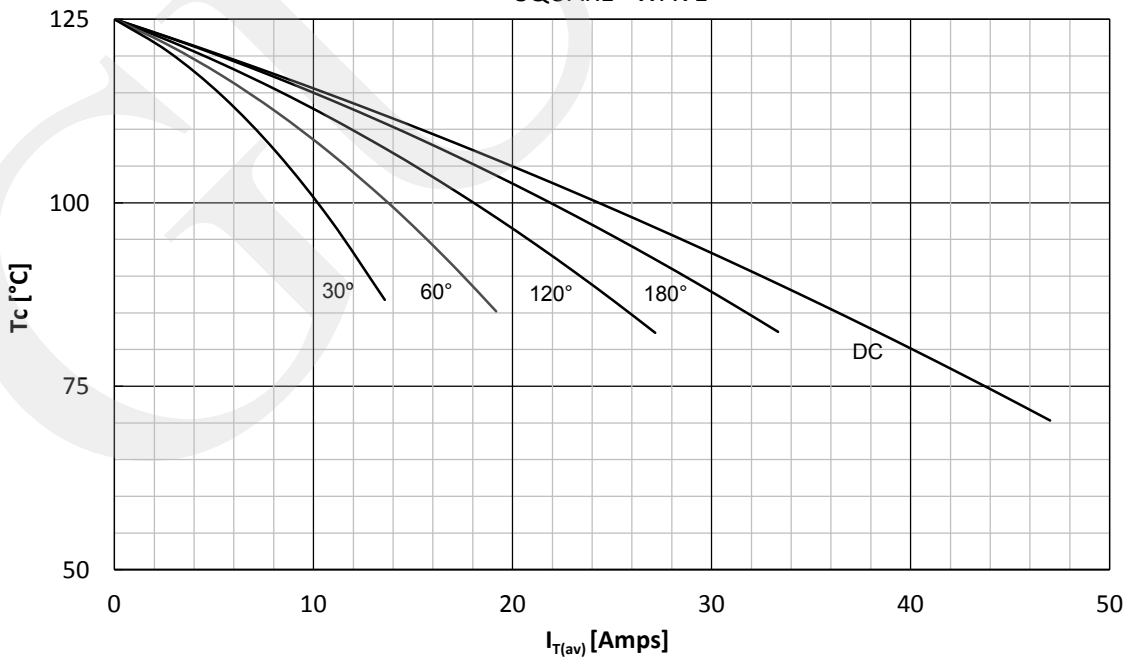
ON STATE CURRENT DERATING CURVE
SINE WAVE



DISSIPATION CHARACTERISTICS
SQUARE WAVE

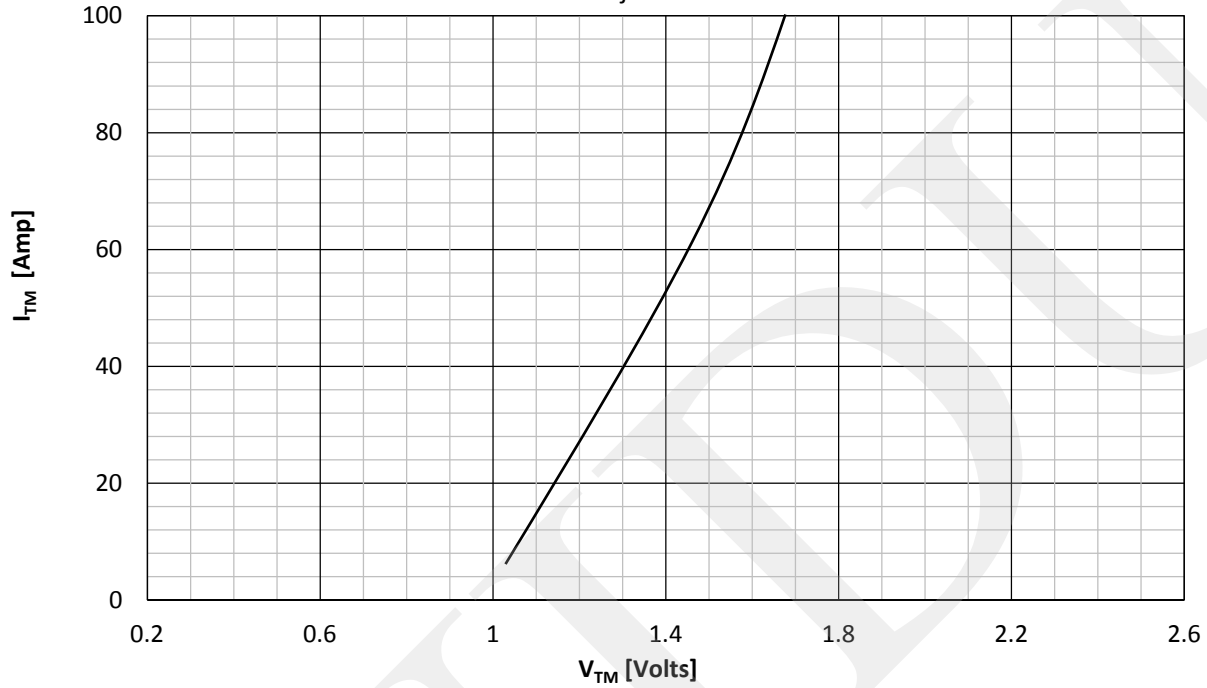


ON STATE CURRENT DERATING CURVE
SQUARE WAVE

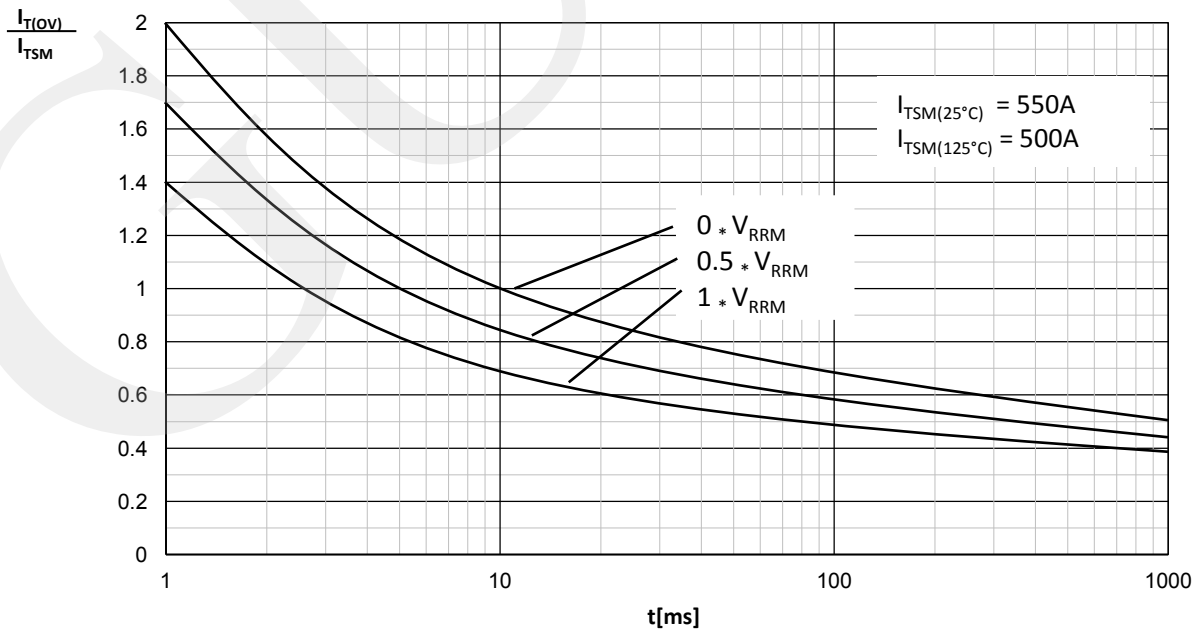


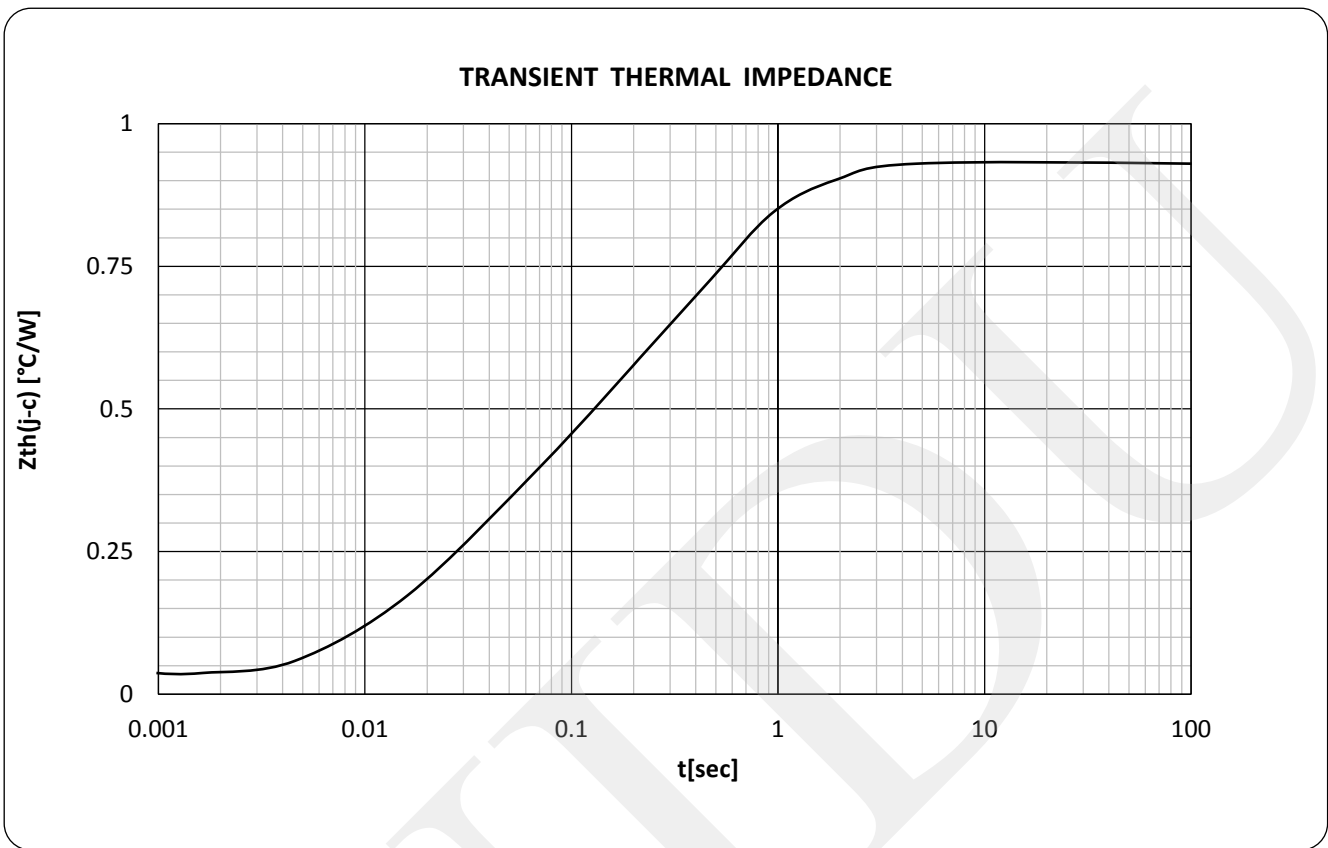
ON -STATE CHARACTERISTICS

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



SURGE CHARACTERISTICS





ORDERING INFORMATION

GDKP	31	S	XX	U
Phase Control Thyristor	Current Code	Stud / Flat Base Version	Voltage Code Code X 100 = V_{DRM}/V_{RRM}	Stud Threads U = 1/4" UNF

Order Code GDKP31S16U : 1600V V_{DRM} , V_{RRM} , Stud base Thyristor with 1/4" UNF threads

Outline

