PHASE CONTROL THYRISTOR
GDKP1258

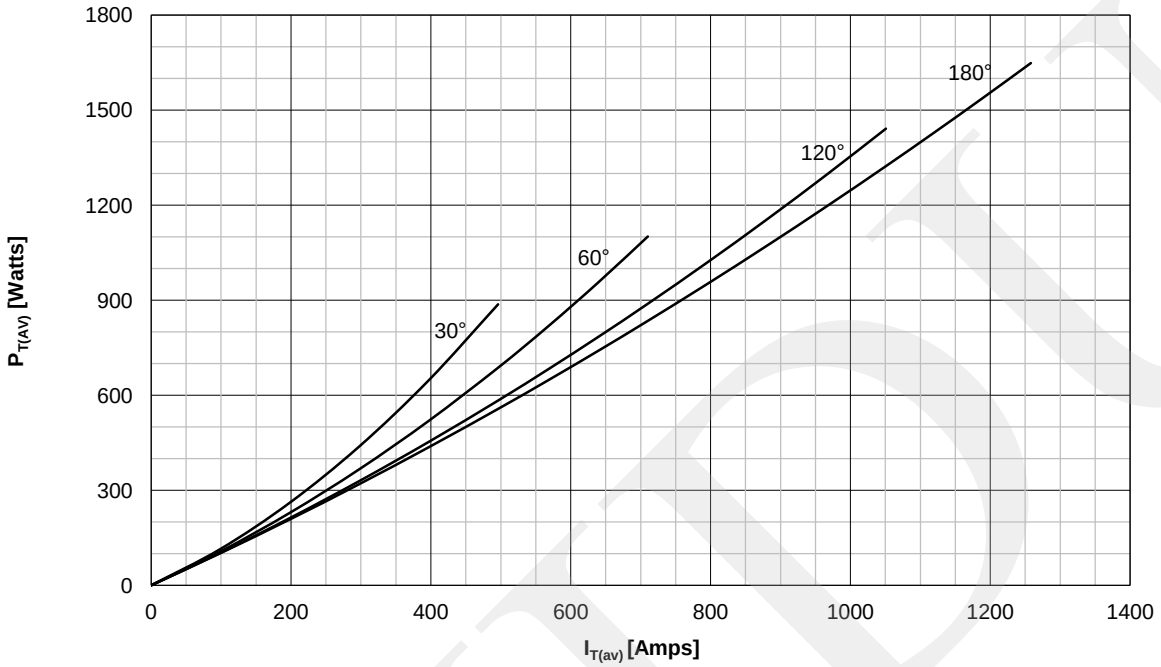
Features
- Full blocking capability over wide temperature range
- High Surge current capability
- Hermetic metal case with ceramic insulator

Key Parameters
V_{DRM} /V_{RRM} = 600V
$I_{T(AV)}$ = 1258A
I_{TSM} = 21kA
$V_{T(TO)}$ = 1.0V
r_T = 0.10mΩ

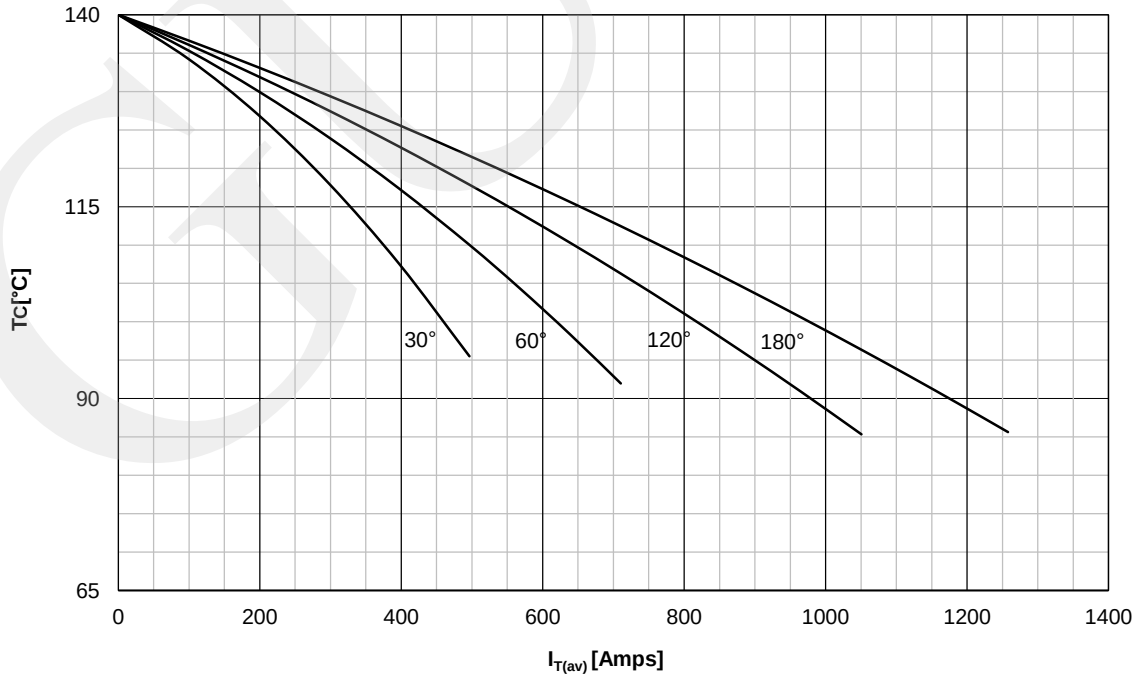
Applications
- Power Supplies
- AC Controllers
- Controlled Rectifiers
- Welding Rectifier

Symbol	Characteristic	Conditions	Tj [°C]	Value	Unit
BLOCKING					
V_{RRM}	Repetitive peak reverse voltage		140	200 - 600	V
V_{RSM}	Non-repetitive peak reverse voltage		140	300 - 700	V
V_{DRM}	Repetitive peak off-state voltage		140	200 - 600	V
I_{RRM}	Repetitive peak reverse current	V= V_{RRM}	140	80	mA
I_{DRM}	Repetitive peak off-state current	V= V_{DRM}	140	80	mA
CONDUCTING					
$I_{T(AV)}$	Mean on state current	180° sin ,50 Hz, T_c =85°C, double side cooled		1258	A
I_{TRMS}	RMS on state current			1975	A
I_{TSM}	Surge on state current	Sine wave, 10 ms Without reverse voltage	25	21.0	kA
			140	20.0	kA
I^2t	I^2t	Sine wave, 10 ms Without reverse voltage	25	2205 x 10^3	A^2s
			140	2000 x 10^3	A^2s
V_T	Peak on state voltage	Peak on state current = 3000A	140	1.40	V
$V_{T(TO)}$	Threshold voltage		140	1.0	V
r_T	On state slope resistance		140	0.10	mΩ
SWITCHING					
di/dt	Critical rate of rise of on-state current	Repetitive	140	150	A/µs
dv/dt	Critical rate of rise of off-state voltage	V_{DR} = 67%V_{DRM}	140	1000	V/µs
GATE					
I_{gt}	Gate trigger current	V_D=6V	25	200	mA
V_{gt}	Gate trigger voltage	V_D=6V	25	3.0	V
I_H	Holding current	V_D=6V, gate open circuit	25	600	mA
I_L	Latching current	V_D=6V	25	1000	mA
MOUNTING					
$R_{th(j-c)}$	Thermal impedance, sin 180°	Junction to case, Double side cooled		0.033	°C/W
$R_{th(c-h)}$	Thermal impedance	Case to heatsink, Double side cooled		0.005	°C/W
T_j	Max. junction temperature			140	°C
T_{stg}	Storage temperature			-40 140	°C
M	Mounting Torque			14 - 15	KN
W	Weight (Approx.)			160	gm

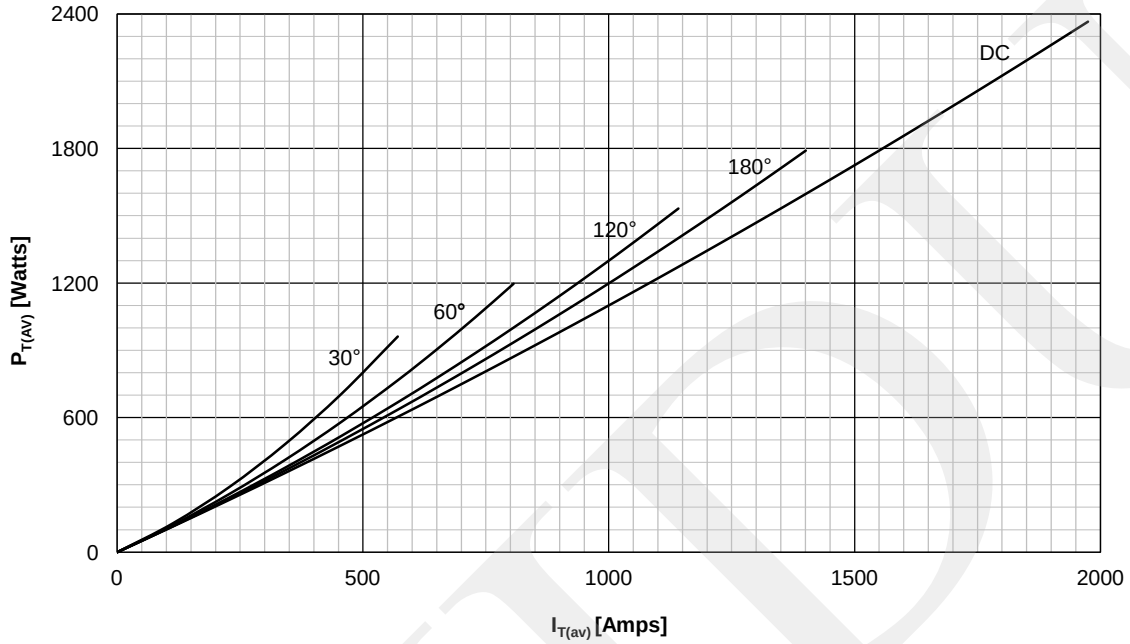
DISSIPATION CHARACTERISTICS
SINE WAVE



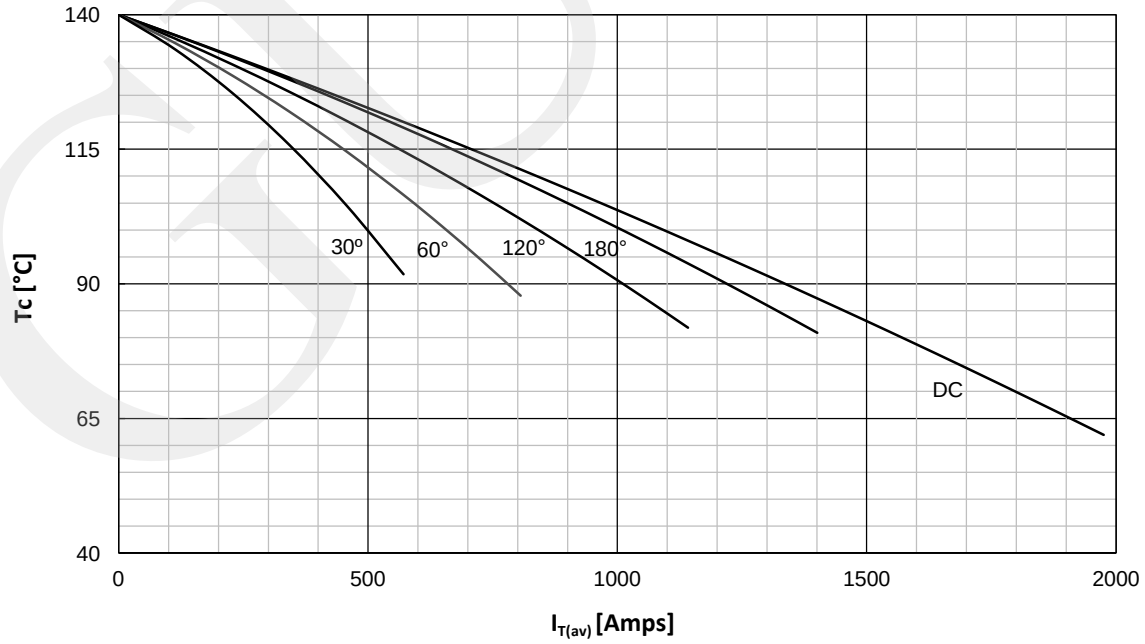
ON STATE CURRENT DERATING CURVE
SINE WAVE



DISSIPATION CHARACTERISTICS
SQUARE WAVE

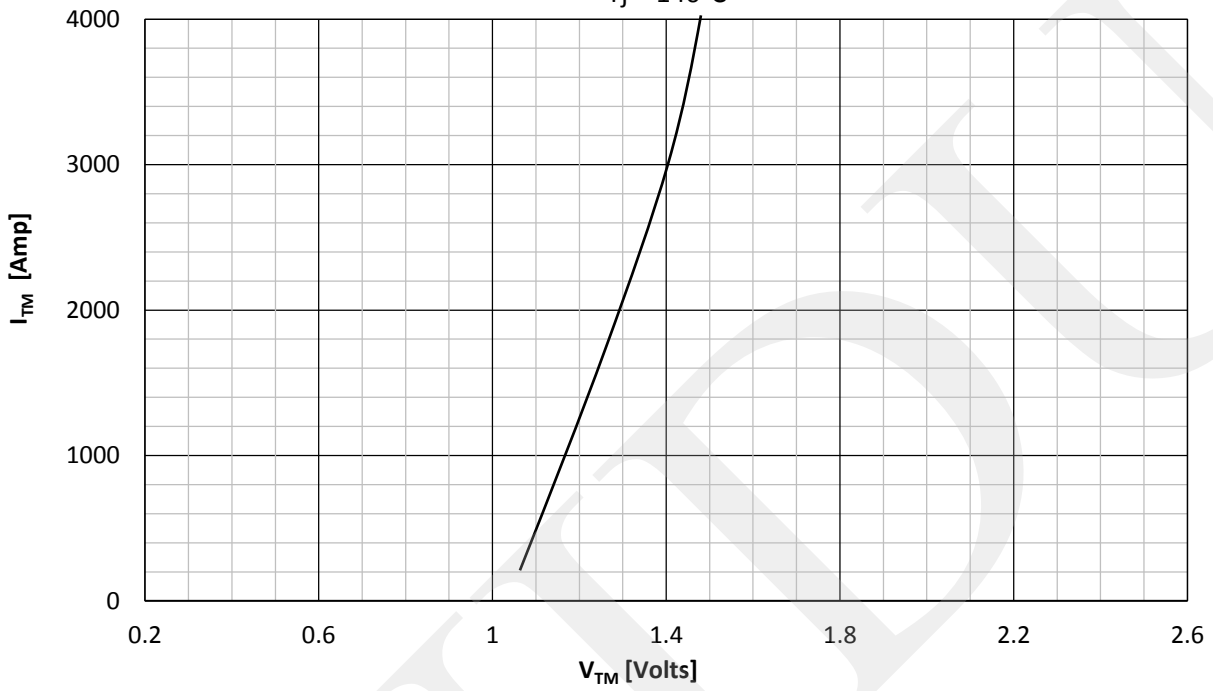


ON STATE CURRENT DERATING CURVE
SQUARE WAVE

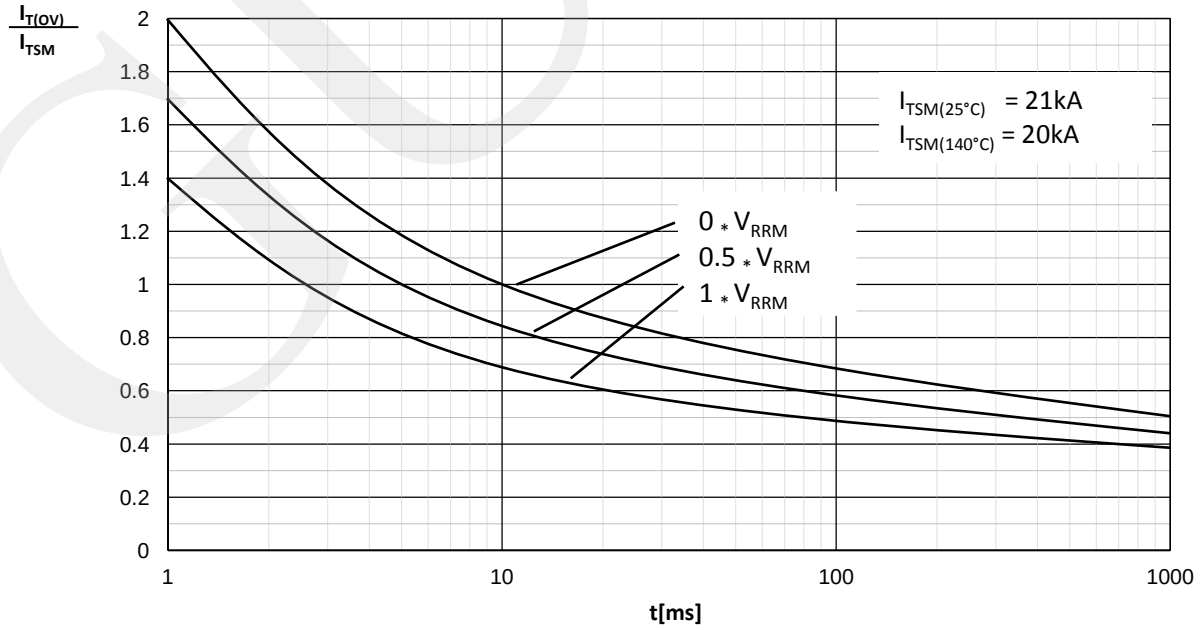


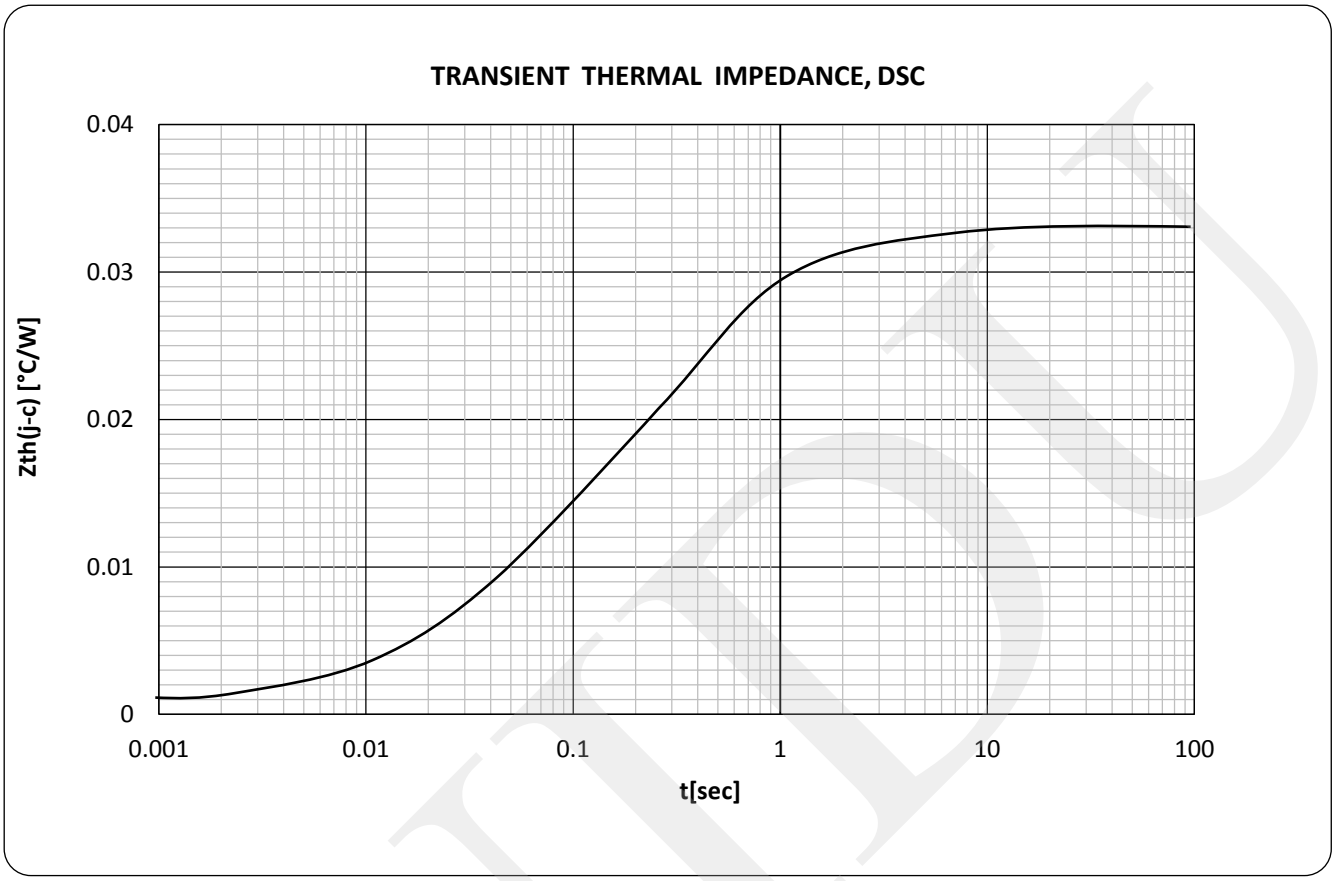
ON -STATE CHARACTERISTICS

Tj = 140°C



SURGE CHARACTERISTICS



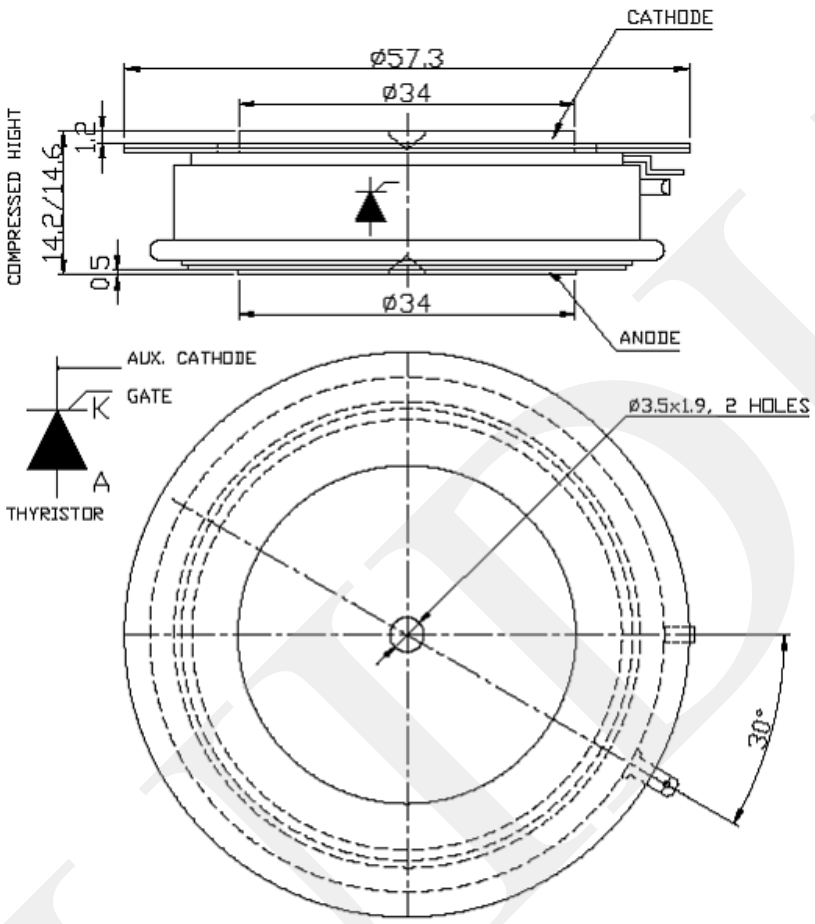


ORDERING INFORMATION

GDKP	1258	C	X X
Phase Control Thyristor	Current code	Capsule Version	Voltage Code Code X 100 = V_{DRM}/V_{RRM}

Order Code GDKP1258C06 – 600V V_{DRM},V_{RRM}, 14mm clamp height capsule

Outline



硅都 GUIDU ® 功率半导体专家 Power Semiconductor Expert

SHANGHAI GUIDU TECHNOLOGY CO., LTD.
No. 3398,Huqingping Rd., Qingpu,
Dist., Shanghai 201703, China

www.guidutech.com

Tel.: +86 573 84828286
Fax.: +86 573 84828278

E-mail : sales@guidutech.com

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