Phase Control Thyristors

Features

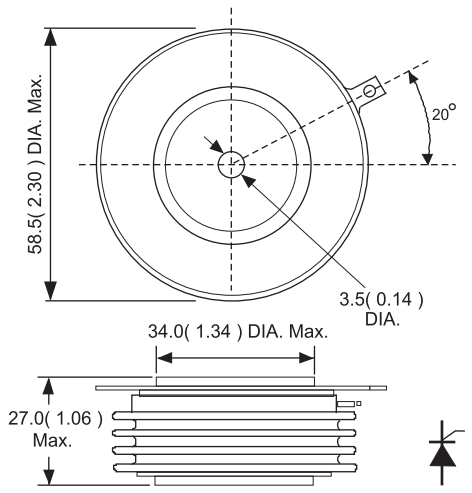
1. Center amplifying gate.
2. Metal Case With Ceramic insulator.
3. Typical application
   - DC motor control
   - Controlled DC power supplies
   - AC controllers

Ordering code

1300	PT	xx	C	0
(1)	(2)	(3)	(4)	(5)

(1) Maximum average on-state current , A
(2) For Phase Control Thyristor
(3) Voltage code , code x 100 = V_{RRM} / V_{DRM}
(4) package style : A , B , C , D ,E for Disc Type
(5) Terminal types
0 - for eyelet

C TYPE



All dimensions in millimeters (inches)

Electrical Characteristics

Symbol	Parameter	Condition	Value			Unit
			Min.	Type	Max.	
$I_{T(AV)}$	Mean on-state current	180° half sine wave , 50Hz Double side cooled , T_C = 55°C			1300	A
$I_{T(RMS)}$	Max. RMS on-state current	Double side cooled , T_{hs}=55°C			2576	A
V_{RRM} V_{DRM}	Repetitive peak off-state voltage Repetitive peak reverse voltage	V_{DRM} & V_{RRM} t_p=10ms V_{DsM} & V_{RsM} = V_{DRM} & V_{RRM} + 100V	1800		2600	V
I_{TSM}	Surge on-state current	t_p=10ms , V_{RM}=0.6V_{RRM}			17.6	KA
I^2t	For fusing coordination				$1.55x10^6$	A^2s
$V_{T(TO)}$	Threshold voltage				0.11	V
r_t	On-state slope resistance				0.28	mΩ
V_{TM}	Max. Forward voltage drop	I_{TM}=2550A			2	V
I_H	Holding current	T_j=25°C			1000	mA
$d_{i/dt}$	Cirtical rate of rise of turned-on current		300		600	A/μs
t_q	Typical turn-off time	I_{TM}=400A , $d_{v/dt}$=30V/μs $d_{iRR/dt}$=-10 A/μs			150	μs
V_{GD}	Non-trigger gate voltage				0.25	V
$d_{v/dt}$	Cirtical rate of rise of off-state voltage	V_D=80% V_{DRM}	1000			V/μs
P_G	Max. average gate power				4	W
P_{GM}	Max. peak gate power square				30	W
I_{GT}	Gate trigger current	T_j=25°C , V_D=10V , I_T=2A			300	mA
V_{GT}	Gate trigger voltage	T_j=25°C			3.0	V
T_j	Max. Operating temperature range		- 40		125	°C
T_{stg}	Storage temperature		- 40		150	°C
$R_{th(j-h)}$	Thermal resistance(junction to heatsink)	Double side cooled , clamping force 8.0 KN			0.035	°C/ W
F_m	Mounting force		10		20	KN
W_t	Approximate weight			255		g

Figure 1 – On-state current vs. Power dissipation – Double Side Cooled (Sine wave)

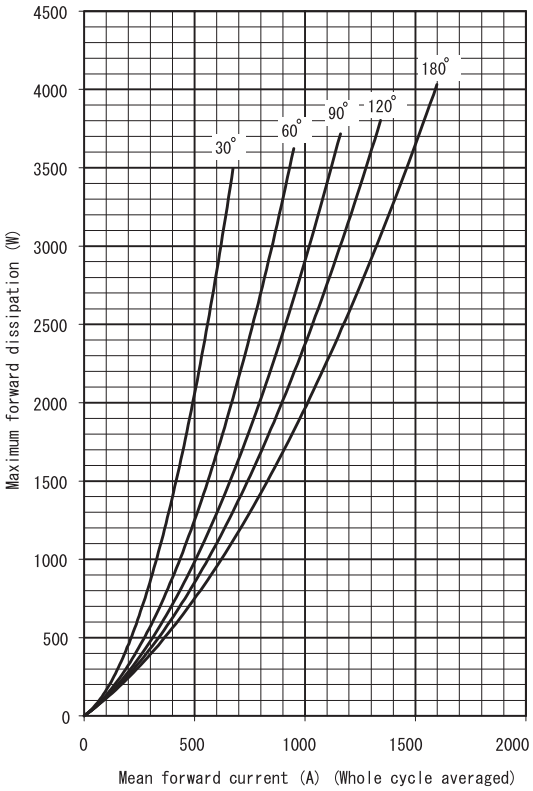


Figure 2 – On-state current vs. Heatsink temperature – Double Side Cooled (Sine wave)

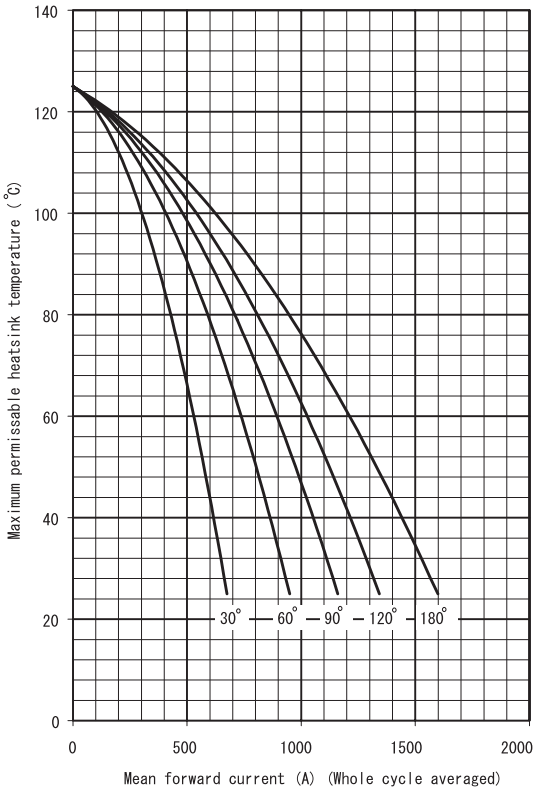


Figure 3 – On-state current vs. Power dissipation – Double Side Cooled (Square wave)

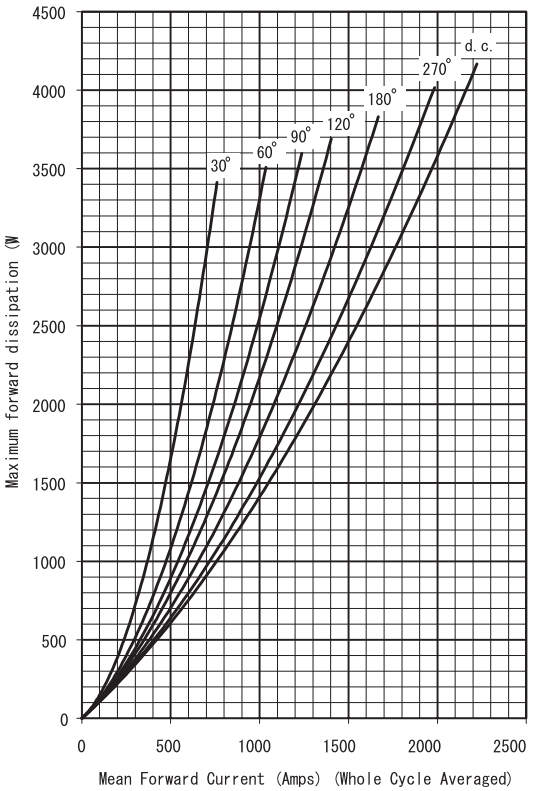


Figure 4 – On-state current vs. Heatsink temperature – Double Side Cooled (Square wave)

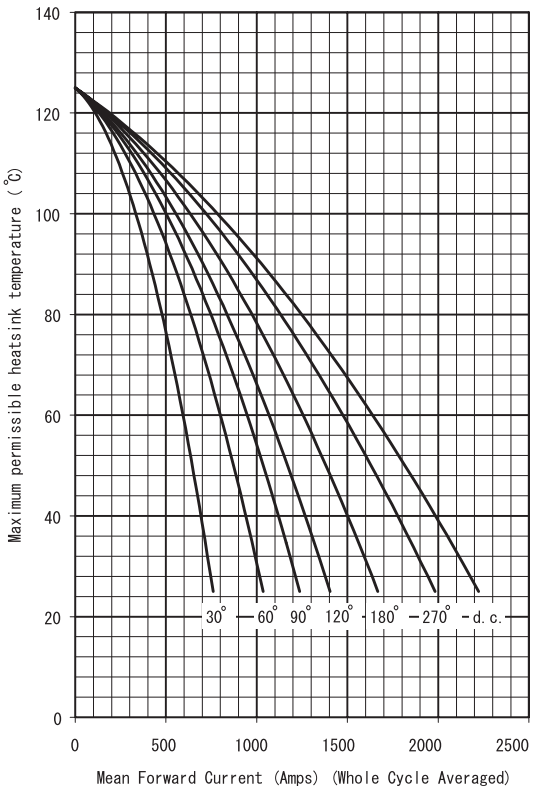


Figure 5 – On-state current vs. Power dissipation – Single Side Cooled (Sine wave)

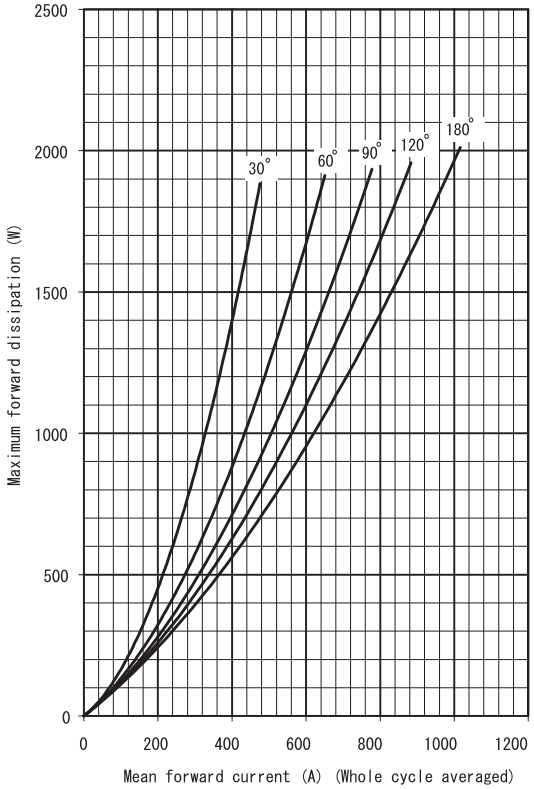


Figure 6 – On-state current vs. Heatsink temperature – Single Side Cooled (Sine wave)

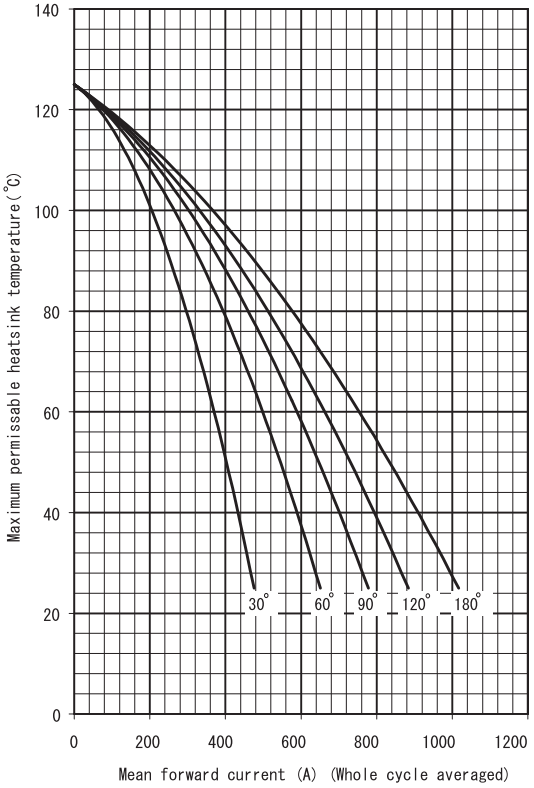


Figure 7 – On-state current vs. Power dissipation – Single Side Cooled (Square wave)

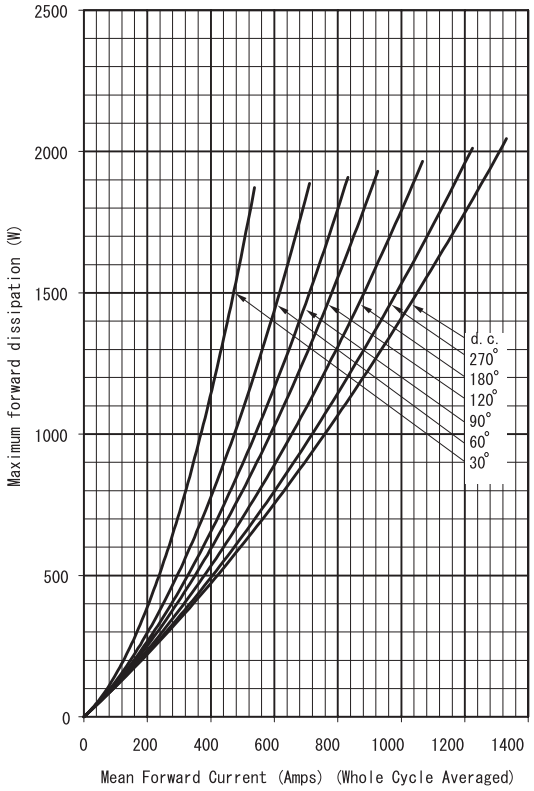


Figure 8 – On-state current vs. Heatsink temperature – Single Side Cooled (Square wave)

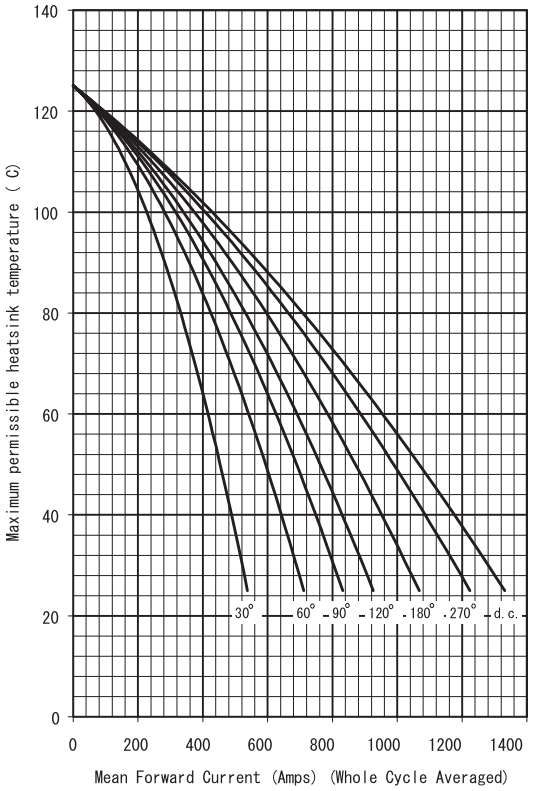


Figure 9 – On-state characteristics of Limit device

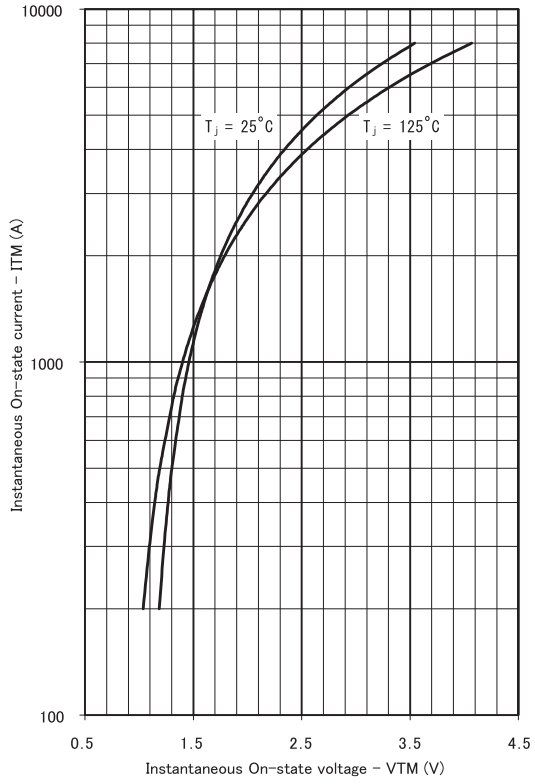


Figure 10 – Transient Thermal Impedance

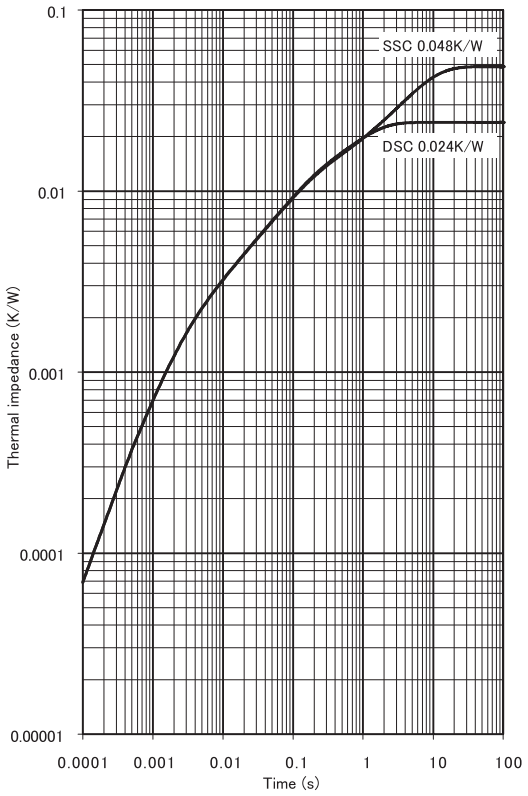


Figure 11 – Gate Characteristics – Trigger Limits

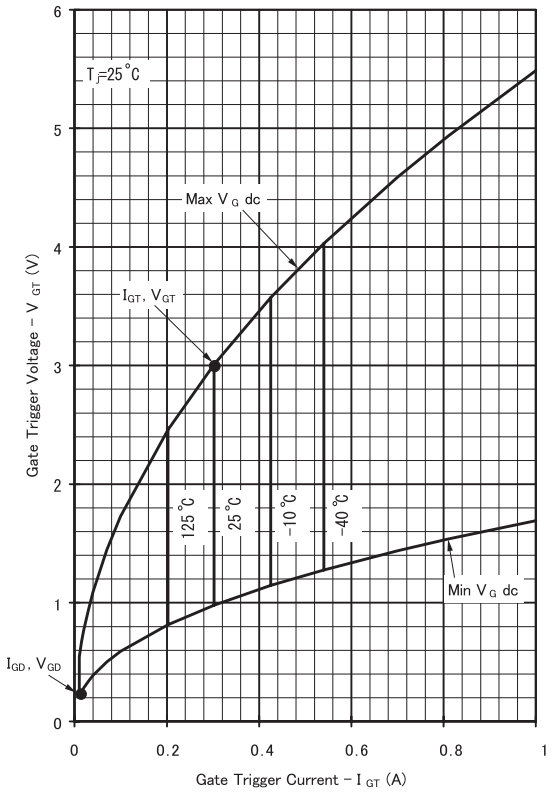


Figure 12 – Gate Characteristics – Power Curves

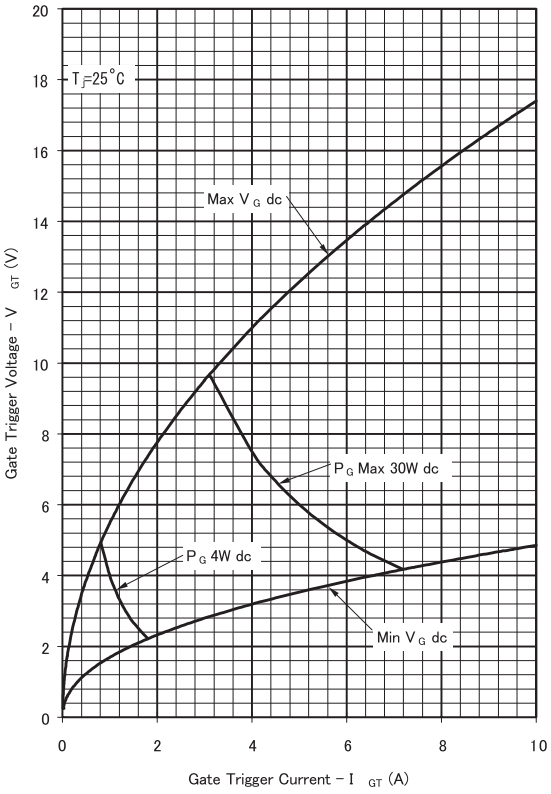


Figure 13 – Maximum surge and I^2t Ratings