

Phase Control Thyristors

Features

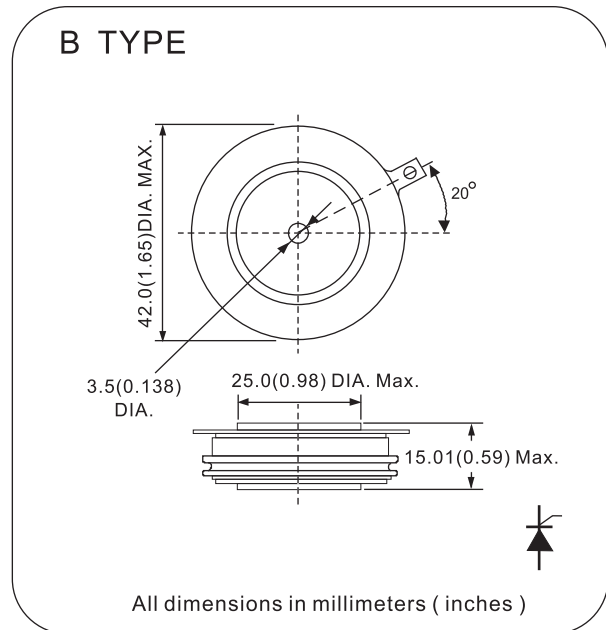
1. 700 PT series Thyristors are deigned for various power controls
2. Voltage rating up to 2000 V.
3. Typical application
 - DC motor control
 - Controlled DC power supplies
 - AC controllers

Ordering code

700	PT	xx	B	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

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 , $T_C = 55^\circ C$			750	A
$I_{T(RMS)}$	Max. RMS on-state current	Double side cooled , $T_{hs}=55^\circ C$			1500	A
V_{RRM} V_{DRM}	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM} \& V_{RRM} \ t_p=10ms$ $V_{DsM} \& V_{RsM} = V_{DRM} \& V_{RRM} + 100V$	400		2000	V
I_{TSM}	Surge on-state current	10 ms half sine wave			9000	A
I_t^2	For fusing coordination	$V_R = 0.6V_{RRM}$			405	Ka^2s
$V_{T(TO)}$	Threshold voltage				0.91	V
r_t	On-state slope resistance				0.42	mΩ
V_{TM}	Max. Forward voltage drop	$I_{TM}=900A, F=8.0KN$			1.96	V
I_H	Holding current	$V_A=12V, I_A=1A$	20		600	mA
d_i/dt	Cirtical rate of rise of turned-on current	Gate drive 20V , 20 Ω, $t_r \leq 0.5 \mu s$			1000	A/μs
t_q	Typical turn-off time	$I_{TM}=400A, d_v/dt=30V/\mu s$ $d_iRR/dt=-10 A/\mu s$			100	μs
d_v/dt	Cirtical rate of rise of off-state voltage	$V_{DM}=0.67 V_{DRM}$			500	V/μs
I_{RRM} I_{DRM}	Repetitive peak reverse current	$V_R = V_{RRM}$ $V_D = V_{DRM}$			50	mA
P_G	Max. average gate power	Square wavepulse width 100 μs			2	W
P_{GM}	Max. peak gate power square				10	W
I_{GT}	Gate trigger current	$V_A=12V, I_A=1A$	100		200	mA
V_{GT}	Gate trigger voltage		1.8		3	V
V_{GD}	DC voltage not to trigger	At 67% $V_{DRM}, T_j=T_j \text{ max.}$	0.20			V
I_{FGM}	Max. peak positive gate current	$T_j=T_j \text{ max. } t_p \leq 3s$			3	A
V_{FGM}	Max. peak positive gate voltage				16	V
V_{RGM}	Max. peak negative gate voltage				5	V
T_{stg}	Storage temperature		- 40		150	°C
T_j	Max.operating temperaturerange		- 40		125	°C
$R_{th(j-h)}$	Thermal resistance(junction to heatsink)	Double side cooled , clamping force 8.0 KN			0.04	°C/W
F_m	Mounting force		5.3		10	KN
W_t	Approximate weight			80		g

Fig. 1
Peak on-state voltage Vs. Peak on-state Current

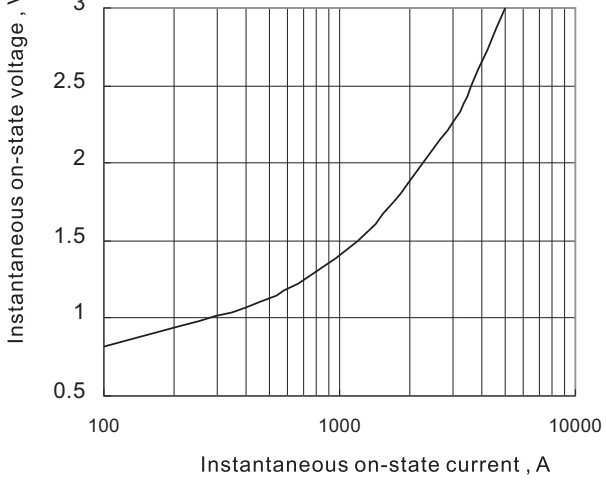


Fig. 2
Max. Junction to heatsink thermal impedance Vs. Time

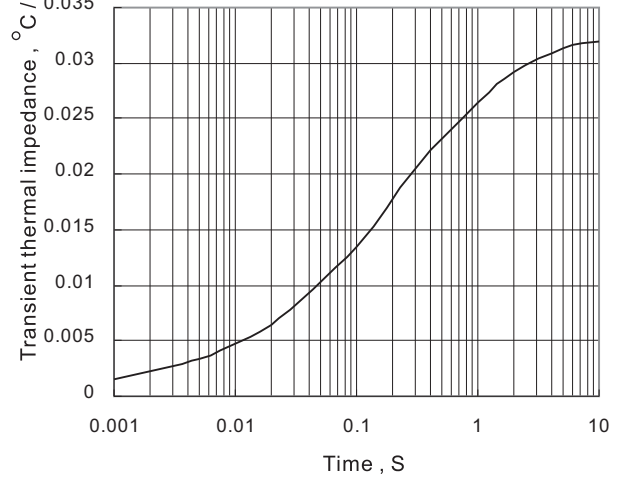


Fig. 3
Max. Power Dissipation Vs. Mean on-state Current

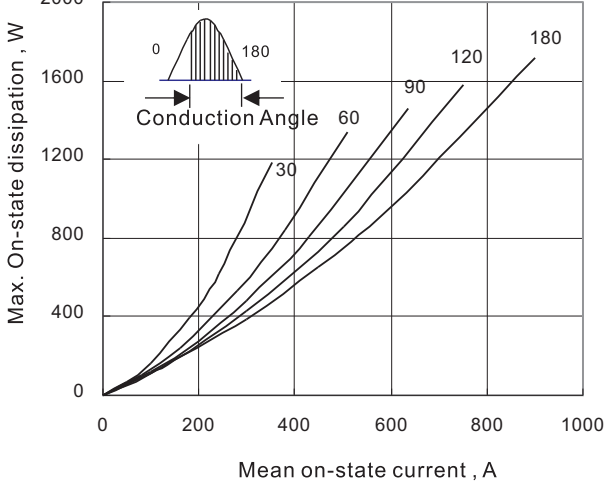


Fig. 4
Max. Case Temperature Vs. Mean on-state Current

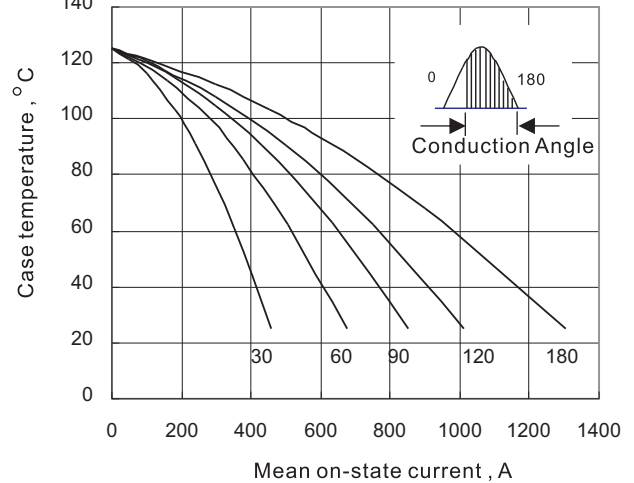


Fig. 5
Max. Power Dissipation Vs. Mean on-state Current

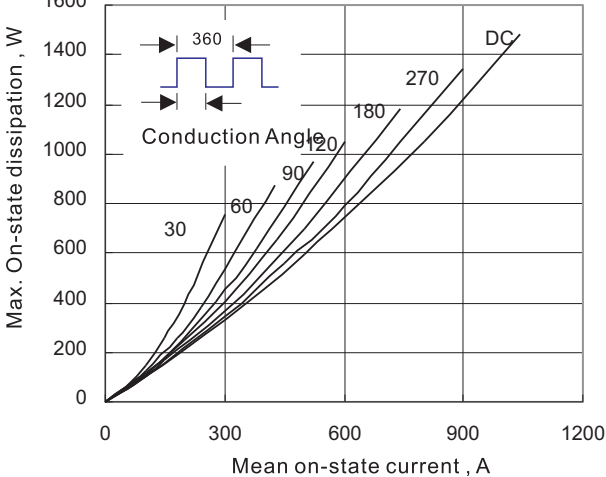


Fig. 6
Max. Case Temperature Vs. Mean on-state Current

