

## Phase Control Thyristors

### Features

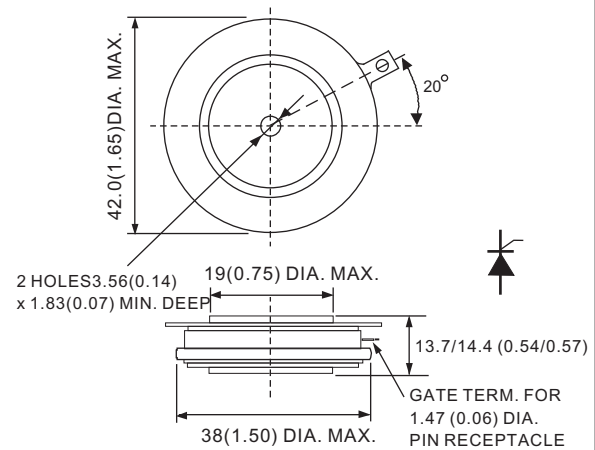
1. 400 PT series Thyristors are deigned for various power controls
2. Voltage rating up to 1800 V.
3. Typical application
  - DC motor control
  - Controlled DC power supplies
  - AC controllers

### Ordering code

400	PT	xx	A	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

### A 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 , $T_c = 55^\circ C$			400	A
$I_{T(RMS)}$	Max. RMS on-state current	Double side cooled , $T_{hs} = 25^\circ C$			769	A
$V_{RRM}$ $V_{DRM}$	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM}$ & $V_{RRM}$ $t_p = 10ms$ $V_{DSM}$ & $V_{RSM} = V_{DRM}$ & $V_{RRM} + 100V$	600		1800	V
$I_{TSM}$	Surge on-state current	10 ms half sine wave			5700	A
$I_t^2$	For fusing coordination	$V_R = 0.6V_{RRM}$			163	Ka <sup>2</sup> s
$V_{T( TO)}$	Threshold voltage				0.92	V
$r_t$	On-state slope resistance				0.88	mΩ
$V_{TM}$	Max. Forward voltage drop	$I_{TM} = 900A$ , $F = 8.0KN$			1.69	μV
$I_H$	Holding current	$V_A = 12V$ , $I_A = 1A$			600	mA
$d_i/dt$	Cirtical rate of rise of turned-on current	Gate drive 20V , 20Ω , $t_r \leq 0.5 \mu s$			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
$P_G$	Max. average gate power	Square wave pulse width 100 μs			2	W
$P_{GM}$	Max. peak gate power square				10	W
$I_{GT}$	Gate trigger current	$V_A = 12V$ , $I_A = 1A$	90		150	mA
$V_{GT}$	Gate trigger voltage		1.8		3	V
$T_{stg}$	Storage tempe rature		- 40		140	°C
$T_j$	Max.operating temperaturerange		- 40		125	°C
$R_{th( j-h)}$	Thermal resistance(junction to heatsink)	Double side cooled , clampi ng force 8.0 KN			0.17	°C/ W
$F_m$	Moun ting force		4		5	KN
$W_t$	Approximate weight			50		g

Fig. 1 Peak On-state Voltage Vs. Peak On-state Current

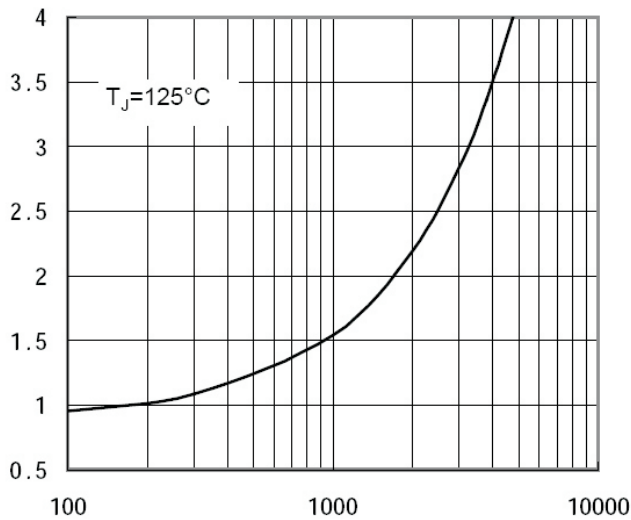


Fig. 2 Max. junction To heatsink Thermal Impedance Vs. Time

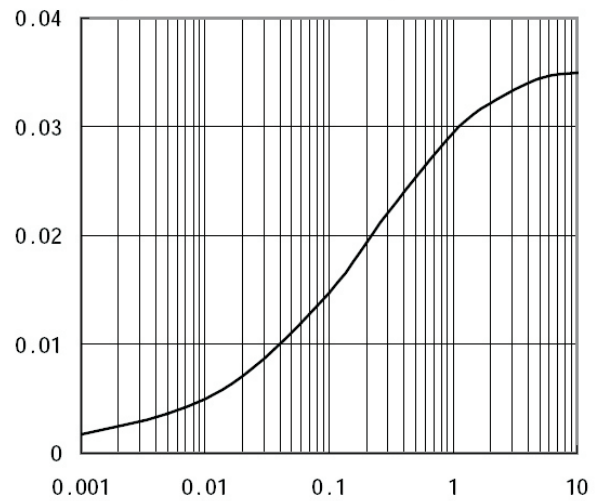


Fig. 3 Max. Power Dissipation Vs. Mean On-state Current

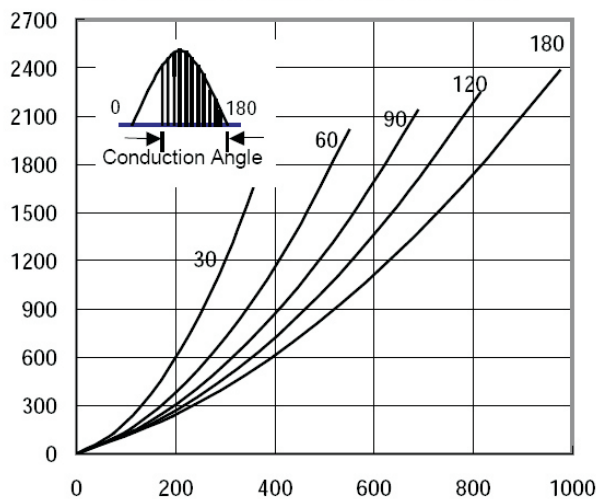


Fig. 4 Max. heatsink Temperature Vs. Mean On-state Current

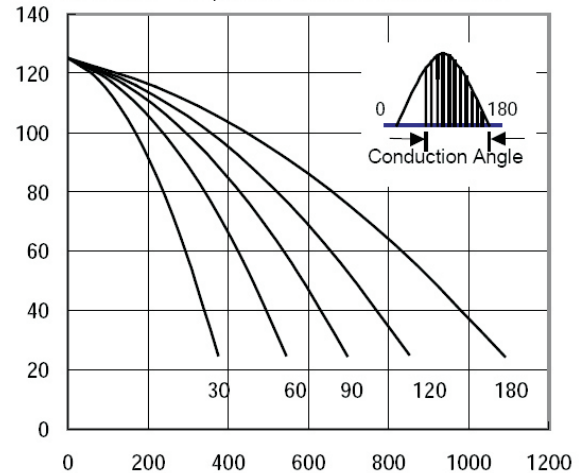


Fig. 5 Max. Power Dissipation Vs. Mean On-state Current

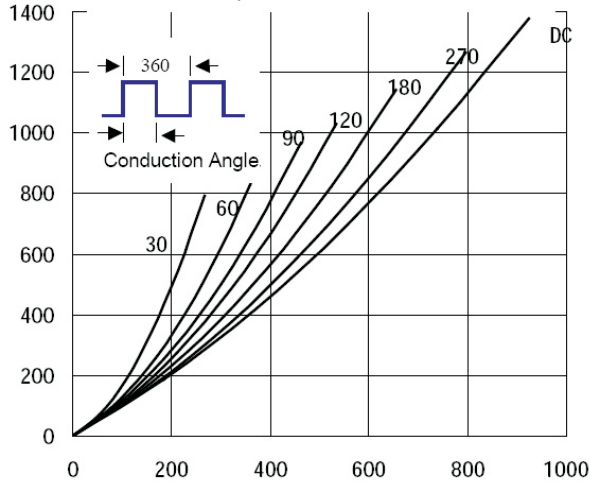


Fig. 6 Max. heatsink Temperature Vs. Mean On-state Current

