

## Phase Control Thyristors

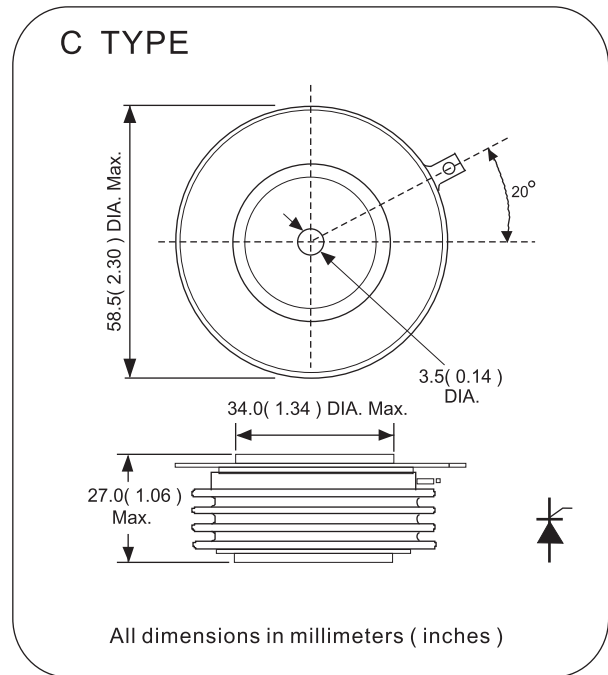
### Features

- 1000 PT series Thyristors are designed for various power controls
- Voltage rating up to 2000 V.
- Typical application
  - DC motor control
  - Controlled DC power supplies
  - AC controllers

#### Ordering code

<b>1000</b>	<b>PT</b>	<b>xx</b>	<b>C</b>	<b>0</b>
(1)	(2)	(3)	(4)	(5)

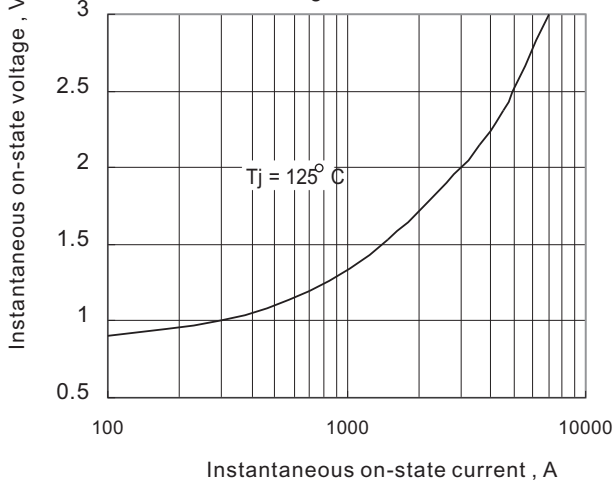
- (1) Maximum average on-state current , A
- (2) For Phase Control Thyristor
- (3) Voltage code , code x 100 =  $V_{RRM} / V_{DRM}$
- (4) package style : A , B , C , D ,E for Disc Type
- (5) Terminal types  
0 - for eyelet



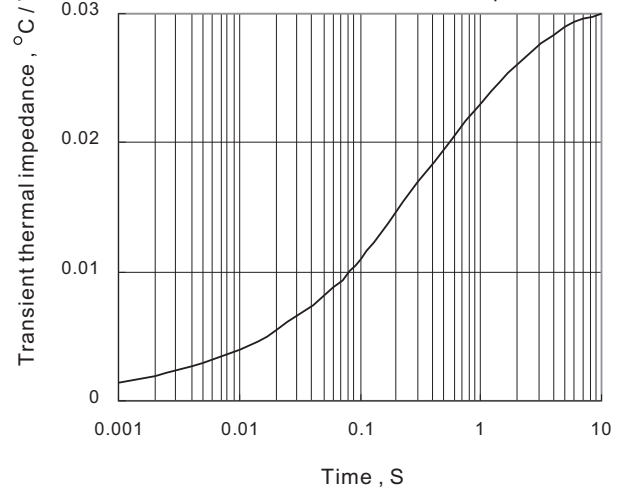
### Electrical Characteristics

Symbol	Parameter	Condition	Value			Unit
			Min.	Type	Max.	
$I_{T(AV)}$	Mean on-state current	180° half sine wave, 50Hz Double side cooled, $T_C=55^\circ\text{C}$			1000	A
$I_{T(RMS)}$	Max. RMS on-state current	Double side cooled, $T_{HS}=25^\circ\text{C}$			2000	A
$V_{RRM}$ $V_{DRM}$	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM}$ & $V_{RRM}$ $t_p=10\text{ms}$ $V_{DSM}$ & $V_{RSM} = V_{DRM} + V_{RRM} + 100\text{V}$	1200		2000	V
$I_{TSM}$	Surge on-state current	10 ms half sine wave			17800	A
$I_t^2$	For fusing coordination	$V_R=0.6V_{RRM}$			1591	KA <sup>2</sup> s
$V_{T(TO)}$	Threshold voltage				1.11	V
$r_t$	On-state slope resistance				0.28	mΩ
$V_{TM}$	Max. Forward voltage drop	$I_{TM}=900\text{A}$ , $F=8.0\text{KN}$			1.62	V
$I_H$	Holding current	$V_A=12\text{V}$ , $I_A=1\text{A}$			600	mA
$d_i/dt$	Critical rate of rise of turned-on current	Gate drive 20V, 20Ω, $t_r \leq 0.5 \mu\text{s}$			1000	A/μs
$t_q$	Typical turn-off time	$I_{TM}=400\text{A}$ , $d_v/dt=30\text{V}/\mu\text{s}$ $d_iRR/dt=-10\text{A}/\mu\text{s}$			150	μs
$d_v/dt$	Critical rate of rise of off-state voltage				500	V/μs
$P_G$	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	$V_A=12\text{V}$ , $I_A=1\text{A}$			300	mA
$V_{GT}$	Gate trigger voltage				3	V
$T_{stg}$	Storage temperature		- 40		125	°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			0.035	°C/W
$F_m$	Mounting force		10		20	KN
$W_t$	Approximate weight			255		g

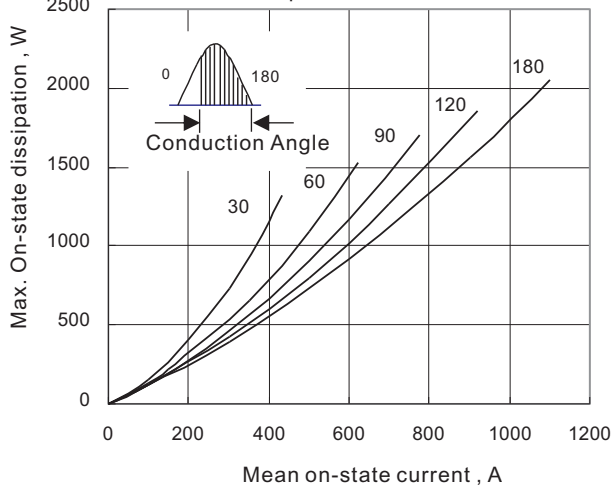
**Fig. 1**  
Peak on-state voltage Vs. Peak on-state Current



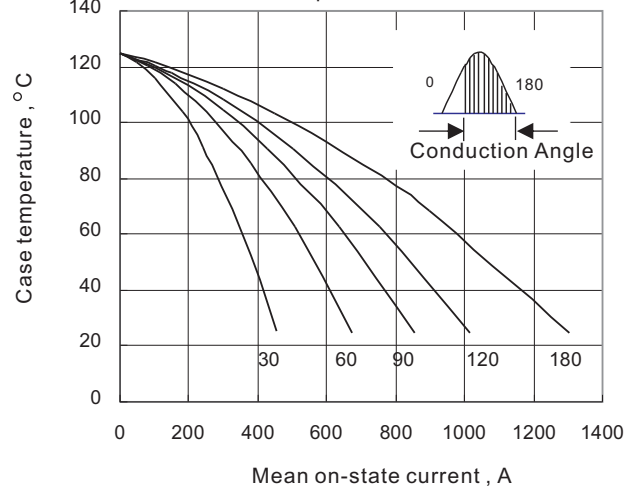
**Fig. 2**  
Max. Junction to heatsink thermal impedance Vs. Time



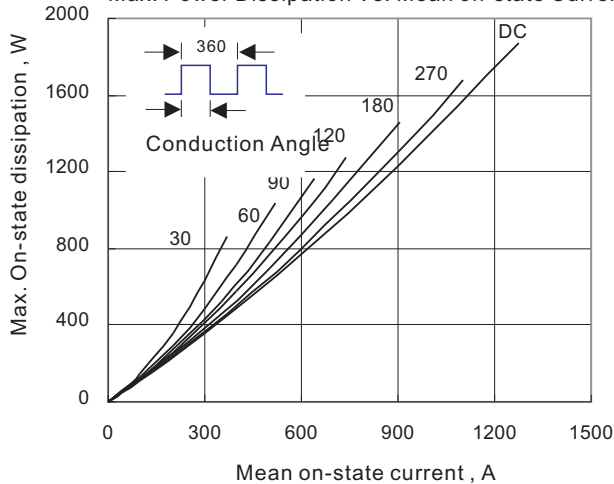
**Fig. 3**  
Max. Power Dissipation Vs. Mean on-state Current



**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

