

## Phase Control Thyristors

### Features

1. 910PT series Thyristors are designed for various power controls
2. Voltage rating up to 2600V
3. Typical application

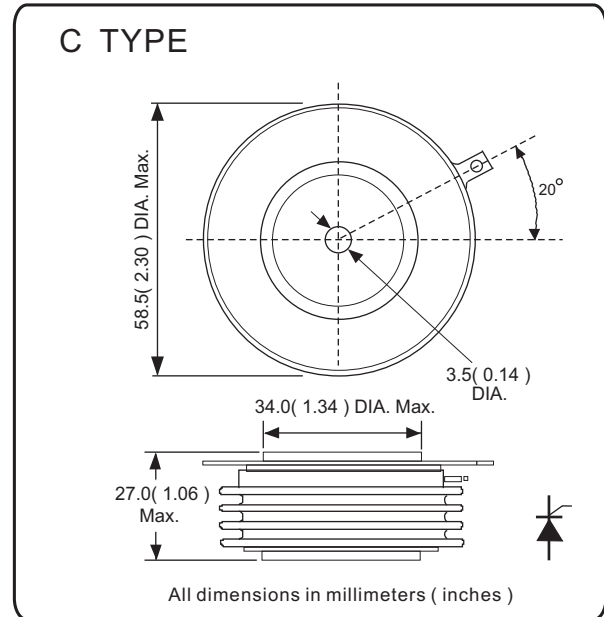
- DC motor control
- Controlled DC power supplies
- AC controllers

Ordering code

<b>910</b>	<b>PT</b>	<b>XX</b>	<b>C</b>	<b>0</b>
(1)	(2)	(3)	(4)	(5)

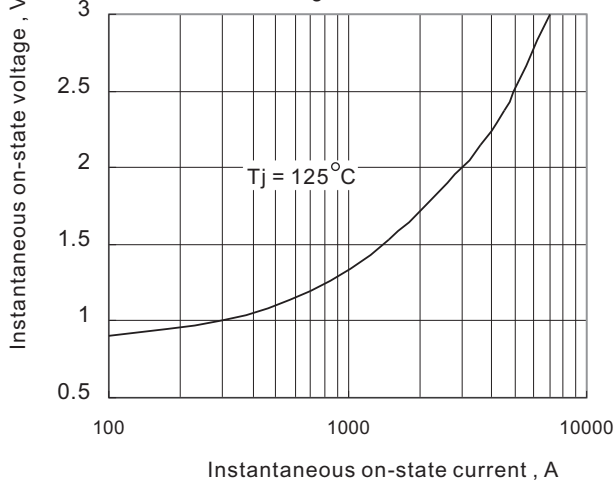
- (1) Maximum average on-state current , A
- (2) For Phase Control Thyristor
- (3) Voltage code , code x 100 =  $V_{RRM} / V_{DRM}$
- (4) package style : A , B , C , D , E for Disc Type
- (5) Terminal types  
0 - for eyelet

### Electrical Characteristics

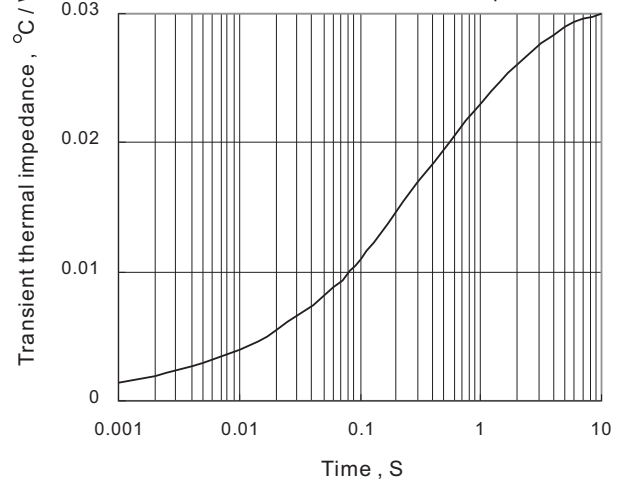


Symbol	Parameter	Condition	Value			Unit
			Min.	Type	Max.	
$I_{T(AV)}$	Mean on-state current	180° half sine wave , 50Hz Double side cooled , $T_C = 55^\circ C$			910	A
$I_{T(RMS)}$	Max. RMS on-state current	Double side cooled , $T_{hs}=55^\circ C$			1788	A
$V_{RRM}$ $V_{DRM}$	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM} \& V_{RRM} \ t_p=10ms$ $V_{DsM} \& V_{RsM} = V_{DRM} \& V_{RRM} + 100V$	2000		2600	V
$I_{TSM}$	Surge on-state current	10 ms half sine wave			9200	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	$I_{TM}=2000A$ , $F=14.1KN$			1.62	V
$I_H$	Holding current	$V_A=12V$ , $I_A=1A$			600	mA
$d_i/dt$	Critical rate of rise of turned-on current	Gate drive 20V , 20 Ω , $t_r \leq 0.5 \mu s$			600	A/μs
$t_q$	Typical turn-off time	$I_{TM}=400A$ , $d_v/dt=30V/\mu s$ $d_{iRR}/dt=-10 A/\mu s$			150	μs
$d_v/dt$	Critical rate of rise of off-state voltage	$V_{DM}=0.67 V_{DRM}$	200		1000	V/μs
$I_{RRM}$ $I_{DRM}$	Repetitive peak reverse current	$V_R = V_{RRM}$ $V_D = V_{DRM}$			80	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		1.1		3.0	V
$V_{GD}$	DC voltage not to trigger	At 67% $V_{DRM}$ , $T_j=T_j \text{ max.}$	0.25			V
$I_{FGM}$	Max. peak positive gate current	$T_j=T_j \text{ max.}$ , $t_p \leq 3s$			4	A
$V_{FGM}$	Max. peak positive gate voltage				16	V
$V_{RGM}$	Max. peak negative gate voltage				5	V
$T_{stg}$	Storage temperature		- 40		140	°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

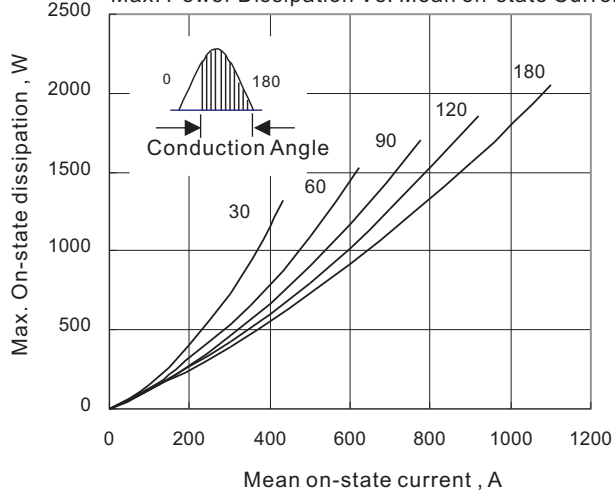
**Fig. 1**  
Peak on-state voltage Vs. Peak on-state Current



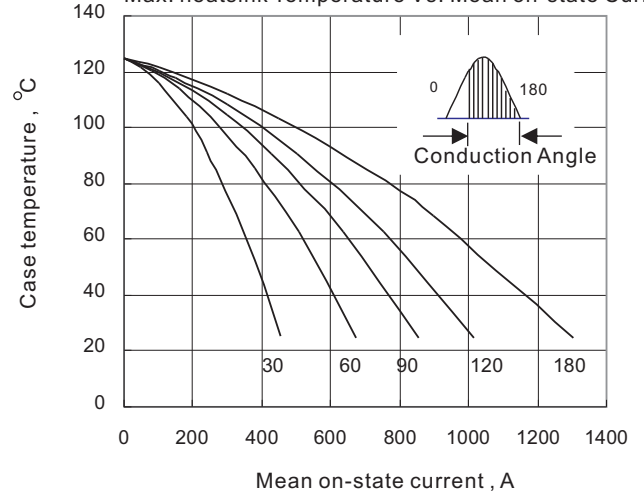
**Fig. 2**  
Max. Junction to heatsink thermal impedance Vs. Time



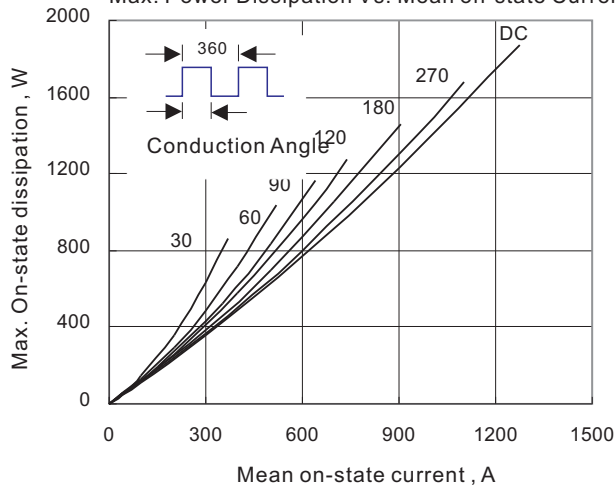
**Fig. 3**  
Max. Power Dissipation Vs. Mean on-state Current



**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

