Phase Control Thyristors

Features

1.2500 PT series Thyristors are deigned for various power controls

2. Voltage rating up to 1600 V.

3. Typical application

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

Ordering code

2500	PT	XX	E	0
(1)	(2)	(3)	(4)	(5)

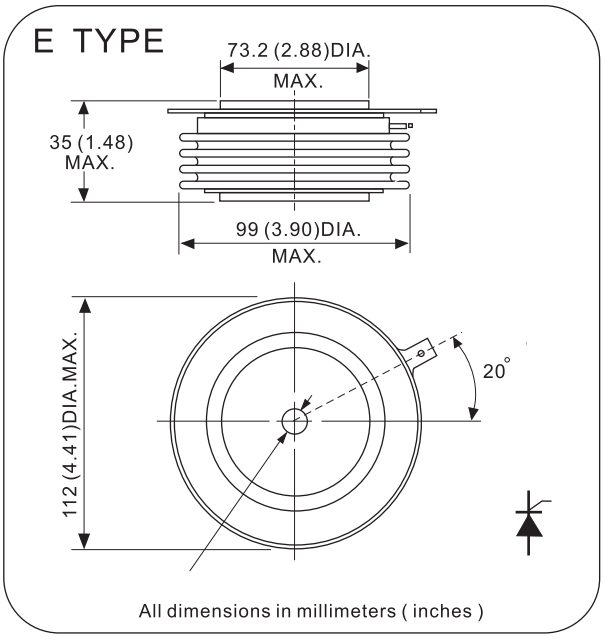
(1) Maximum average on-state current , A

(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 =85°C			2500	A
$I_{T(RMS)}$	Max. RMS on-state current	Double side cooled , T_{hs}=55°C			4420	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	1200		1600	V
I_{TSM}	Surge on-state current	10 ms half sine wave V_R = 0.6V_{RRM}			22	KA
I^2t	For fusing coordination				$13x10^6$	A^2s
$V_{T(TO)}$	Threshold voltage				0.9	V
r_t	On-state slope resistance				0.19	mΩ
V_{TM}	Max. Forward voltage drop	I_{TM}=5000A , F=35KN			1.4	V
I_H	Holding current	V_A=12V , I_A=1A			1000	mA
$d_{i/dt}$	Cirtical rate of rise of turned-on current	Gate drive 20V , 20Ω , t_r ≤0.5 μs			250	A/μs
tq	Maximum turn-off time				400	μs
I_{RRM} I_{DRM}	Repetitive peak reverse current	V_R = V_{RRM} V_D = V_{DRM}			200	mA
$d_{v/dt}$	Cirtical rate of rise of off-state voltage	V_{DM}=0.67 V_{DRM}			1000	V/μs
P_G	Max. average gate power	Square wavepulse width 100 μs			5	W
P_{GM}	Max. peak gate power square				30	W
I_{GT}	Gate trigger current	V_A=12V , I_A=1A			300	mA
V_{GT}	Gate trigger voltage				3.0	V
V_{GD}	DC voltage not to trigger	At 67% V_{DRM} , T_j=T_j max.			0.25	V
I_{FGM}	Max. peak positive gate current	T_j=T_j max , t_p ≤ 3s			5	mA
V_{FGM}	Max. peak positive gate voltage				30	V
V_{RGM}	Max. peak negative gate voltage				0.25	V
T_j	Max.operating temperaturerange				125	℃
T_{stg}	Storage temperature		- 40		150	℃
$R_{th(j-h)}$	Thermal resistance(junction to heatsink)	Double side cooled , clamping force 35 KN			0.011	℃/W
F_m	Mounting force		27		47	KN
W_t	Approximate weight			1100		g

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

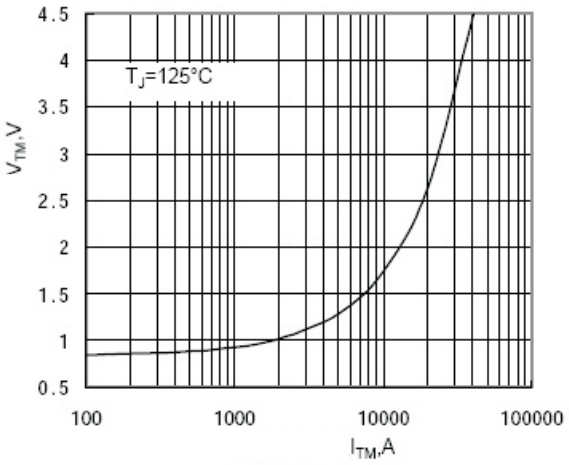


Fig.2 Max. junction To heatsink Thermal Impedance Vs.Time

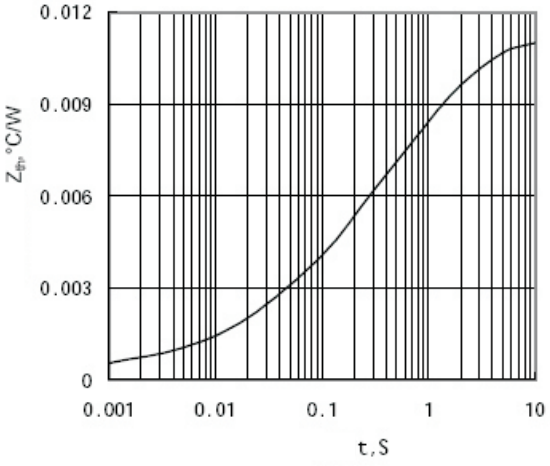


Fig.3 Max. Power Dissipation Vs.Mean On-state Current

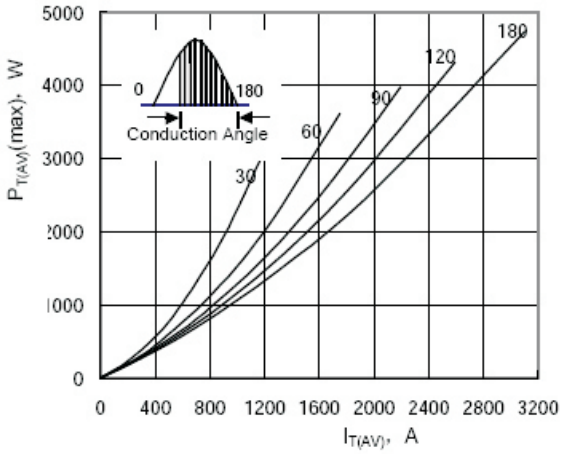


Fig.4 Max. heatsink Temperature Vs.Mean On-state Current

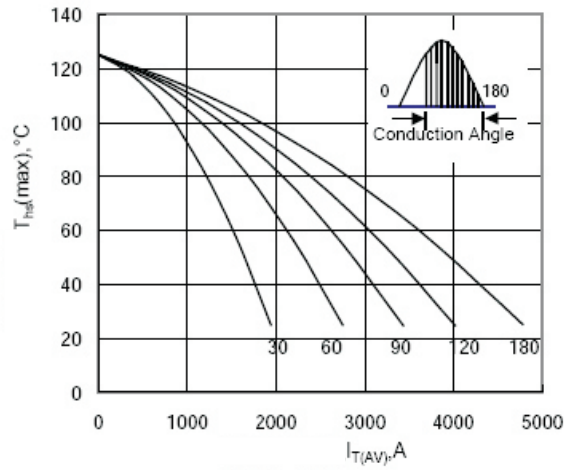


Fig.5 Max. Power Dissipation Vs.Mean On-state Current

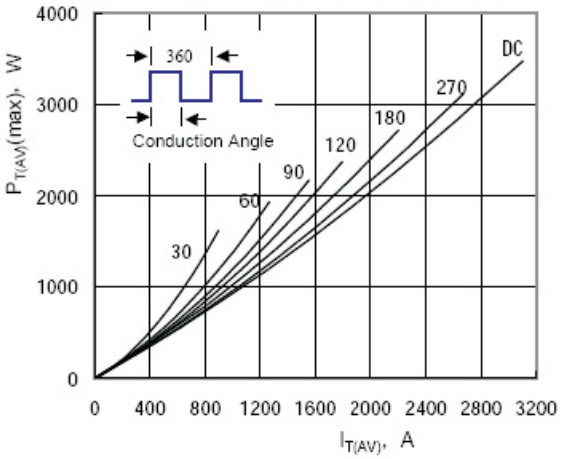


Fig.6 Max. heatsink Temperature Vs.Mean On-state Current

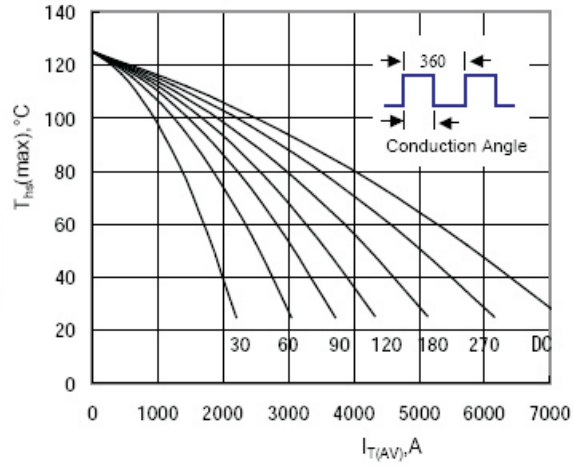


Fig.7 Surge Current Vs.Cycles

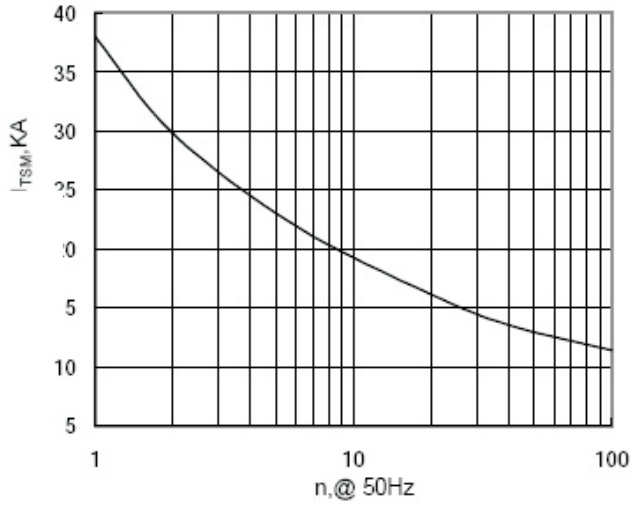


Fig.8 I^2t Vs.Time

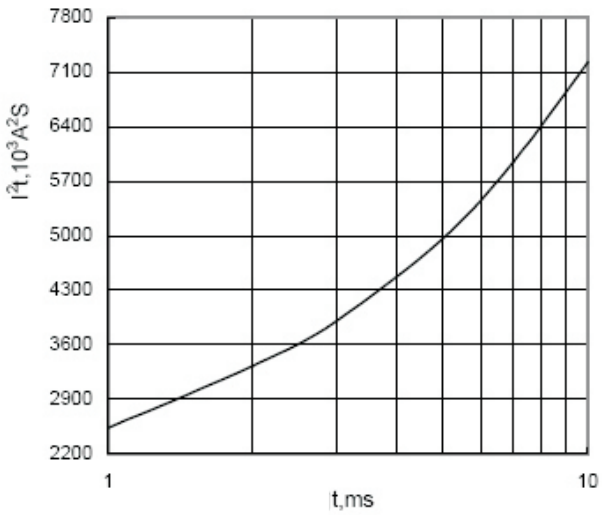


Fig.9 Gate characteristic at 25°C junction temperature

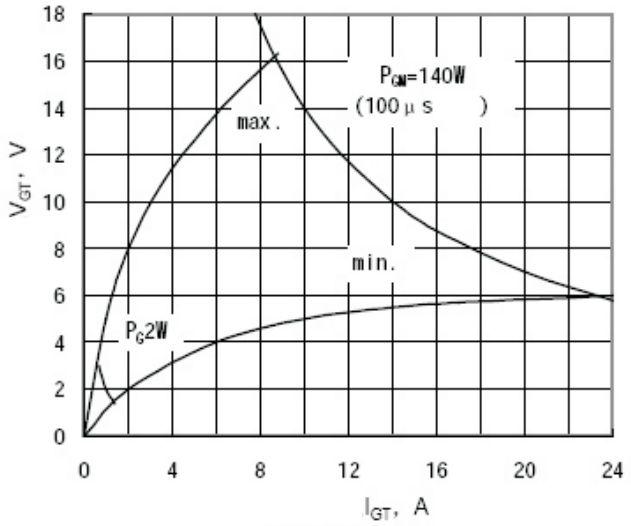
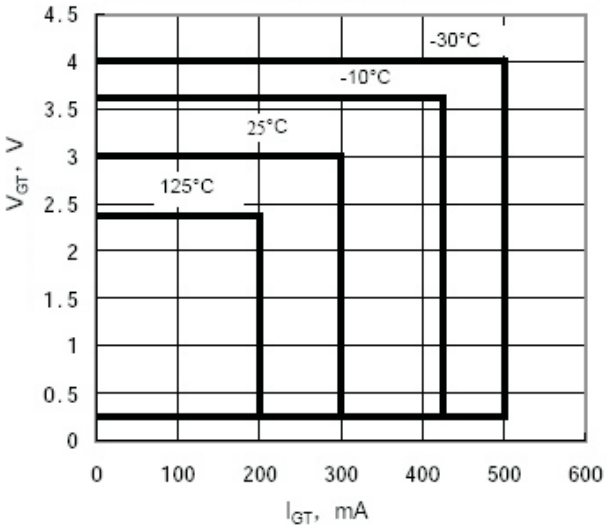



Fig.10 Gate Trigger Zone at varies temperature