

# KP3000A-E

## PHASE CONTROL THYRISTOR



### Features

Center amplifying gate  
Metal case with ceramic insulator  
Low on-state and switching losses

### Application

Large power converter  
DC and AC switches  
Active & Passive inverter

$I_{T(AV)}$	3000 A
$V_{DRM}/V_{RRM}$	1100~1800 V
$I_{TSM}$	38KA
$I^2T$	7220 KA <sup>2</sup> S

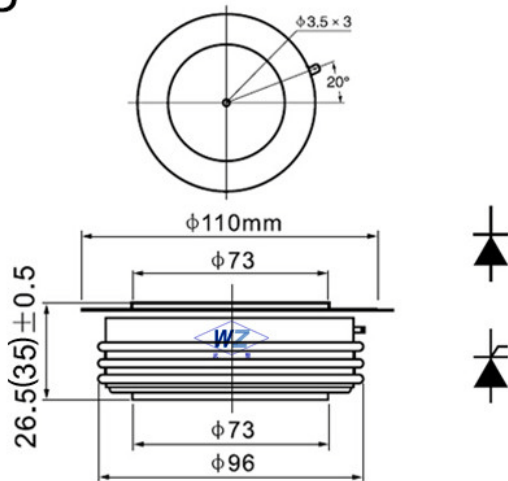
Symb.		parameter	Test Conditions	$T_{J(C)}$	Value	Unit
Current Ratings	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=75^{\circ}C$	125	3000	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=55^{\circ}C$	125	3790	A
	$I_{TSM}$	Surge on-state current	10ms half sine wave $VR=0.6V_{RRM}$	125	38	KA
	$I^2t$	$I^2T$ for fusing coordination		125	7220	KA <sup>2</sup> S
Characteristics	$V_{DRM}$ $V_{RRM}$	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM}$ & $V_{RRM}$ $t_p=10ms$ $V_{DSM}$ & $V_{RSM}=V_{DRM}$ & $V_{RRM}+100V$	125	1100-1800	V
	$I_{DRM}$ $I_{RRM}$	Repetitive peak current	$V_{DM}=V_{DRM}$ $V_{RM}=V_{RRM}$	125	Max.200	mA
	$V_{TO}$	Threshold voltage		125	Max.0.84	V
	$V_{TM}$	Threshold voltage	$I_{TM}=5000A$ , $F=40KN$	25	Max.2.20	V
	$r_T$	On-state slop resistance		125	Max.0.09	mΩ
	$I_H$	Holding current	$V_A=12V$ , $I_A=1A$	25	20-300	mA
Dynamic Parameters	dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=67\%V_{DRM}$	125	Max.300	V/μs
	di/dt	Critical rate of rise of on-state current	$V_{DM}=67\%V_{DRM}$ to 600A, Gate pulse $t_r \leq 0.5\mu s$ $I_{GM}=1.5A$	125	Max.250	A/μs
	$t_{rr}$	Reverse recovery time	$I_{TM}=500A$ , $t_p=1000\mu s$ , $V_R=50V$	125	24	μs
	$Q_{rr}$	Reverse Recovery charge	di/dt=-20A/μs	125	3000	μc
Gate Parameters	$I_{GT}$	Gate trigger current	$V_A=12V$ , $I_A=1A$	25	40-300	mA
	$V_{GT}$	Gate trigger voltage		25	0.8-3.0	V
	$V_{GD}$	Non-trigger gate voltage	$V_{DM}=67\%V_{DRM}$	125	Min.0.3	V

## Thermal & Mechanical Data

Symb.	parameter	Test Conditions	$T_{J(c)}$	Value	Unit
$R_{th(j-h)}$	Thermal resistance Junction to heat sink	At 180° sine wave, double side cooled Clamping force 40KN		Max.0.011	°C/W
$F_m$	Mounting force			35-47	KN
$T_{stg}$	Stored temperature			-40-140	°C
$W_t$	Weight			1100	g

## Dimensions:

C25



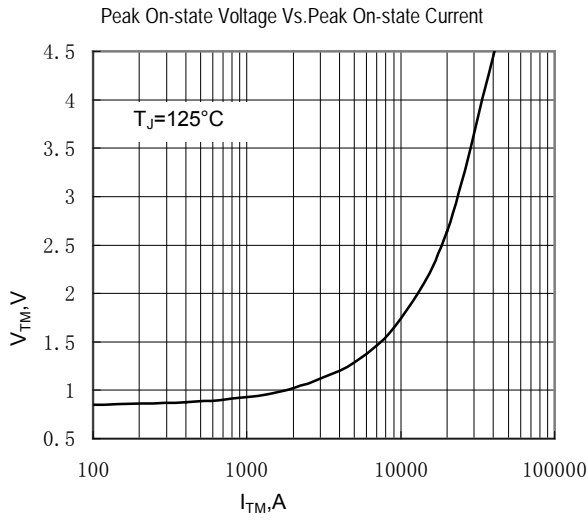


Fig.1

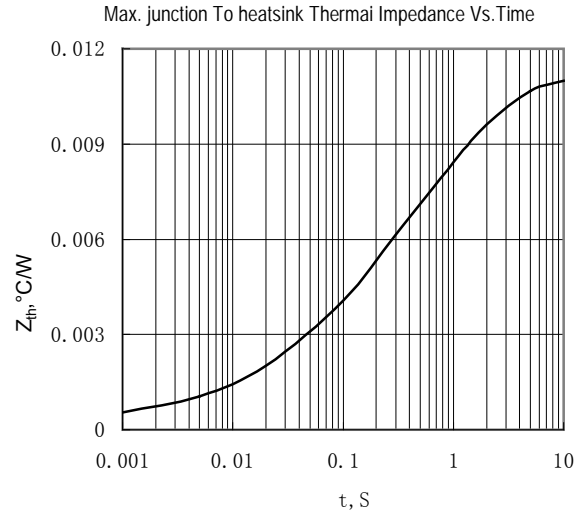


Fig.2

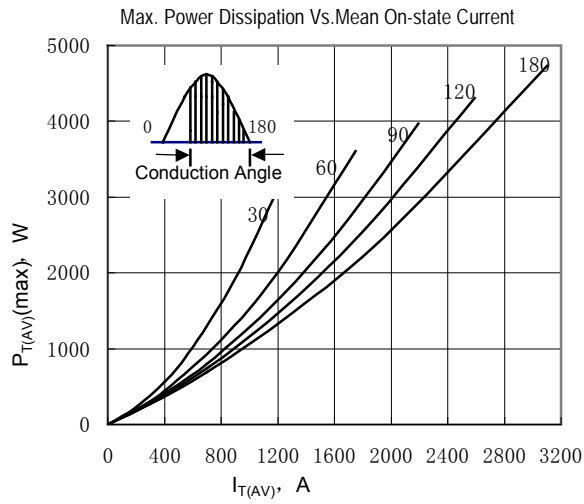


Fig.3

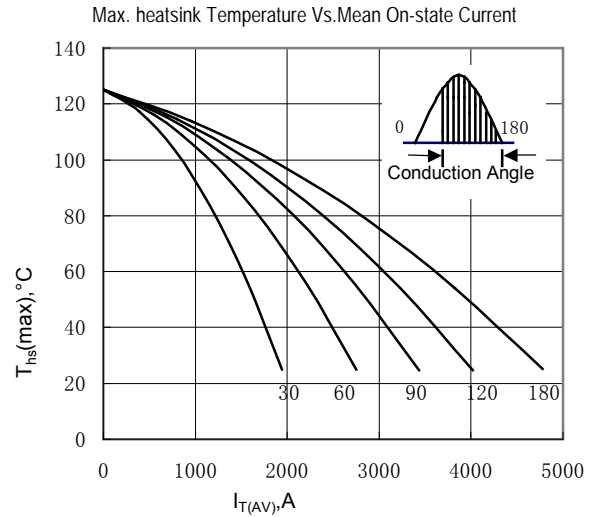


Fig.4

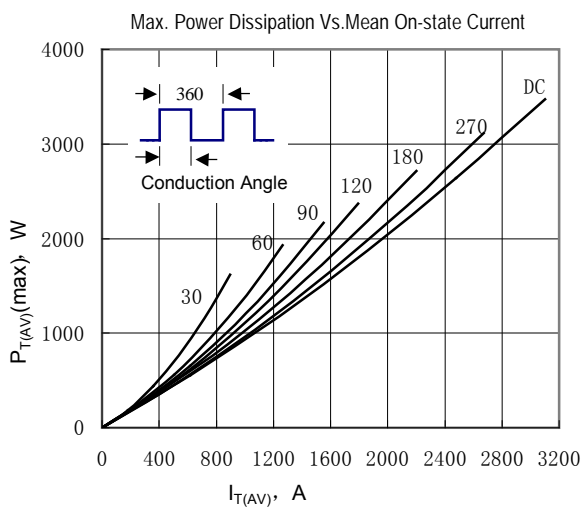


Fig.5

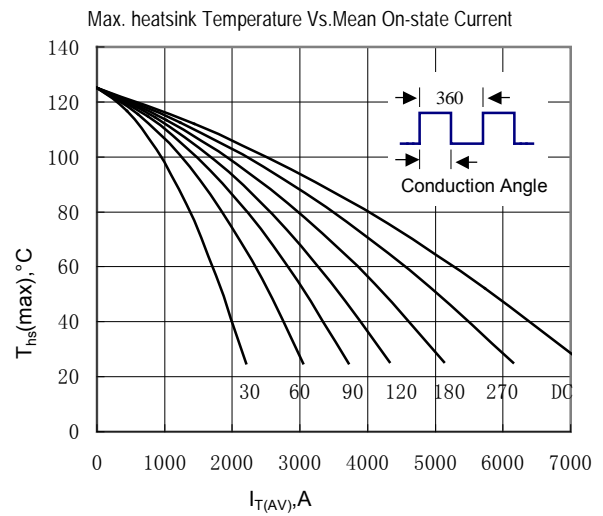


Fig.6

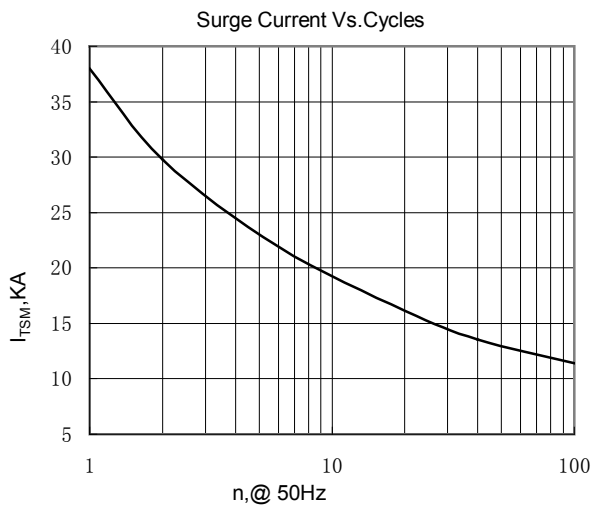


Fig.7

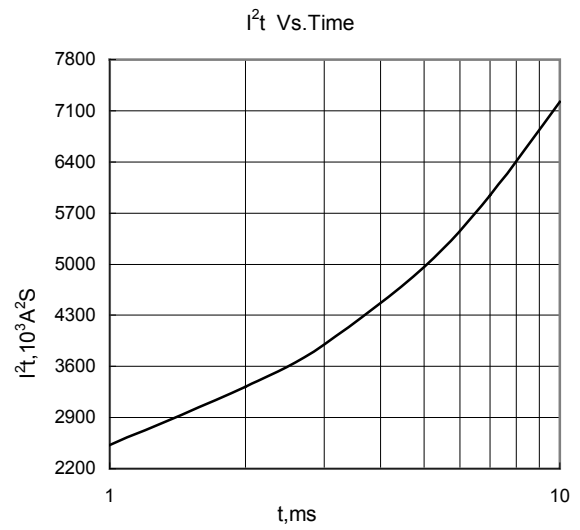


Fig.8

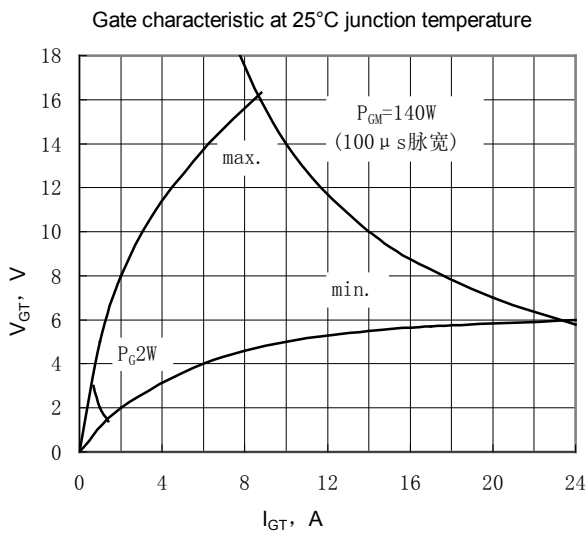


Fig.9

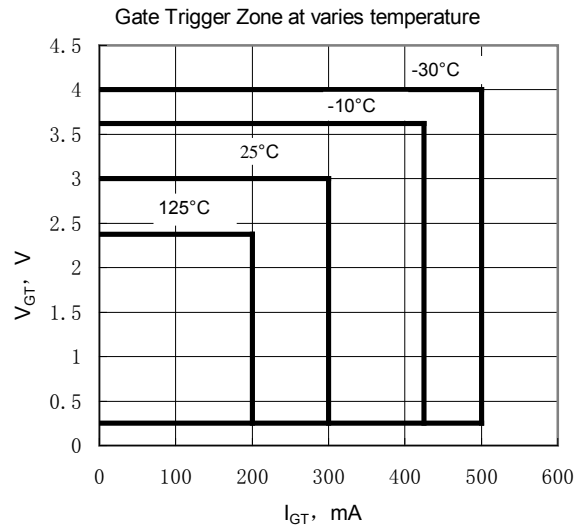


Fig.10

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