

KP4000A-H

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

$I_{T(AV)}$	4000 A
V_{DRM}/V_{RRM}	1900~3000 V
I_{TSM}	45KA
I^2T	10125 KA ² S

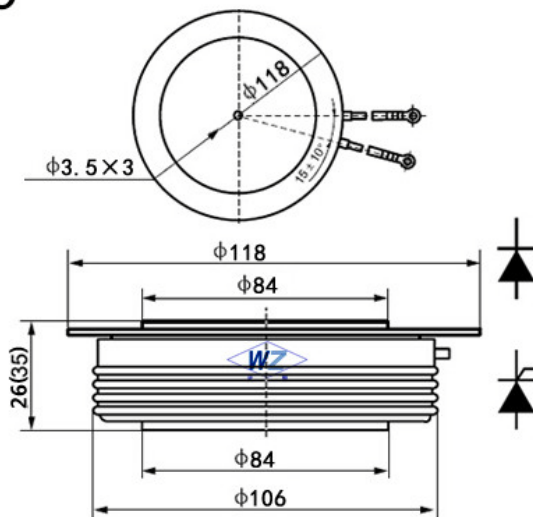
Symb.		parameter	Test Conditions	$T_{J(°C)}$	Value	Unit
Current Ratings	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=68°C$	125	4000	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=55°C$	125	4755	A
	I_{TSM}	Surge on-state current	10ms half sine wave $V_R=0.6V_{RRM}$	125	45	KA
	I^2t	I^2T for fusing coordination		125	10125	KA ² 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	1900-3000	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.0.91	V
	V_{TM}	Threshold voltage	$I_{TM}=5000A, F=106KN$	25	Max.2.30	V
	r_T	On-state slop resistance		125	Max.0.09	mΩ
	I_H	Holding current	$V_A=12V, I_A=1A$	25	20-1000	mA
Dynamic Parameters	dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=67\%V_{DRM}$	125	Max.500	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	$I_{TM}=500A, t_p=1000\mu s, V_R=50V$ $di/dt=-20A/\mu s$	125	26	μs
	Q_{rr}	Reverse Recovery charge		125	3250	μc
Gate Parameters	I_{GT}	Gate trigger current	$V_A=12V, I_A=1A$	25	40-450	mA
	V_{GT}	Gate trigger voltage		25	0.9-3.5	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 106KN		Max.0.0075	°C/W
F _m	Mounting force			98-113	KN
T _{stg}	Stored temperature			-40-140	°C
W _t	Weight			1100	g

Dimensions:

C26



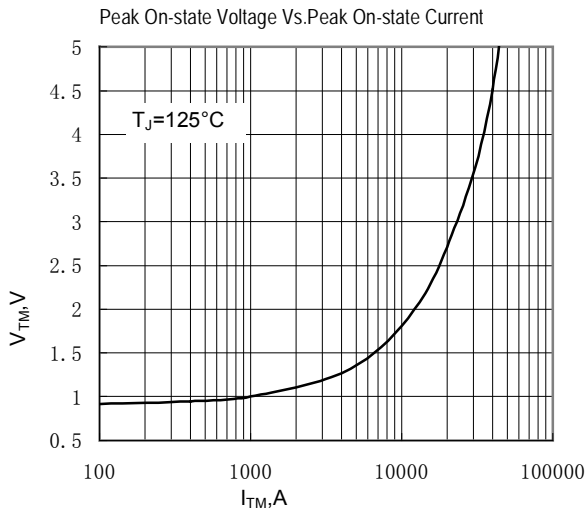


Fig.1

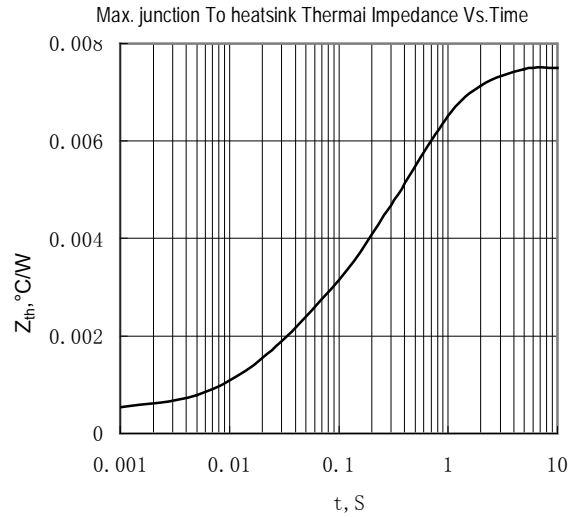


Fig.2

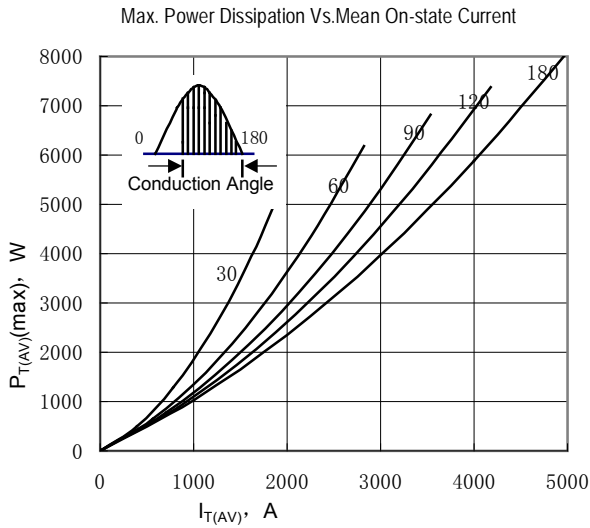


Fig.3

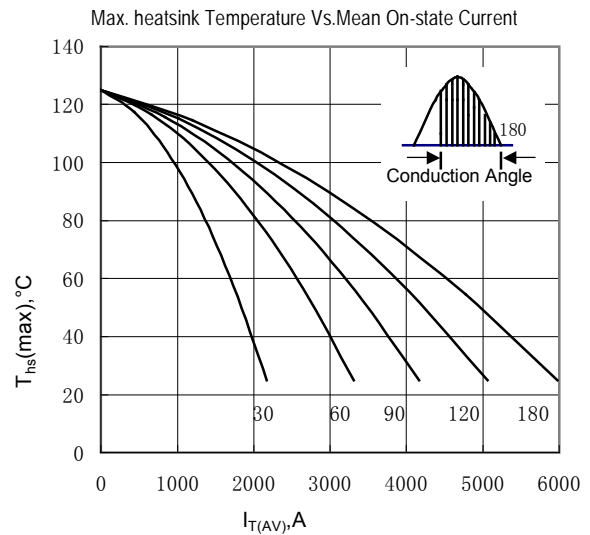


Fig.4

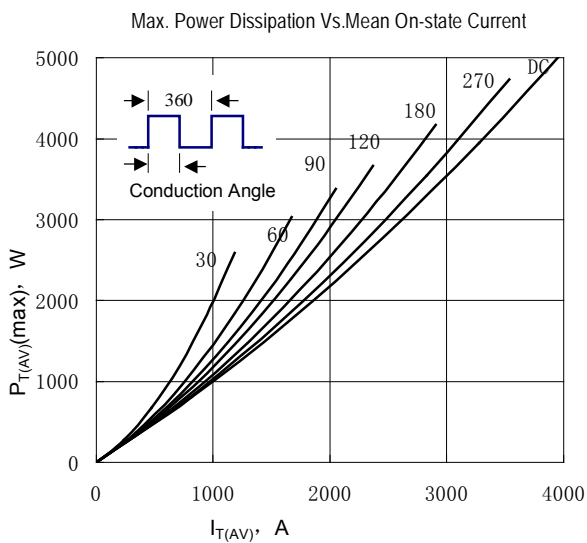


Fig.5

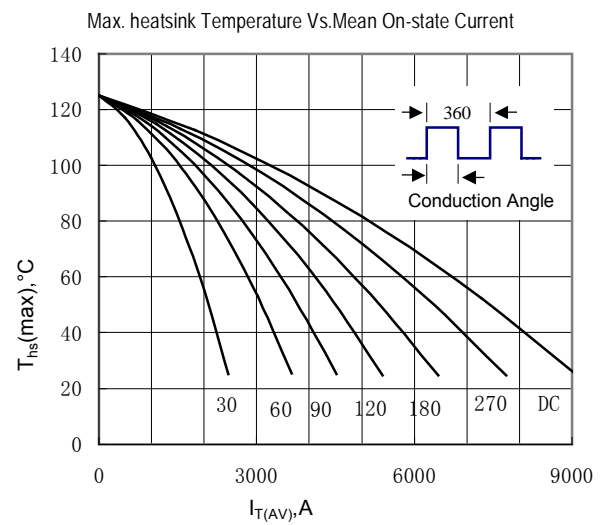


Fig.6

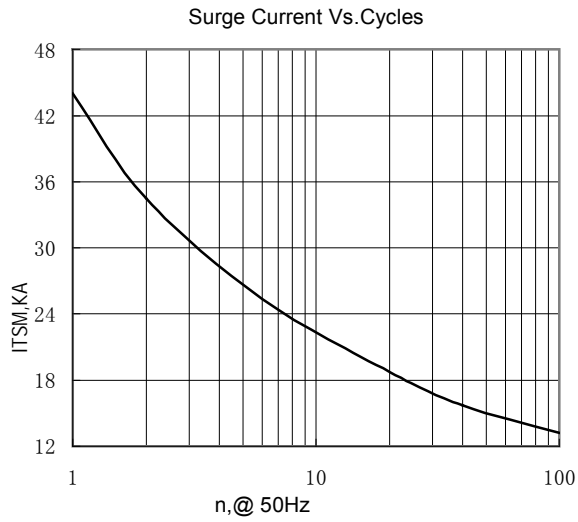


Fig.7

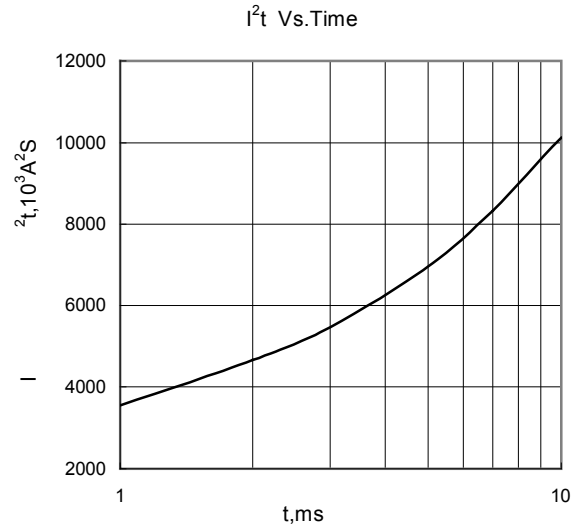


Fig.8

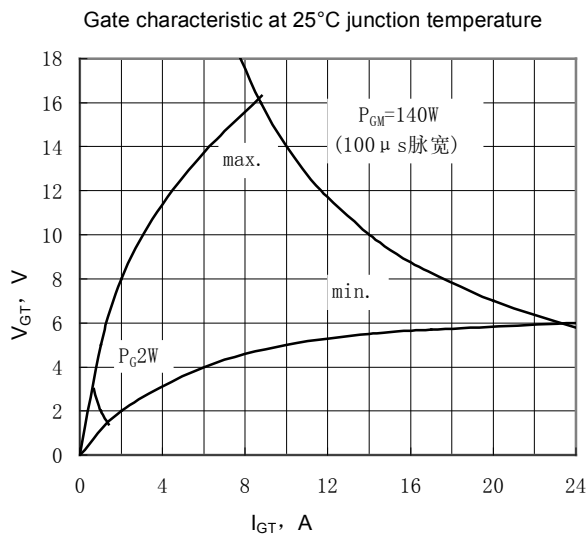


Fig.9

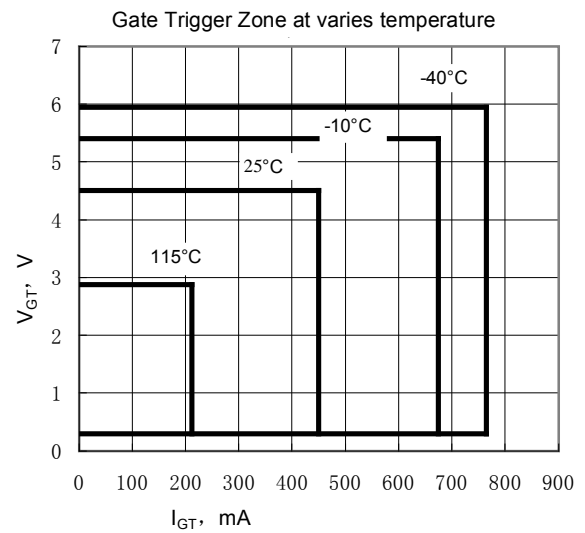


Fig.10

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