

# KP300A-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

$I_{T(AV)}$	300 A
$V_{DRM}/V_{RRM}$	1100~1800V
$I_{TSM}$	3.8KA
$I^2T$	32 KA <sup>2</sup> S

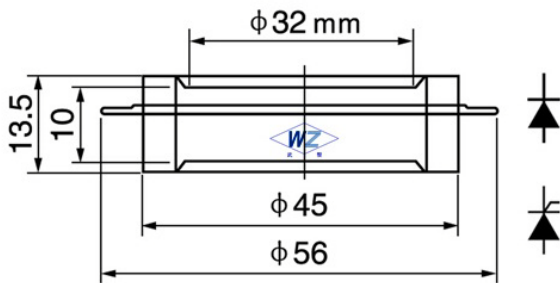
Symb.		parameter	Test Conditions	$T_{J(°C)}$	Value	Unit
Current Ratings	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz, Double side cooled, $T_{hs}=82°C$	125	300	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz, Double side cooled, $T_{hs}=55°C$	125	416	A
	$I_{TSM}$	Surge on-state current	10ms half sine wave $VR=0.6V_{RRM}$	125	2.5	KA
	$I^2t$	I <sup>2</sup> T for fusing coordination		125	32	KA <sup>2</sup> S
Characteristics	$V_{DRM}$ $V_{RRM}$	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM}$ & $V_{RRM}$ $tp=10ms$ $V_{DSM}$ & $V_{RSM}=V_{DRM}$ & $V_{RRM}+100V$	125	1100-1800	V
	$I_{DRM}$ $I_{RRM}$	Repetitive peak current	$V_{DM}=V_{DRM}$ $V_{RM}=V_{RRM}$	125	Max.30	mA
	$V_{TO}$	Threshold voltage		125	Max.0.877	V
	$V_{TM}$	Threshold voltage	$I_{TM}=900A$ , $F=5.0KN$	25	Max.2.20	V
	$r_T$	On-state slop resistance		125	Max.1.02	mΩ
	$I_H$	Holding current	$V_A=12V$ , $I_A=1A$	25	20-150	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 $tr \leq 0.5\mu s$ $I_{GM}=1.5A$	125	Min.100	A/μs
	$t_{rr}$	Reverse recovery time	$T_M=600A$ , $tp=1000\mu s$ , $VR=50V$	125	Max.12	μs
	$Q_{rr}$	Recovery charge	$dv/dt=30V/\mu s$ , $di/dt=-20A/\mu s$	125	Max.600	μc
Gate Parameters	$I_{GT}$	Gate trigger current	$V_A=12V$ , $I_A=1A$	25	35-250	mA
	$V_{GT}$	Gate trigger voltage		25	0.8-2.5	V
	$V_{GD}$	Non-trigger gate voltage	$V_{DM}=67\%V_{DRM}$	125	Min.0.3	V

## Thermal & Mechanical Data

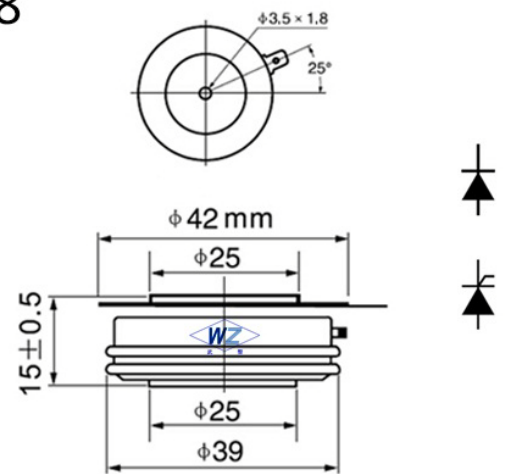
Symb.	parameter	Test Conditions	T <sub>J</sub> (°C)	Value	Unit
R <sub>th(j-h)</sub>	Thermal resistance Junction to heat sink	At 180° sine, double side cooled Clamping force 5.0KN		Max.0.055	°C/W
F <sub>m</sub>	Mounting force			3.3-5.5	KN
T <sub>stg</sub>	Stored temperature			-40--+140	°C
W <sub>t</sub>	Weight			55	g

### Dimensions:

C3



C8



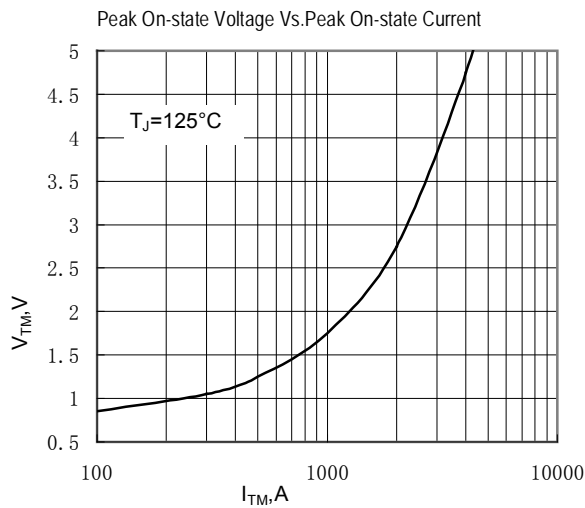


Fig.1

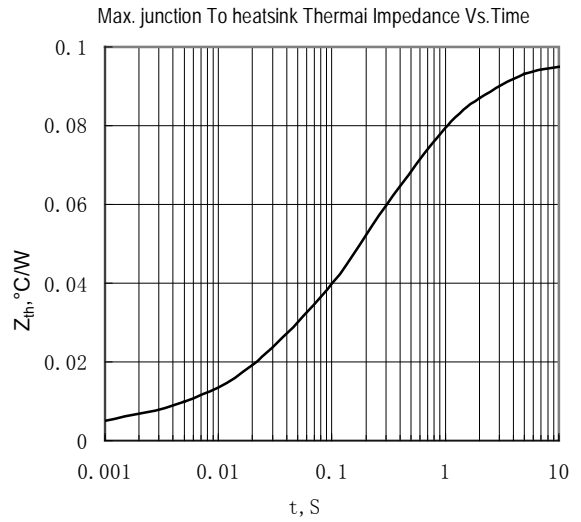


Fig.2

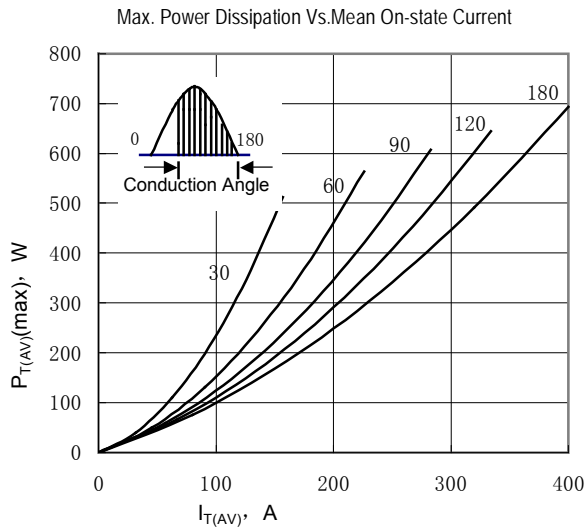


Fig.3

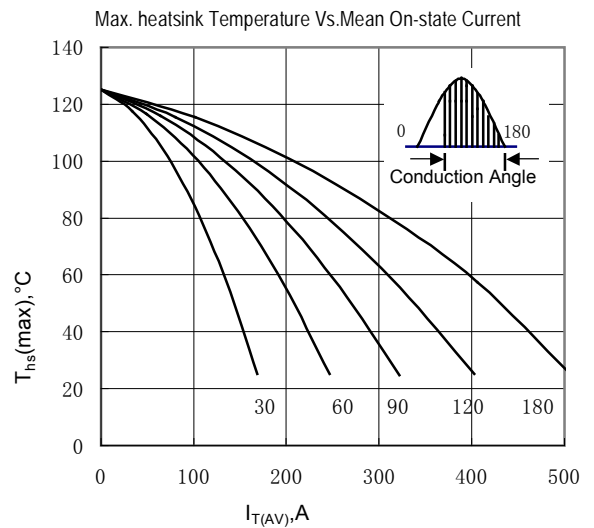


Fig.4

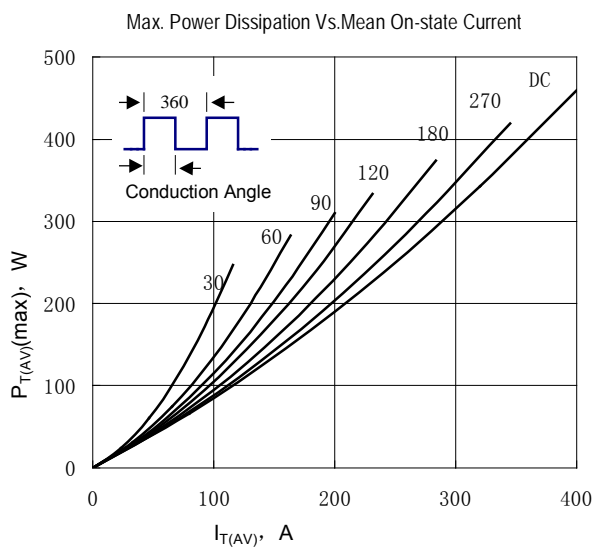


Fig.5

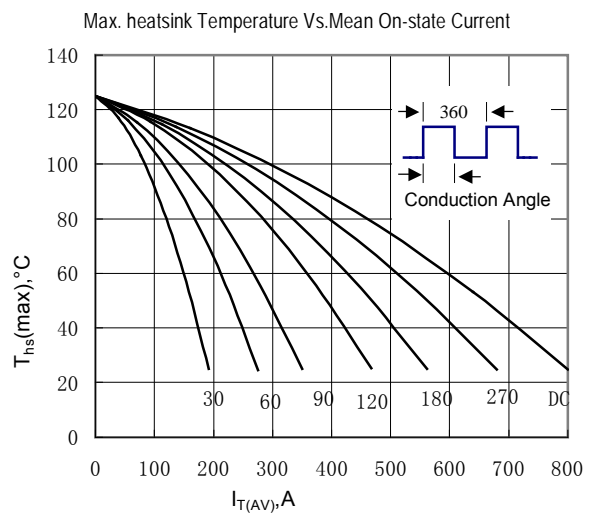


Fig.6

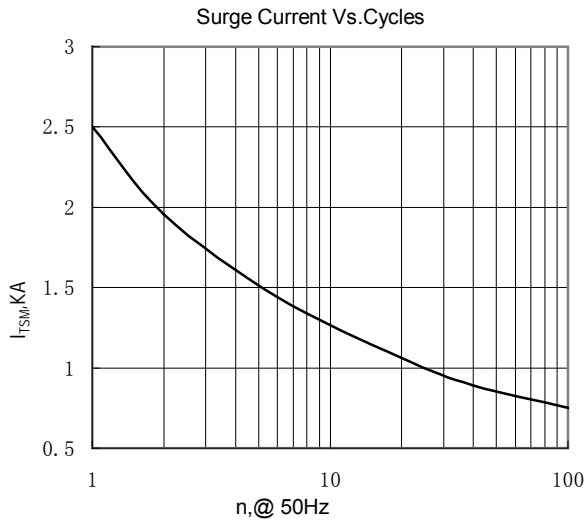


Fig.7

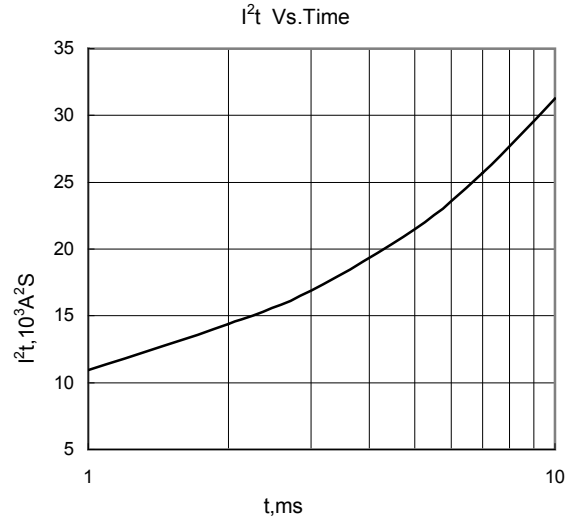


Fig.8

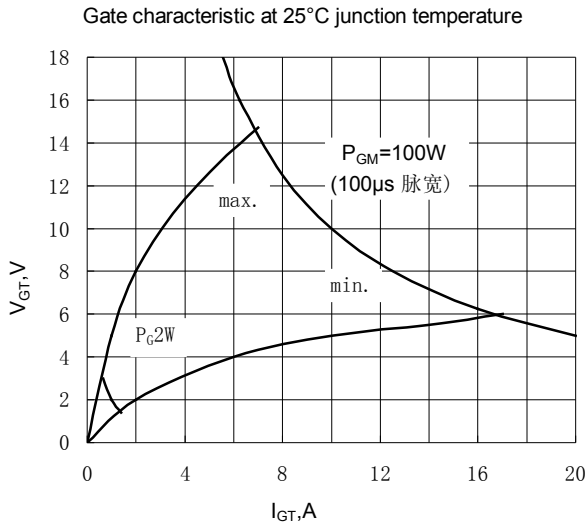


Fig.9

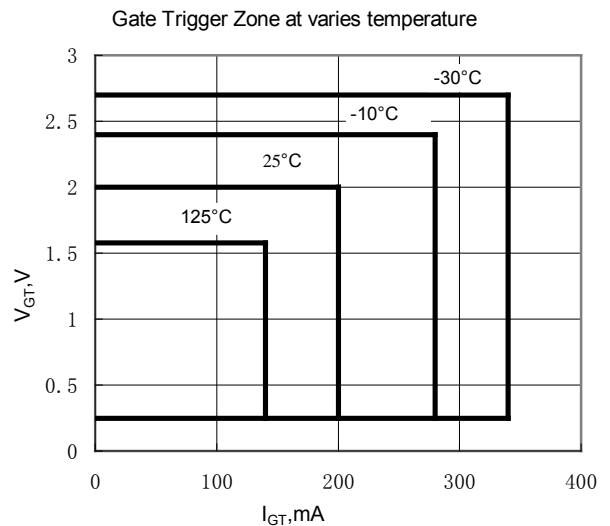


Fig.10

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