

# KP300A-C

## 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
$V_{DRM}/V_{RRM}$	400~1000 V
$I_{TSM}$	2.5KA
$I^2T$	32 KA <sup>2</sup> S

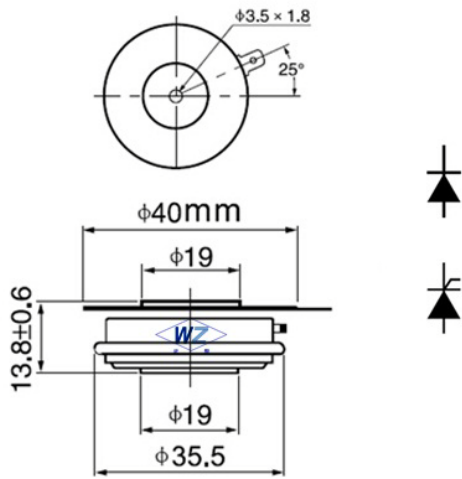
Symb.		parameter	Test Conditions	$T_{J(C)}$	Value	Unit
Current Ratings	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz, Double side cooled, $T_{hs}=82^{\circ}C$	125	300	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz, Double side cooled, $T_{hs}=55^{\circ}C$	125	416	A
	$I_{TSM}$	Surge on-state current	10ms half sine wave VR=0.6VRRM	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	400-1000	V
	$I_{DRM}$ $I_{RRM}$	Repetitive peak current	$V_{DM} = V_{DRM}$ $V_{RM} = V_{RRM}$	125	Max.16	mA
	$V_{TO}$	Threshold voltage		125	Max.0.75	V
	$V_{TM}$	Threshold voltage	$I_{TM}=900A, F=5.0KN$	25	Max.2.20	V
	$r_T$	On-state slop resistance		125	Max.1.00	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 ≤0.5μs IGM=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/μs ,di/dt=-20A/μs	125	Max.600	μc
Gate Parameters	$I_{GT}$	Gate trigger current	$V_A=12V, I_A=1A$	25	30-.200	mA
	$V_{GT}$	Gate trigger voltage		25	0.8-2.0	V
	$V_{GD}$	Non-trigger gate voltage	$V_{DM}=67\% V_{DRM}$	125	Min.0.3	V

### Thermal & Mechanical Date

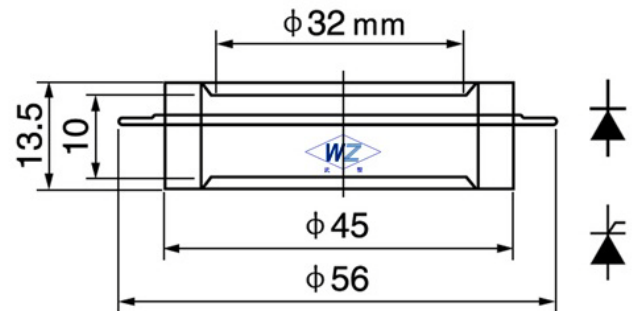
Symb.	parameter	Test Conditions	T <sub>J</sub> (°C)	Value	Unit
R <sub>th(j-h)</sub>	Thermal resistance Junction to heat sink	At 180° sine, double side cooled Clamping force 5.0KN		Max.0.095	°C/W
F <sub>m</sub>	Mounting force			3.3-5.5	KN
T <sub>stg</sub>	Stored temperature			-40--+140	°C
W <sub>t</sub>	Weight			55	g

**Dimensions:**

C7



C3



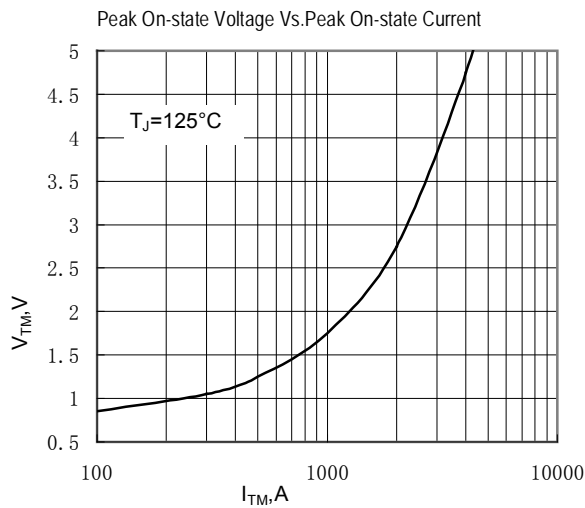


Fig.1

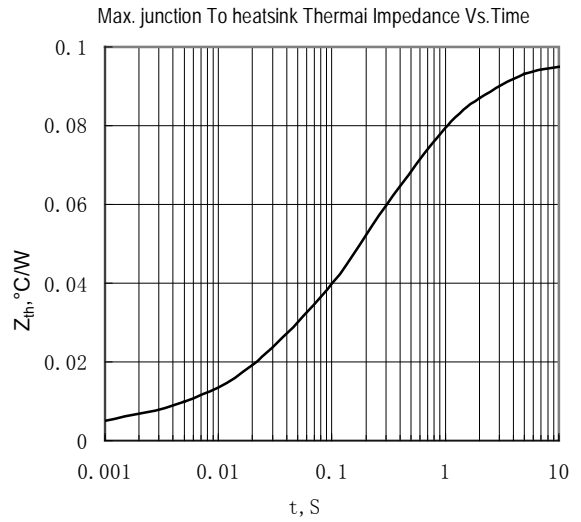


Fig.2

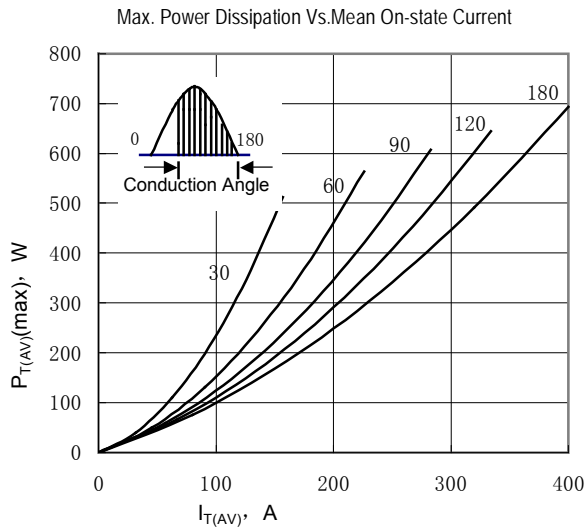


Fig.3

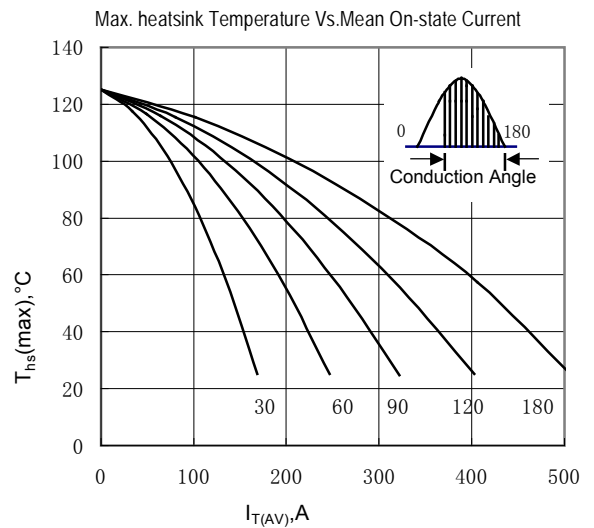


Fig.4

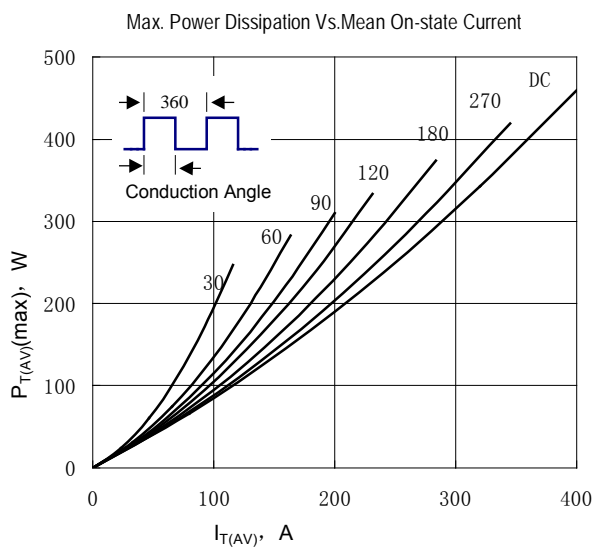


Fig.5

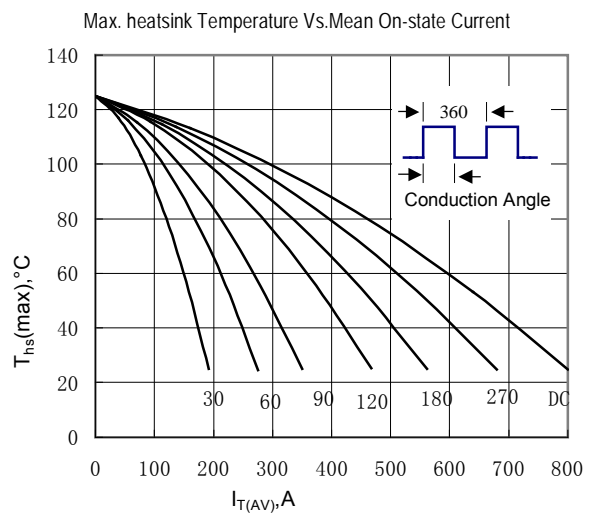


Fig.6

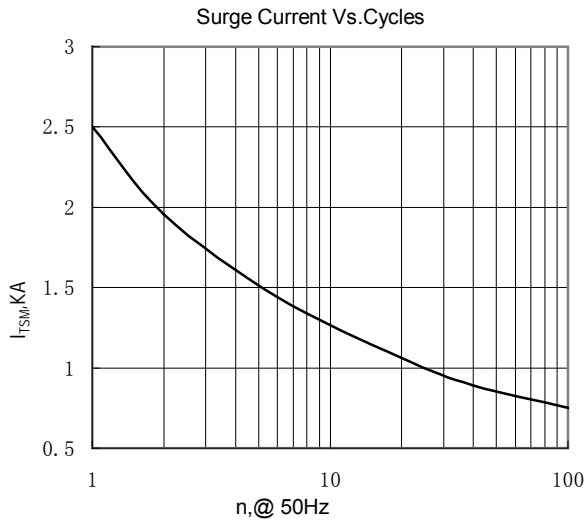


Fig.7

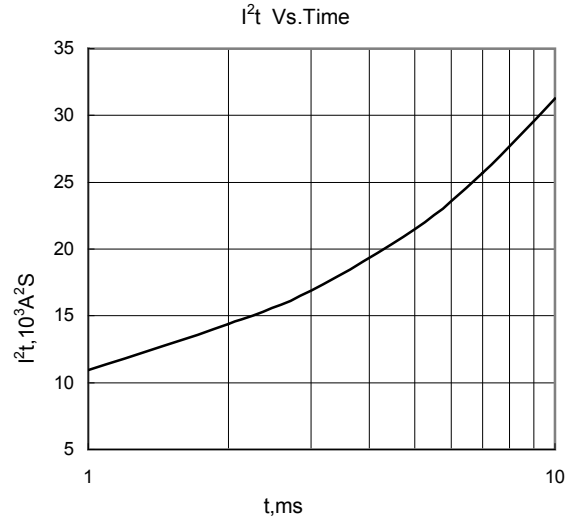


Fig.8

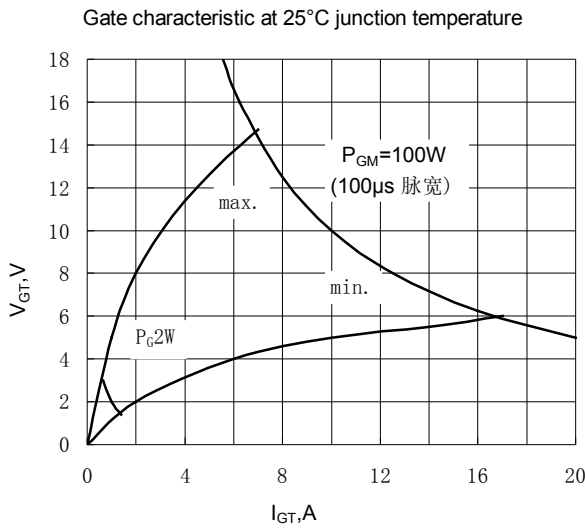


Fig.9

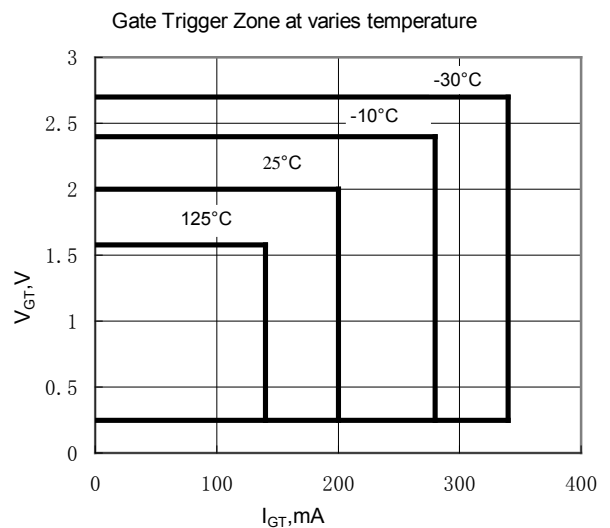


Fig.10

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