

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 ² S

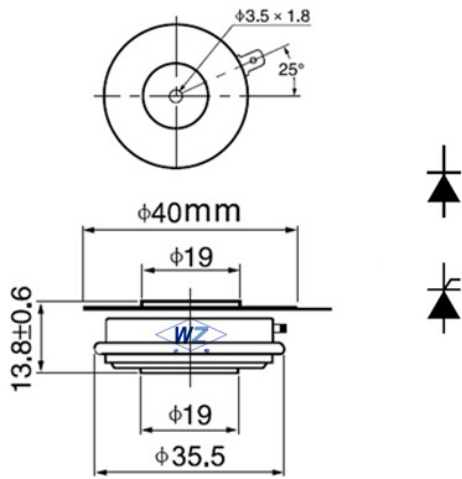
Symb.		parameter	Test Conditions	$T_J(^{\circ}C)$	Value	Unit
Current Ratings	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz, Double side cooled, $T_{hs}=82^{\circ}C$	125	300	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz, Double side cooled, $T_{hs}=55^{\circ}C$	125	416	A
	I_{TSM}	Surge on-state current	10ms half sine wave $VR=0.6V_{RRM}$	125	2.5	KA
	I^2t	I ² T for fusing coordination		125	32	KA ² 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 $tr \leq 0.5\mu s$ $I_{GM}=1.5A$	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/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 Data

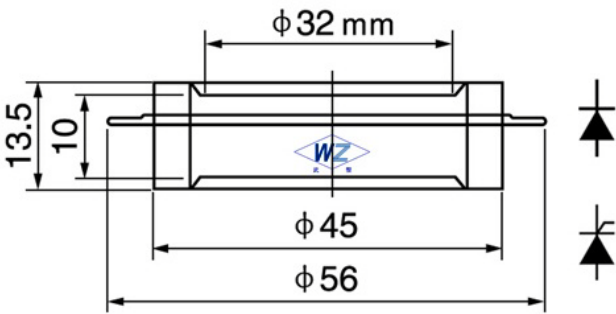
Symb.	parameter	Test Conditions	T _J (°C)	Value	Unit
R _{th(j-h)}	Thermal resistance Junction to heat sink	At 180 ⁰ sine, double side cooled Clamping force 5.0KN		Max.0.095	°C/W
F _m	Mounting force			3.3-5.5	KN
T _{stg}	Stored temperature			-40--+140	°C
W _t	Weight			55	g

Dimensions:

C7



C3



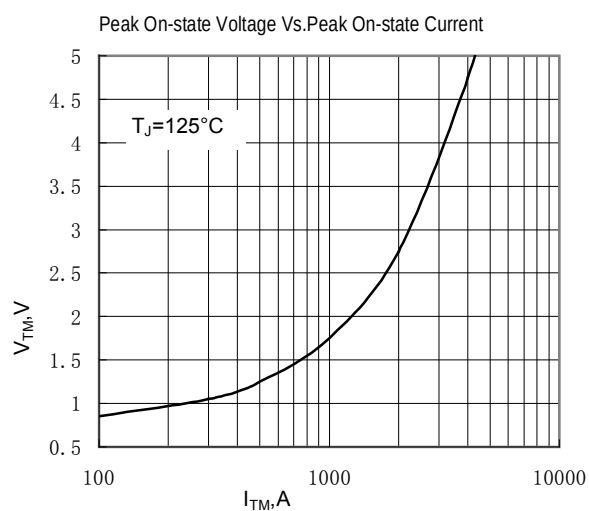


Fig.1

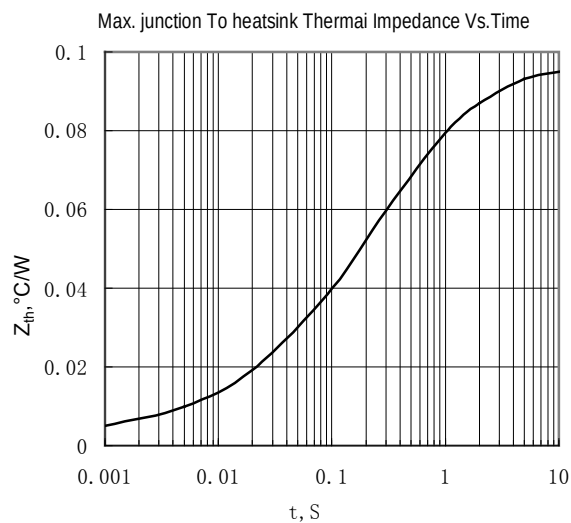


Fig.2

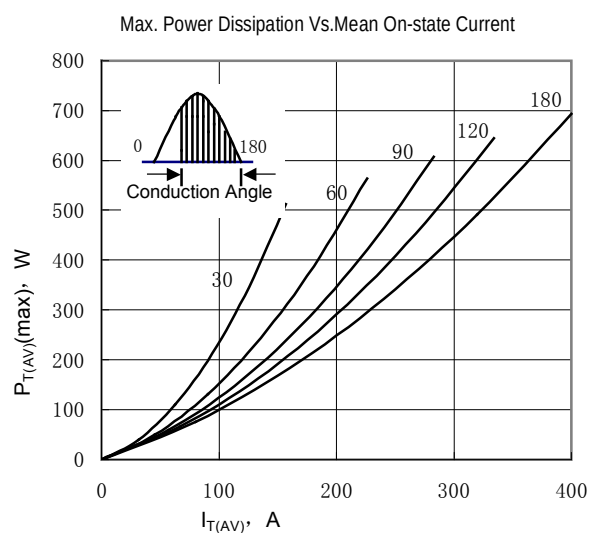


Fig.3

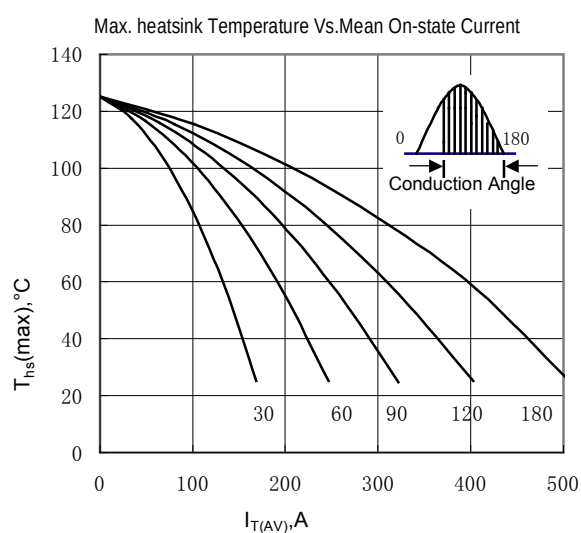


Fig.4

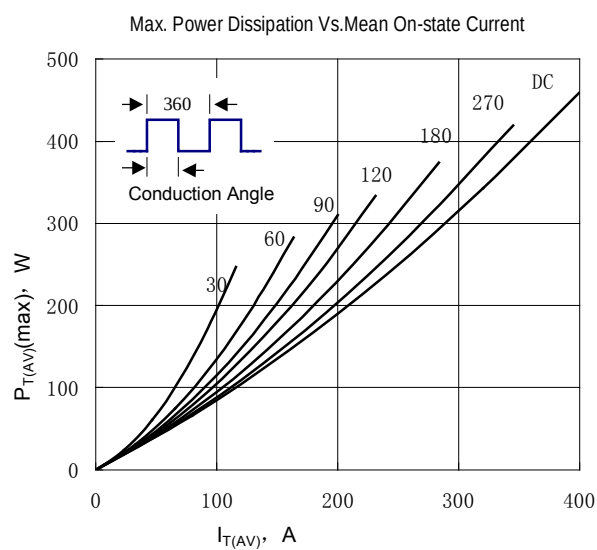


Fig.5

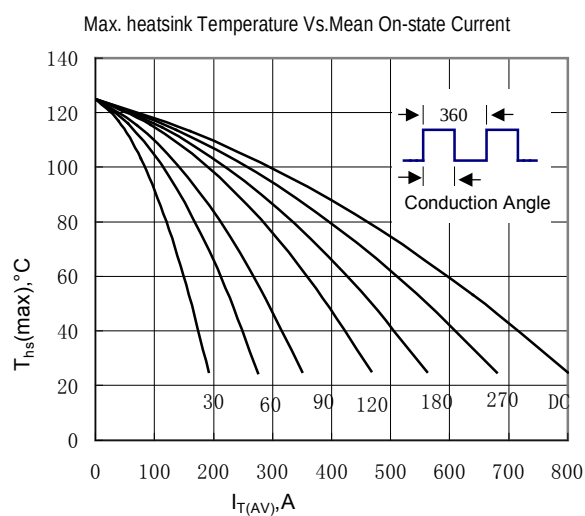


Fig.6

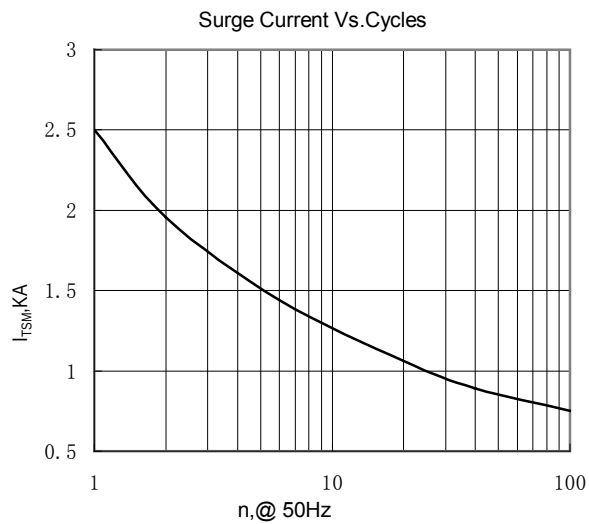


Fig.7

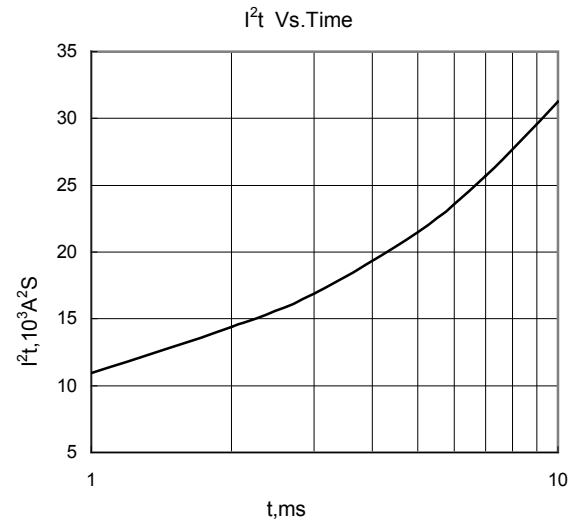


Fig.8

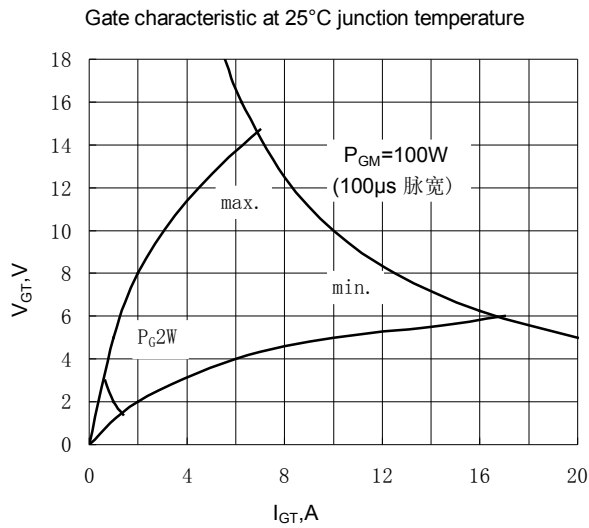


Fig.9

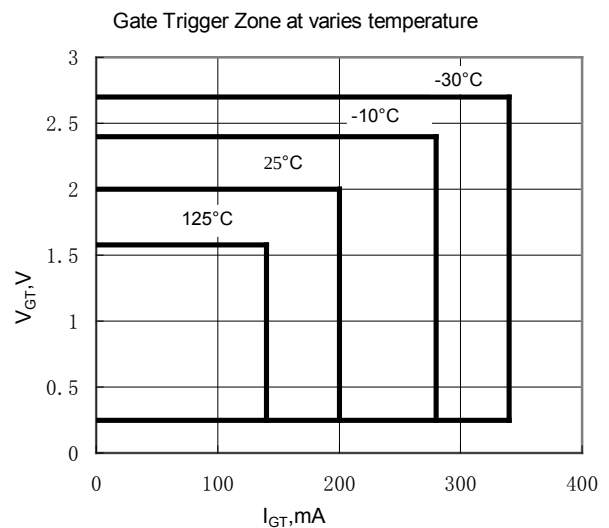


Fig.10

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