

KP1100A-M



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

$I_{T(AV)}$	1100 A
V_{DRM}/V_{RRM}	4300~5500 V
I_{TSM}	17KA
I^2T	1445 KA ² S

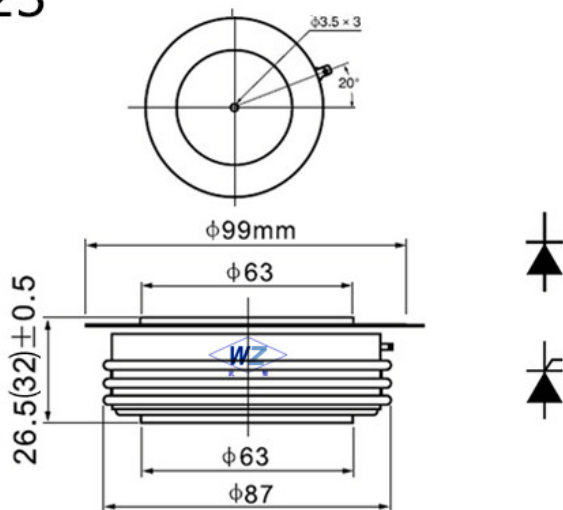
Symb.		parameter	Test Conditions	$T_{J(C)}$	Value	Unit
Current Ratings	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=71^{\circ}C$	125	1100	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=55^{\circ}C$	125	1303	A
	I_{TSM}	Surge on-state current	10ms half sine wave $V_R=0.6V_{RRM}$	125	17	KA
	I^2t	I^2T for fusing coordination		125	1445	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	4300-5500	V
	I_{DRM} I_{RRM}	Repetitive peak current	$V_{DM}=V_{DRM}$ $V_{RM}=V_{RRM}$	125	Max.120	mA
	V_{TO}	Threshold voltage		125	Max.1.30	V
	V_{TM}	Threshold voltage	$I_{TM}=3000A, F=32KN$	25	Max.3.00	V
	r_T	On-state slop resistance		125	Max.0.58	mΩ
	I_H	Holding current	$V_A=12V, I_A=1A$	25	20-250	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.200	A/μs
	t_{rr}	Reverse recovery time	$I_{TM}=500A, t_p=1000\mu s, V_R=50V$ $di/dt=-20A/\mu s$	125	20	μs
	Q_{rr}	Reverse Recovery charge		125	1700	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 32KN		Max.0.017	°C/W
F _m	Mounting force			27-34	KN
T _{stg}	Stored temperature			-40-140	°C
W _t	Weight			850	g

Dimensions:

C23



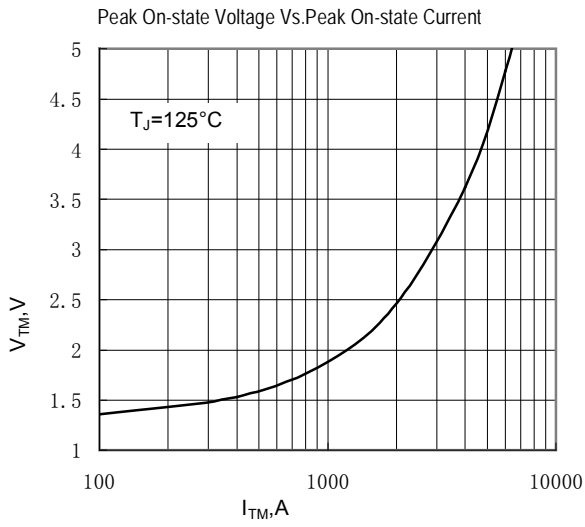


Fig.1

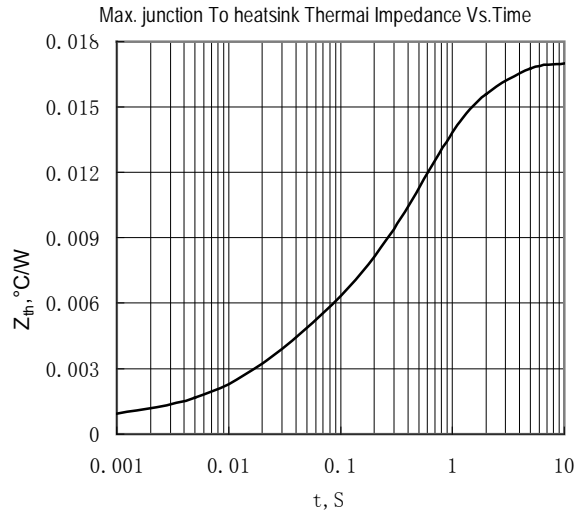


Fig.2

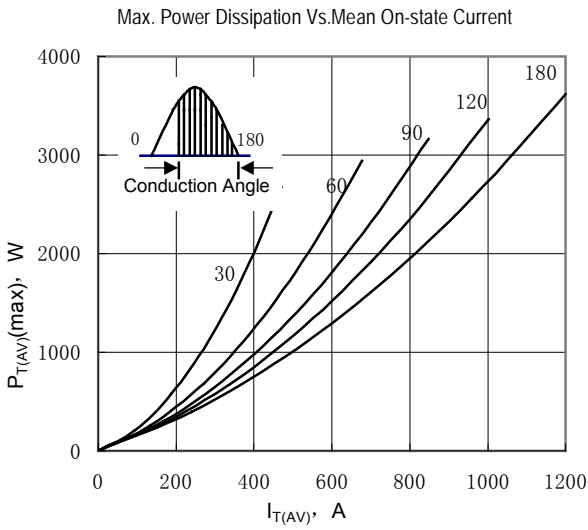


Fig.3

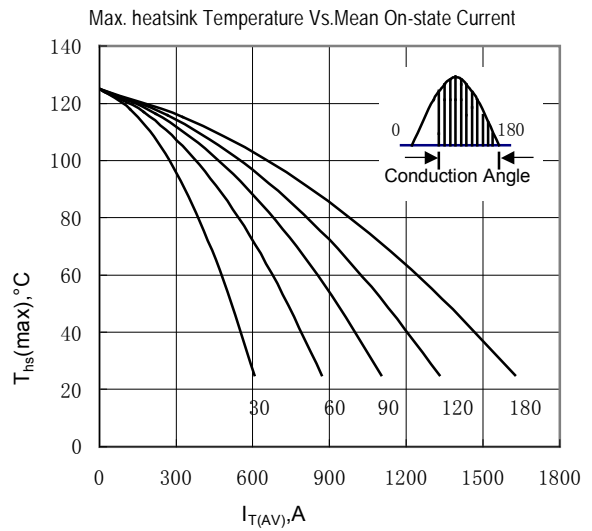


Fig.4

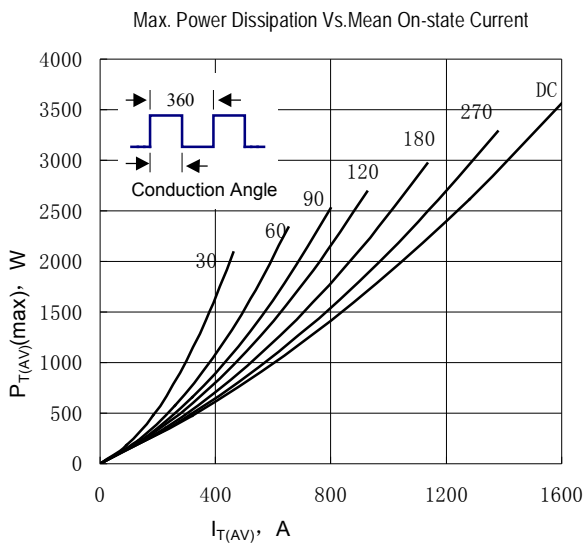


Fig.5

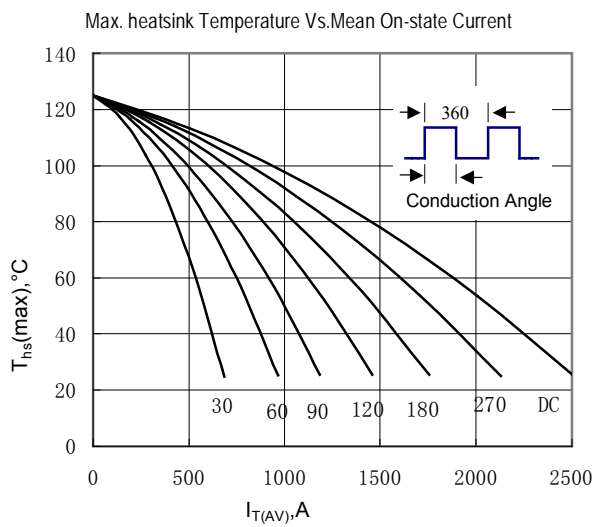


Fig.6

Surge Current Vs.Cycles

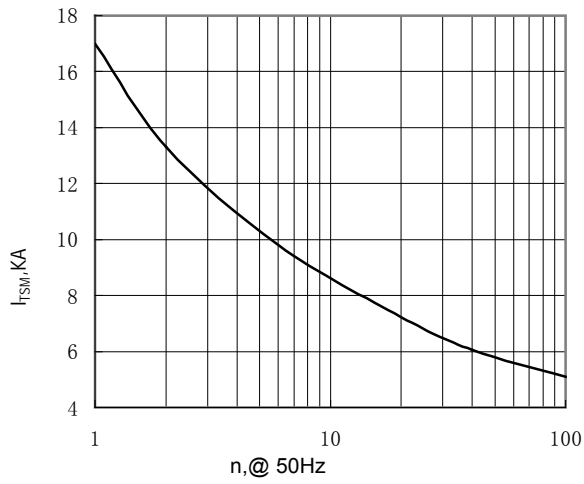


Fig.7

I^2t Vs.Time

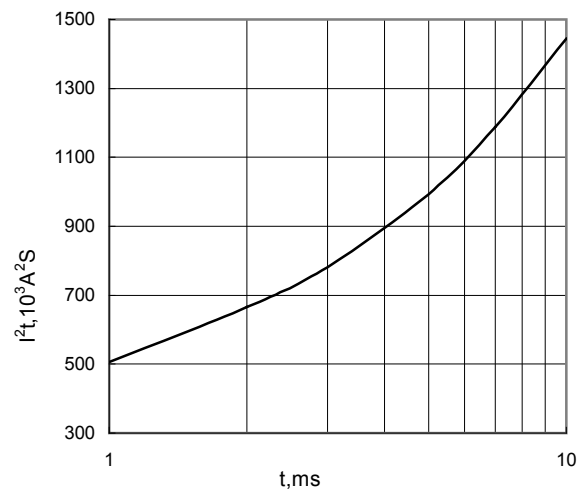


Fig.8

Gate characteristic at 25°C junction temperature

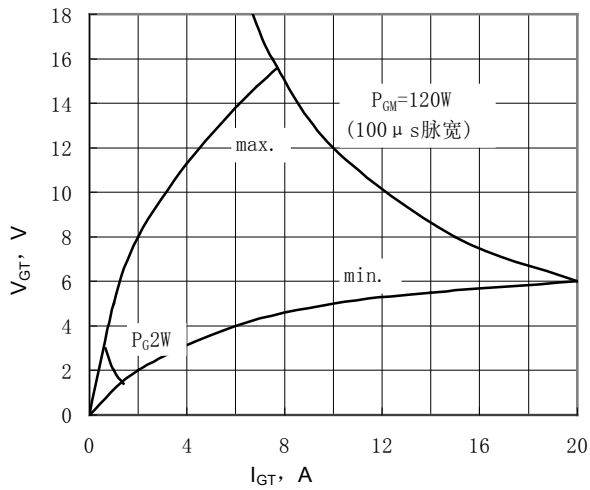


Fig.9

Gate Trigger Zone at varies temperature

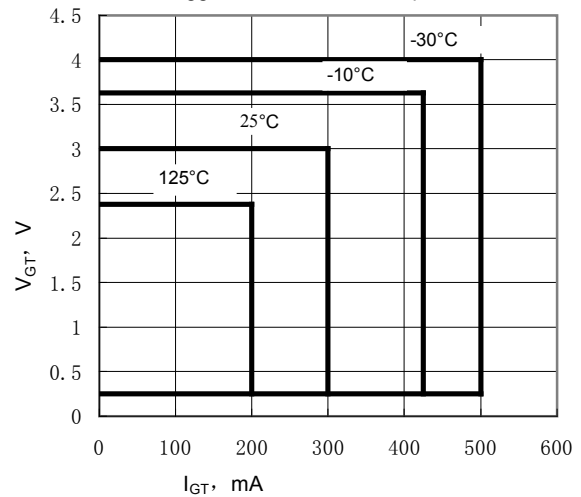


Fig.10

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