

KP700A-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

$I_{T(AV)}$	700 A
V_{DRM}/V_{RRM}	4300~5500 V
I_{TSM}	10.0KA
I^2t	550 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 $T_{hs}=75^{\circ}C$	125	700	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=55^{\circ}C$	125	949	A
	I_{TSM}	Surge on-state current	10ms half sine wave $V_R=0.6V_{RRM}$	125	10.0	KA
	I^2t	I^2t for fusing coordination		125	500	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	$I_{TM}=1500A, F=24KN$	25	Max.3.2	V
	r_T	On-state slop resistance		125	Max.0.76	m Ω

	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	$V/\mu s$
	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.100	$A/\mu s$
	t_{rr}	Reverse recovery time	$I_{TM}=500A, t_p=1000\mu s, V_R=50V$	125	17.8	μs
	Q_{rr}	Reverse Recovery charge	$di/dt=-20A/\mu s$	125	1588	μc
Gate Parameters	I_{GT}	Gate trigger current		25	40-300	mA
	V_{GT}	Gate trigger voltage	$V_A=12V, I_A=1A$	25	Min.0.8 Max.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 24KN		Max.0.024	°C/W
F_m	Mounting force			19-26	KN
T_{stg}	Stored temperature			-40-140	°C
W_t	Weight			470	g

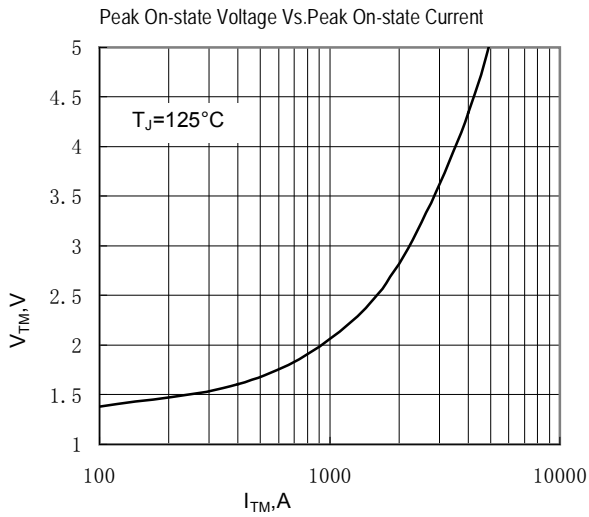


Fig.1

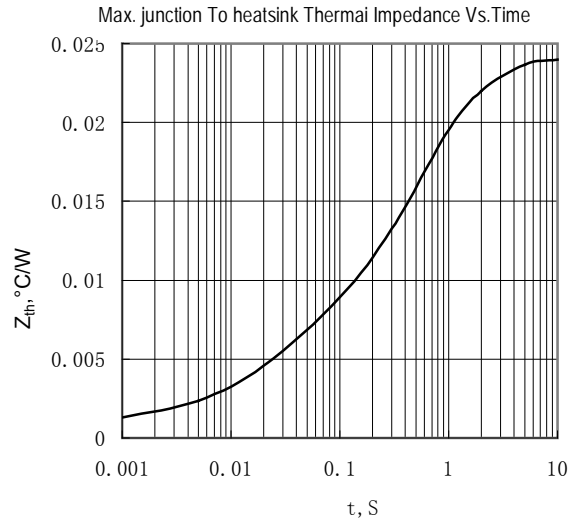


Fig.2

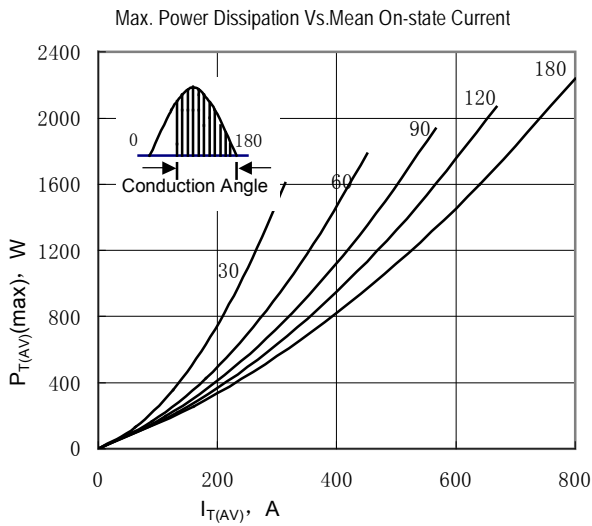


Fig.3

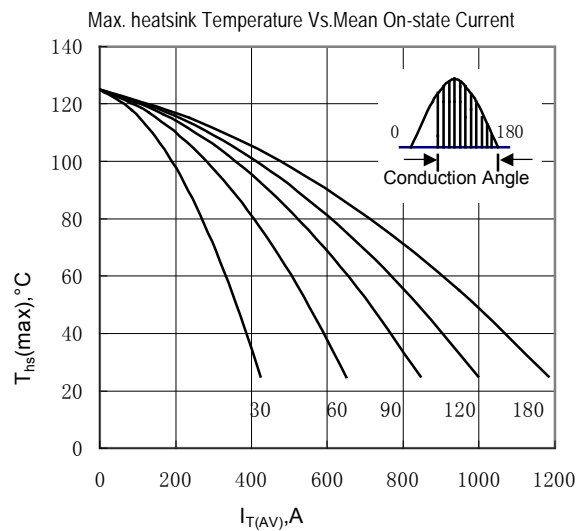


Fig.4

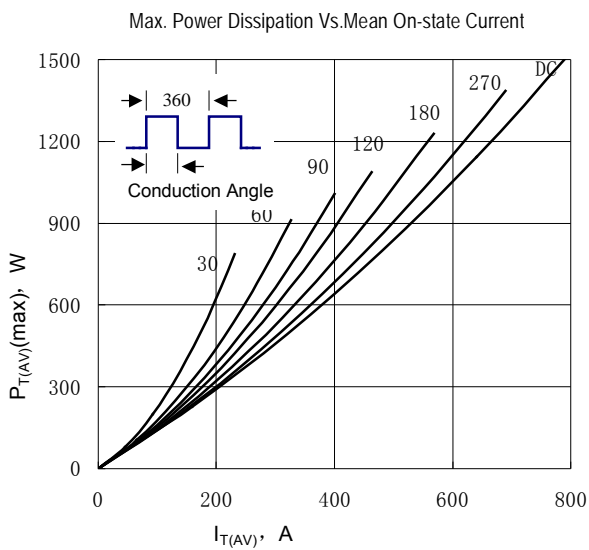


Fig.5

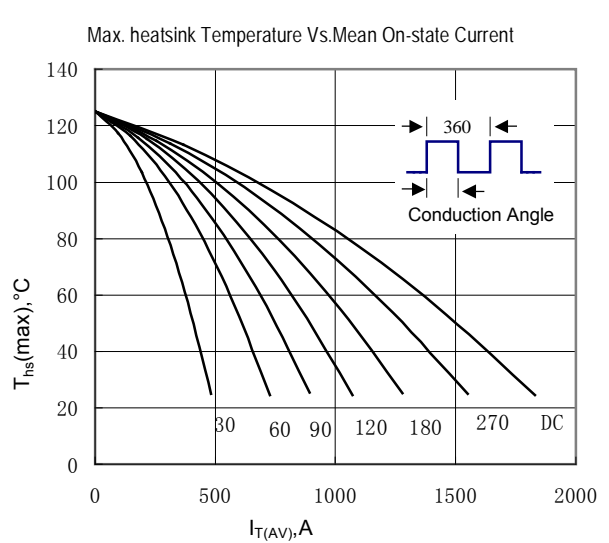
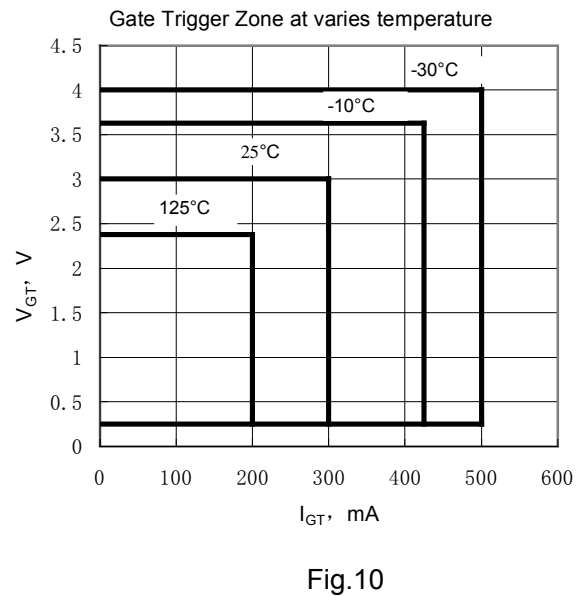
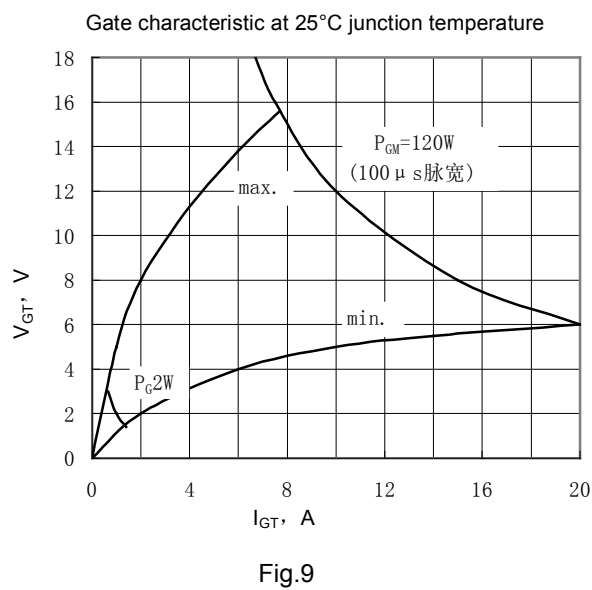
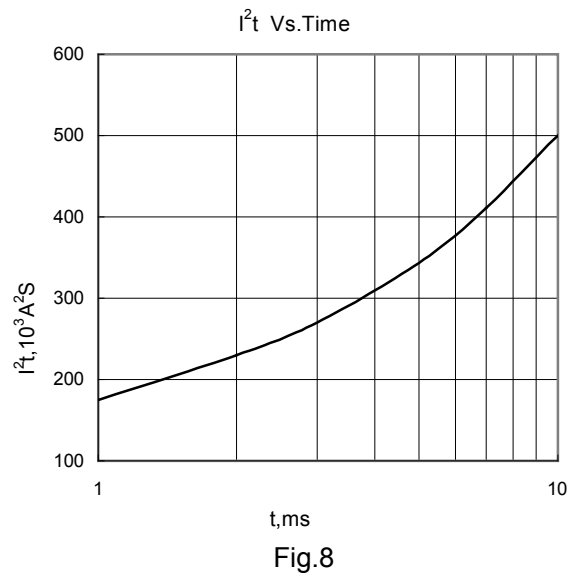
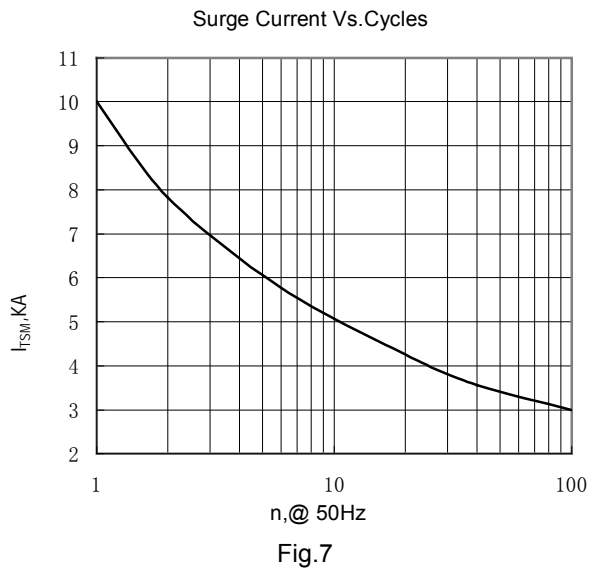


Fig.6



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