

# KP700A-R



## 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
$V_{DRM}/V_{RRM}$	5600~6500 V
$I_{TSM}$	11.8KA
$I^2t$	696 KA <sup>2</sup> S

Symb.		parameter	Test Conditions	$T_{J(e)}$	Value	Unit
Current Ratings	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=70^{\circ}C$	125	500	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=55^{\circ}C$	125	872	A
	$I_{TSM}$	Surge on-state current	10ms half sine wave $V_R=0.6V_{RRM}$	125	11.8	KA
	$I^2t$	$I^2t$ for fusing coordination		125	696	KA <sup>2</sup> 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	5600-6500	V
	$I_{DRM}$ $I_{RRM}$	Repetitive peak current	$V_{DM} = V_{DRM}$ $V_{RM} = V_{RRM}$	125	Max.200	mA
	$V_{TO}$	Threshold voltage		125	Max.1.25	V
	$V_{TM}$	Threshold voltage	$I_{TM}=1500A, F=24KN$	25	Max.2.7	V
	$r_T$	On-state slop resistance		125	Max.1.045	mΩ

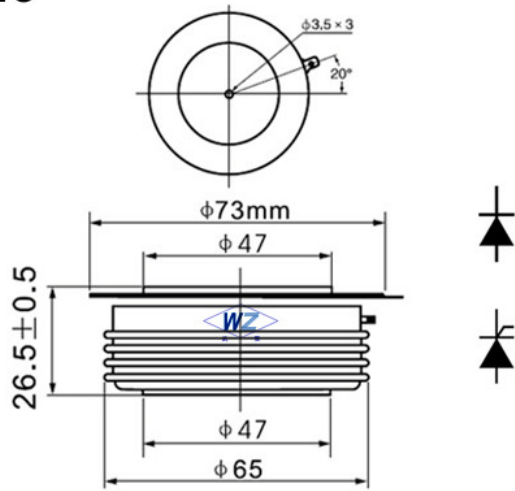
	$I_H$	Holding current	$V_A=12V, I_A=1A$	25	20-250	mA
<b>Dynamic Parameters</b>	$dv/dt$	Critical rate of rise of off-state voltage	$V_{DM}=67\%V_{DRM}$	125	Max.500	$V/\mu s$
	$di/dt$	Critical rate of rise of on-state current	$V_{DM}= 67\%V_{DRM}$ to 600A, Gate pulse $t_r \leq 0.5 \mu s$ $I_{GM}=1.5A$	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	$\mu s$
	$Q_{rr}$	Reverse Recovery charge	$di/dt=-20A/\mu s$	125	1588	$\mu c$
<b>Gate Parameters</b>	$I_{GT}$	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

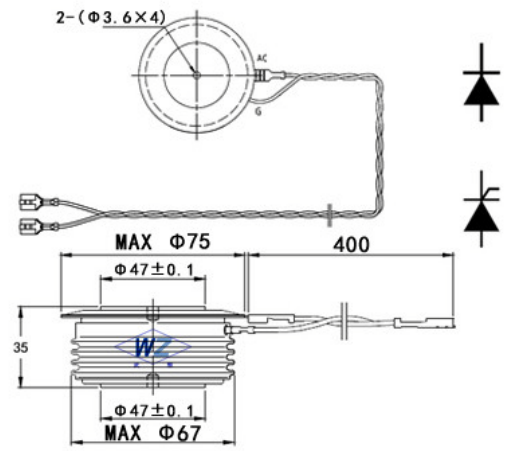
Symb.	parameter	Test Conditions	$T_{J(c)}$	Value	Unit
$R_{th(j-h)}$	Thermal resistance Junction to heat sink	At 180° sine wave, double side cooled Clamping force 24KN		Max.0.023	°C/W
$F_m$	Mounting force			19-26	KN
$T_{stg}$	Stored temperature			-40-140	°C
$W_t$	Weight			470	g

Dimensions:

C20



C45



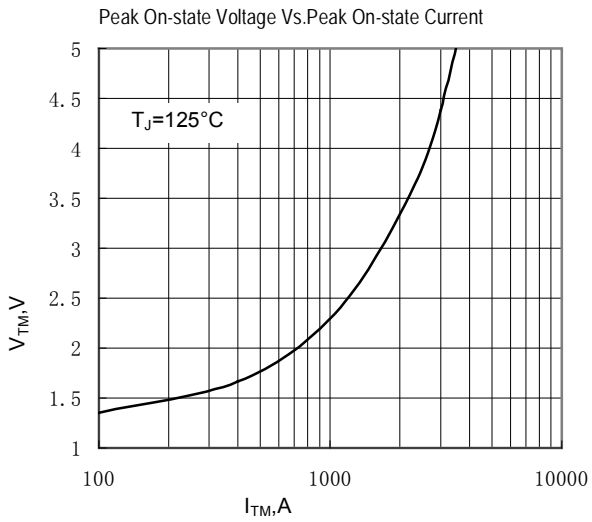


Fig.1

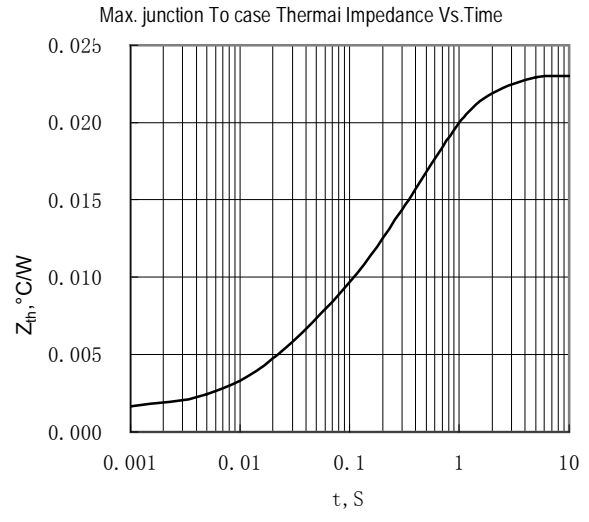


Fig.2

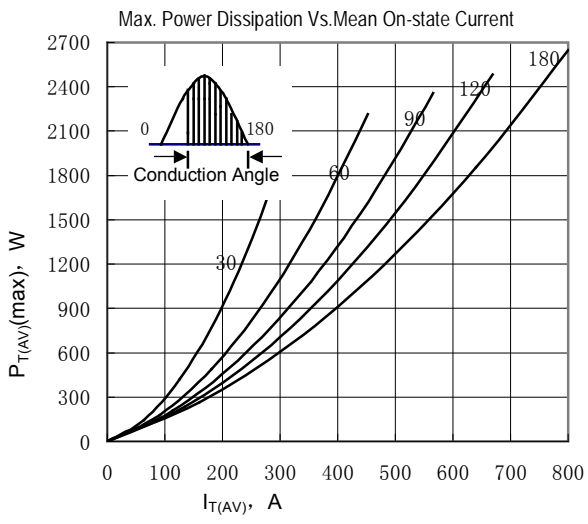


Fig.3

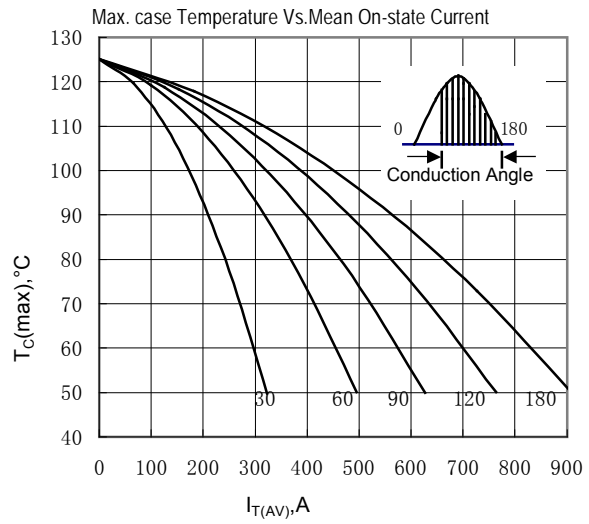


Fig.4

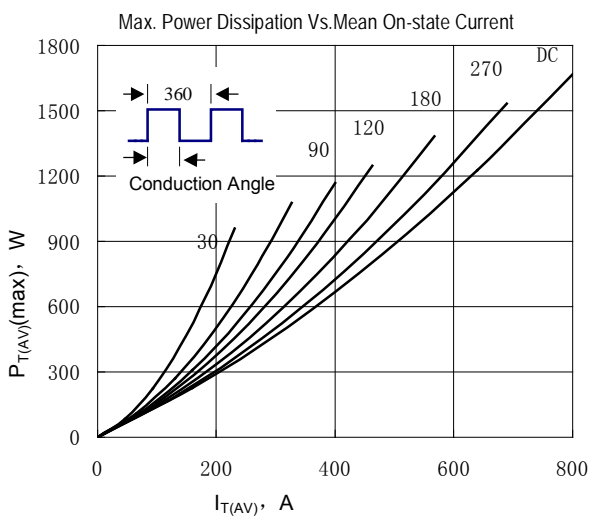


Fig.5

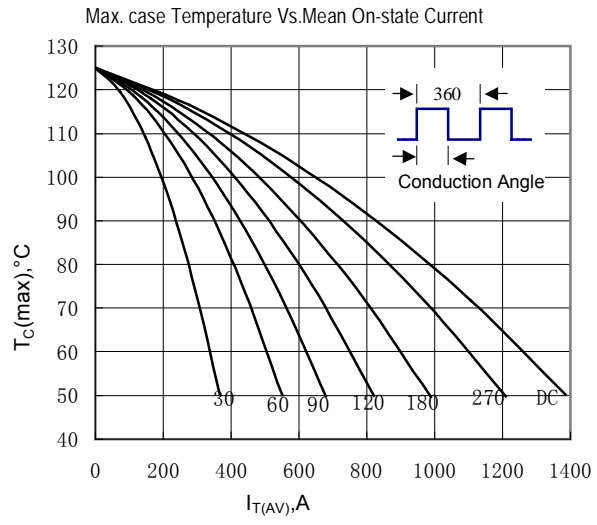


Fig.6

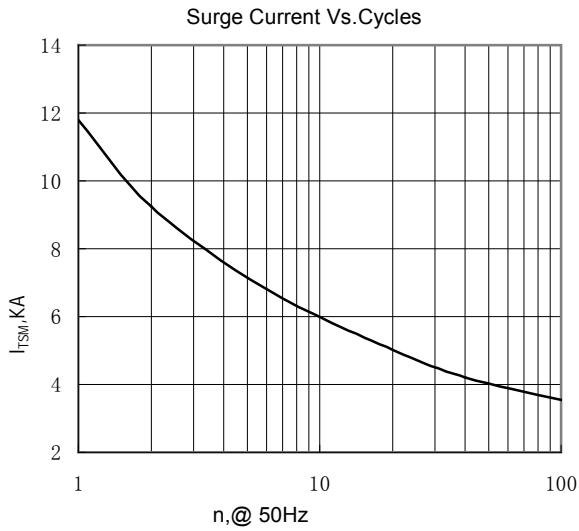


Fig.7

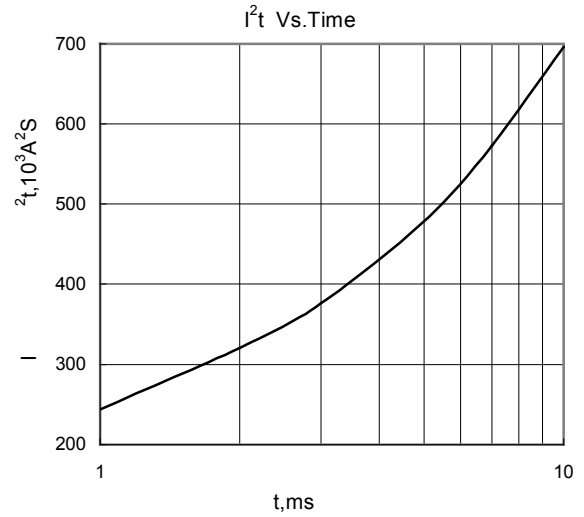


Fig.8

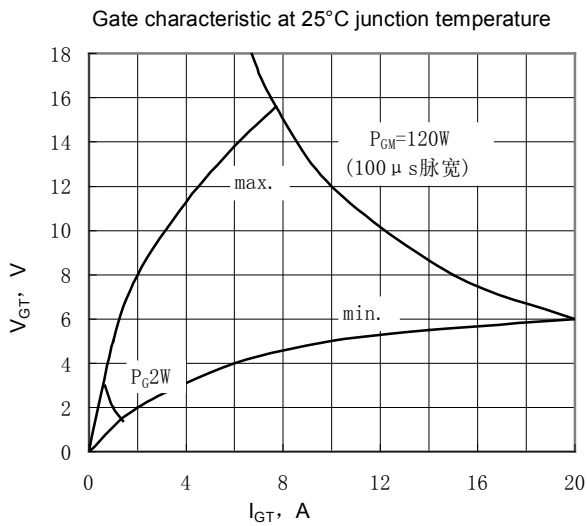


Fig.9

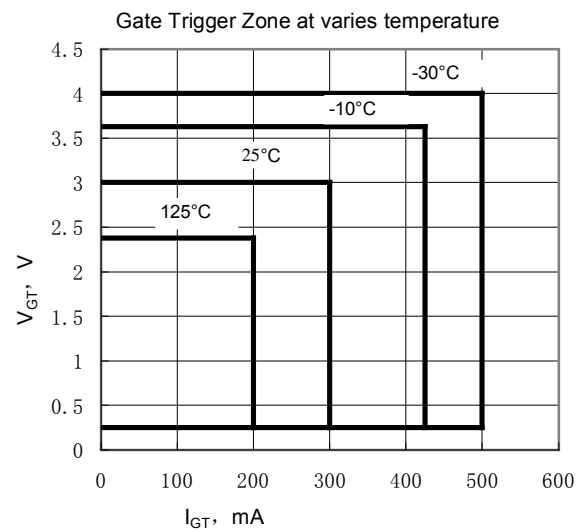


Fig.10

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