

KP500A-E



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

$I_{T(AV)}$	500 A
V_{DRM}/V_{RRM}	1100~1800 V
I_{TSM}	6.4KA
I^2t	205 KA ² 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 $T_{hs}=101^{\circ}C$	125	500	A
	$I_{T(AV)}$	Average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=55^{\circ}C$	125	1039	A
	I_{TSM}	Surge on-state current	10ms half sine wave $V_R=0.6V_{RRM}$	125	6.4	KA
	I^2t	I^2t for fusing coordination		125	205	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	1100-1800	V
	I_{DRM} I_{RRM}	Repetitive peak current	$V_{DM}=V_{DRM}$ $V_{RM}=V_{RRM}$	125	Max.40	mA
	V_{TO}	Threshold voltage		125	Max.0.85	V
	V_{TM}	Threshold voltage	$I_{TM}=1500A, F=15KN$	25	Max.2.20	V
	r_T	On-state slop resistance		125	Max.0.35	mΩ

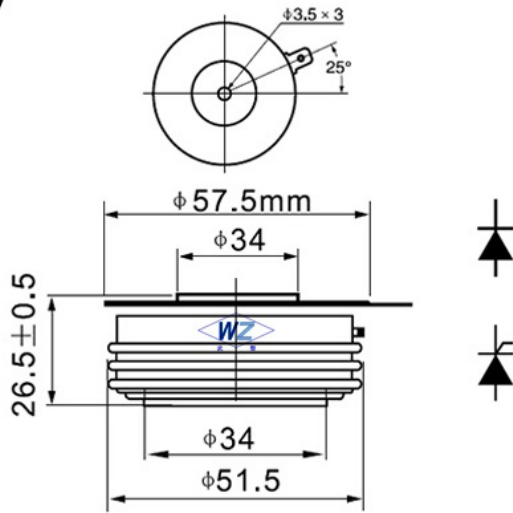
	I_H	Holding current	$V_A=12V, I_A=1A$	25	20-250	mA
Dynamic Parameters	dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=67\%V_{DRM}$	125	Max.300	$V/\mu s$
	di/dt	Critical rate of rise of on-state current	$V_{DM}= 67\%V_{DRM}$ to 600A, Gate pulse $t_r \leq 0.5 \mu s$ $I_{GM}=1.5A$	125	Max.100	$A/\mu s$
	t_{rr}	Reverse recovery time	$I_{TM}=500A, t_p=1000\mu s, V_R=50V$	125	15	μs
	Q_{rr}	Reverse Recovery charge	$di/dt=-20A/\mu s$	125	1087	μc
Gate Parameters	I_{GT}	Gate trigger current	$V_A=12V, I_A=1A$	25	35-300	mA
	V_{GT}	Gate trigger voltage		25	0.8-2.5	V
	V_{GD}	Non-trigger gate voltage	$V_{DM}=67\%V_{DRM}$	125	Min.0.3	V

Thermal & Mechanical Data

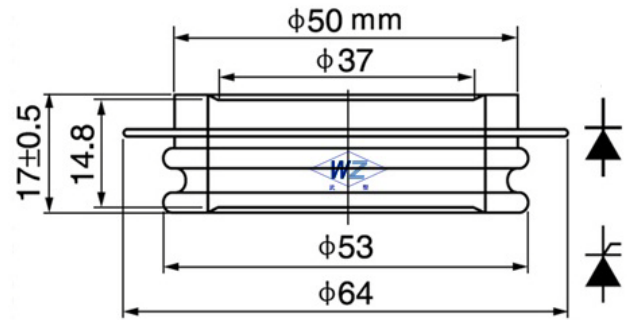
Symb.	parameter	Test Conditions	$T_{J(°C)}$	Value	Unit
$R_{th(j-h)}$	Thermal resistance Junction to heat sink	At 180° sine wave, double side cooled Clamping force 15KN		Max.0.035	°C/W
F_m	Mounting force			10-20	KN
T_{stg}	Stored temperature			-40-140	°C
W_t	Weight			270	g

Dimensions:

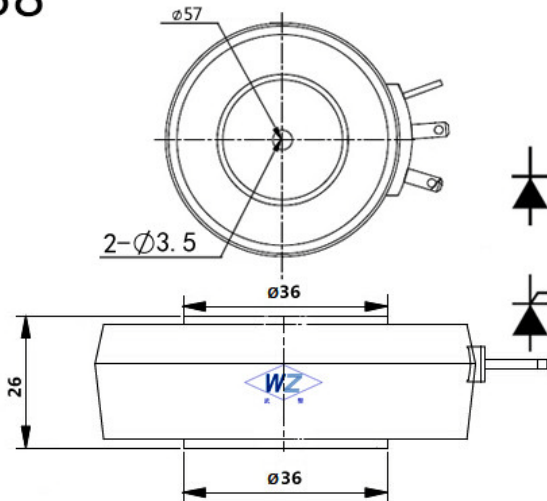
C17



C4



C38



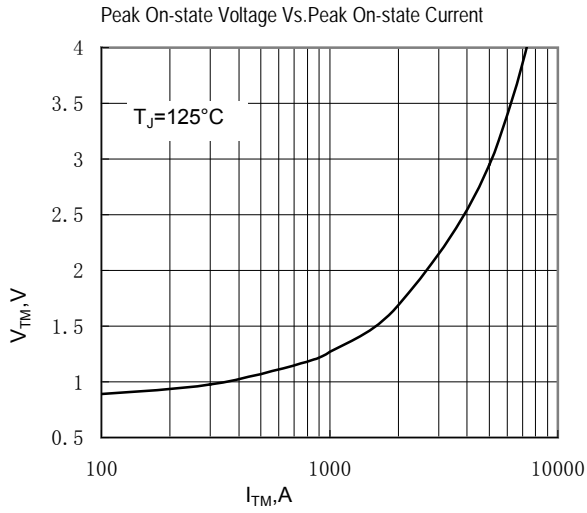


Fig.1

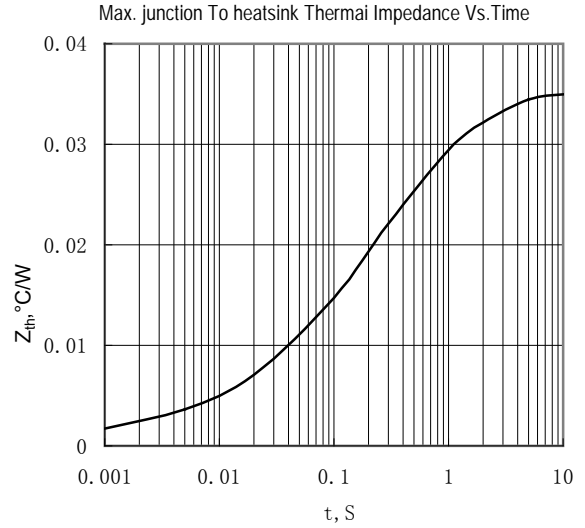


Fig.2

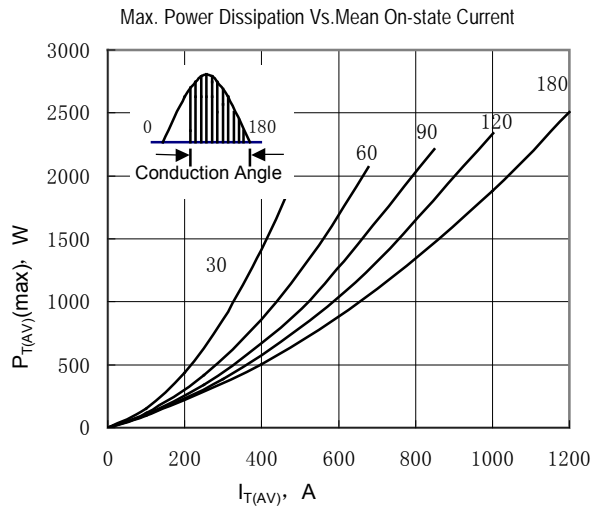


Fig.3

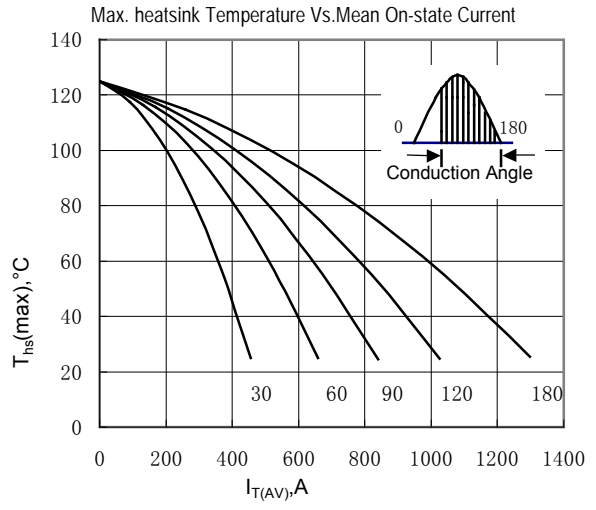


Fig.4

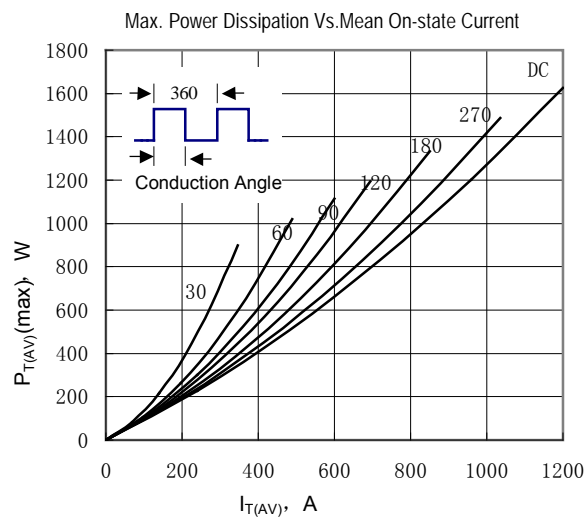


Fig.5

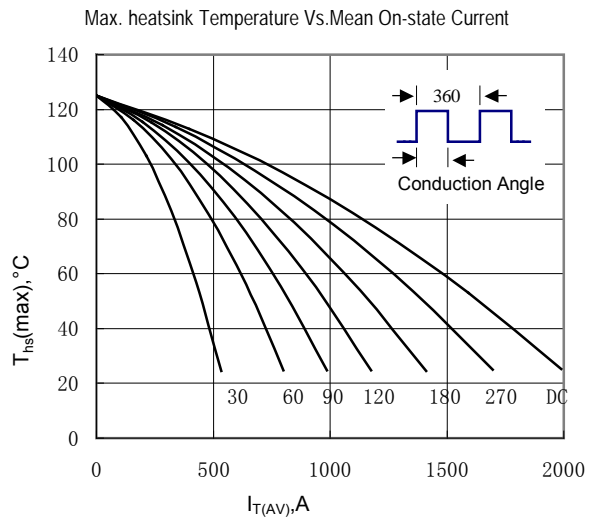


Fig.6

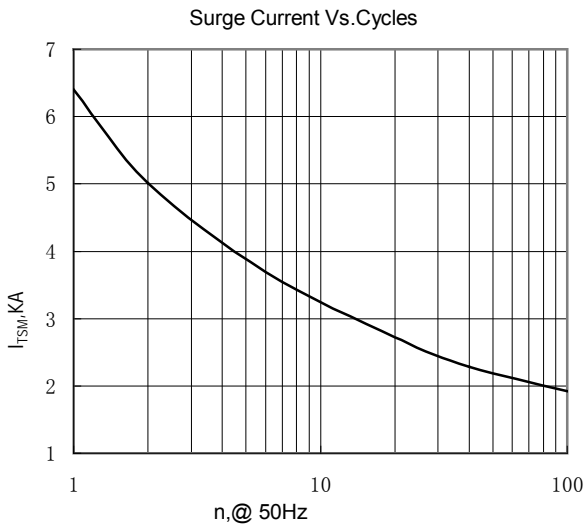


Fig.7

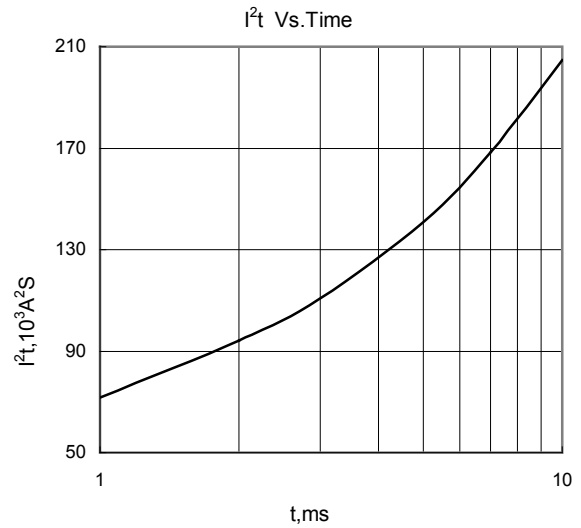


Fig.8

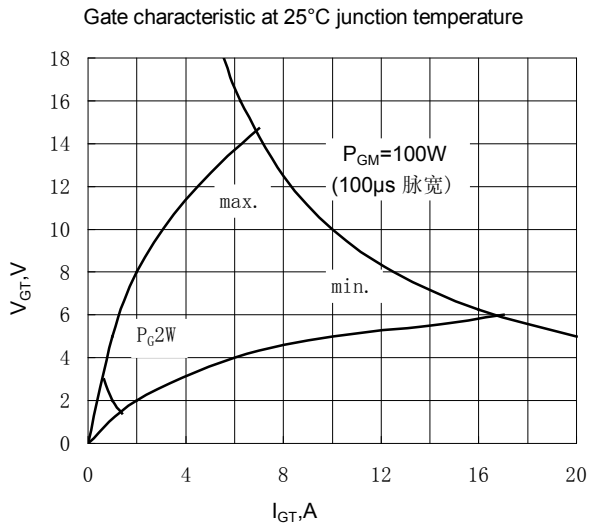


Fig.9

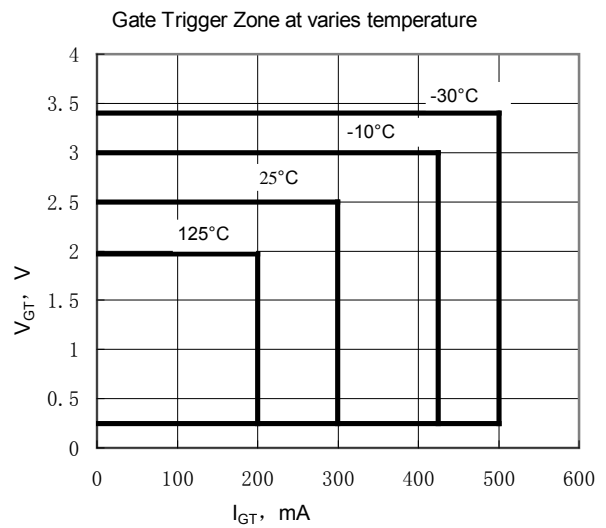


Fig.10

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