锦州市圣合科技电子有限责任公司

JinZhou ShengHe Power Electronic Co.,Ltd.

KA500A/600-900V

HIGH FREQUENCY THYRISTOR

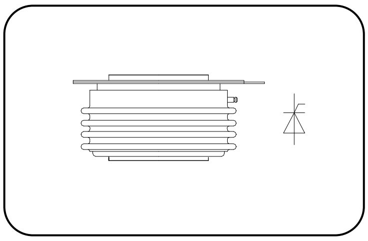
Features:

- Interdigitated amplifying gates
- Fast turn-on and high di/dt
- Low switching losses
- Short turn-off time
- Hermetic metal cases with ceramic insulators

Typical Applications

- Inductive heating
- Electronic welders
- Self-commutated inverters
- AC motor speed control
- General power switching applications

$I_{T(AV)}$	**500A**
V_{DRM}/V_{RRM}	**600~900V**
t_q	**5~7μs**
I_{TSM}	**8.0kA**



SYMBOL	CHARACTERISTIC	TEST CONDITIONS	T_j(°C)	VALUE			UNIT
				Min	Type	Max	
$I_{T(AV)}$	Mean on-state current	180° half sine wave 50Hz Double side cooled, T_C=55°C	125		500	670	A
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	600		900	V
I_{DRM} I_{RRM}	Repetitive peak off-state current Repetitive peak reverse current	V_D= V_{DRM} V_R= V_{RRM}	125			40	mA
I_{TSM}	Surge on-state current	10ms half sine wave V_R=0.6V_{RRM}	125			8.0	kA
I^2t	I^2T for fusing coordination					320	A^2s*10^3
V_{TO}	Threshold voltage		125			1. 80	V
r_T	On-state slop resistance					0.48	mΩ
V_{TM}	Peak on-state voltage	I_{TM}=1500A, F=18kN	25			3.20	V
dv/dt	Critical rate of rise of off-state voltage	V_{DM}=0.67V_{DRM}	125			1000	V/μs
di/dt	Critical rate of rise of on-state current	V_{DM}= 67%V_{DRM} , ITM=(2-3)IT(AV) , t=5s Gate pulse t_r ≤0.5μs I_{GM}=1.5A f=50Hz	125			600	A/μs
Q_{rr}	Recovery charge	I_{TM}=1000A,tp=1000μs, di/dt=-20A/μs,V_R=100V	125		33	50	μC
tq	Circuit commutated turn-off time	I_{TM}=1000A,tp=1000μs, V_R =100V dv/dt=30V/μs ,di/dt=-20A/μs	125	5		7	μs
I_{GT}	Gate trigger current	V_A=12V, I_A=1A	25	30		250	mA
V_{GT}	Gate trigger voltage			0.8		3.0	V
I_H	Holding current			20		400	mA
V_{GD}	Non-trigger gate voltage	V_{DM}=67%V_{DRM}	125			0.3	V
$R_{th(j-c)}$	Thermal resistance Junction to case	At 180^0 sine, double side cooled Clamping force 18kN				0.035	°C /W
$R_{th(c-h)}$	Thermal resistance case to heat sink					0.008	
F_m	Mounting force			15		20	kN
T_{stg}	Stored temperature			-40		140	°C
W_t	Weight				260/320		g
Outline	**KT40cT/KT45cT**						

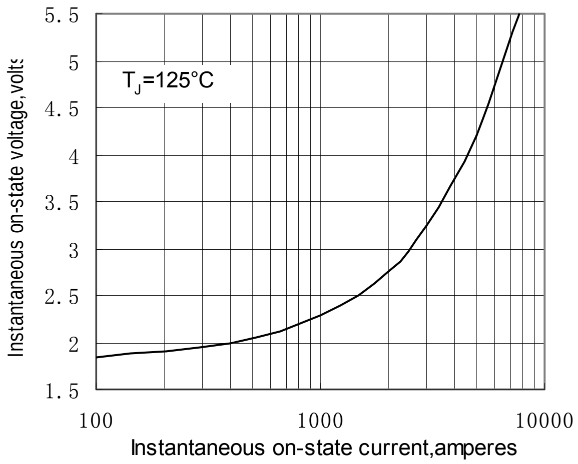

Peak On-state Voltage Vs.Peak On-state Current

Fig.1

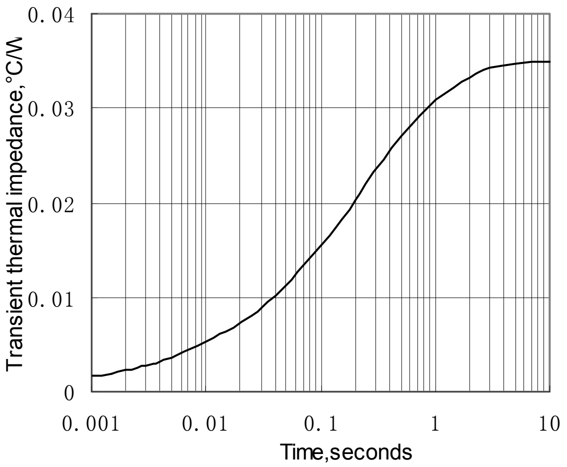

Max. junction To Case Thermai Impedance Vs.Time

Fig.2

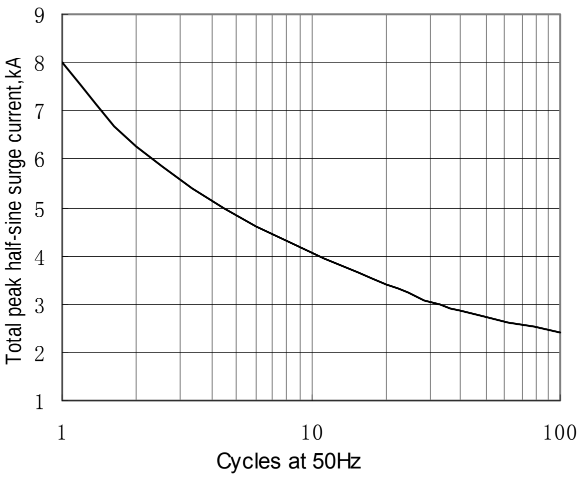

Surge Current Vs.Cycles

Fig.3

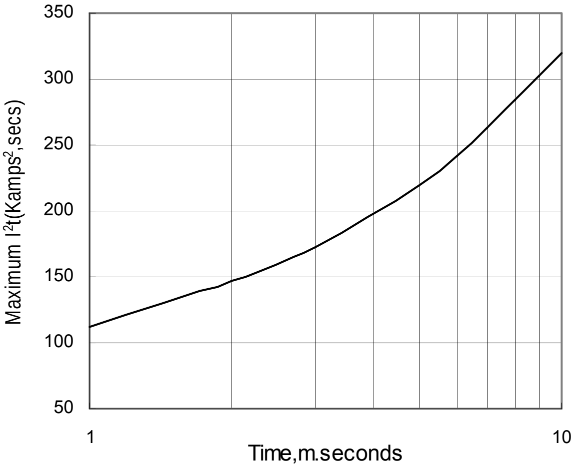

I^2t Vs.Time

Fig.4

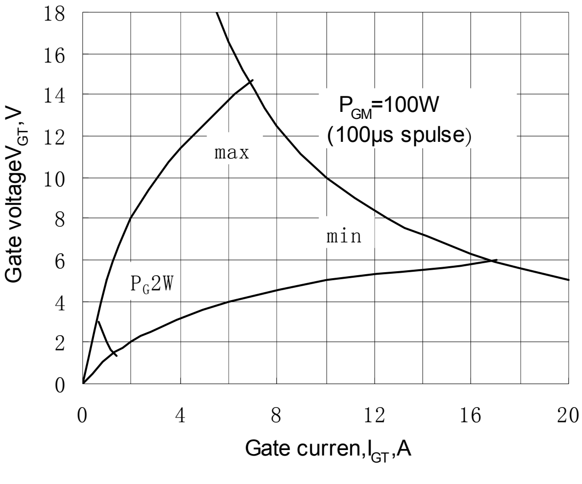

Gate characteristic at 25°C junction temperature

Fig.5

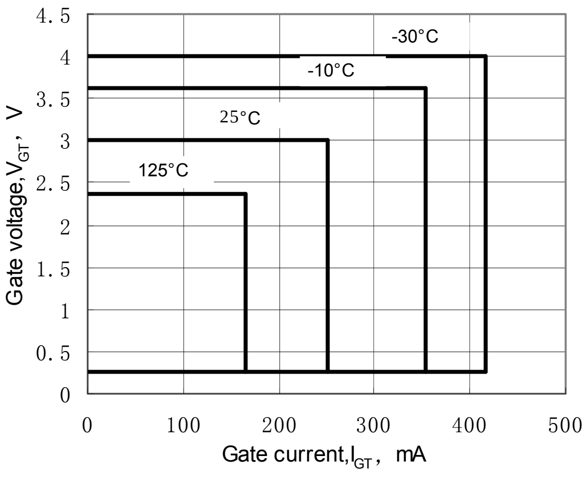

Gate Trigger Zone at varies temperature

Fig.6

Outline:

图4-KT40cT

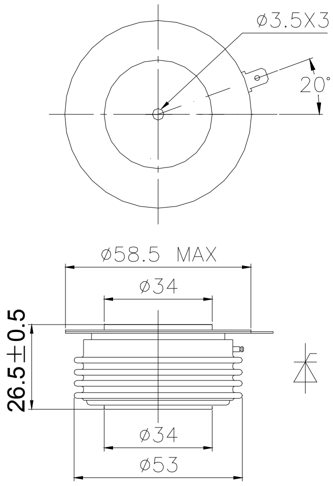


图6-KT45cT