Y50KAD

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

$I_{T(AV)}$	**1260A**
V_{DRM}/V_{RRM}	**800~1400V**
t_q	**15~28μs**
I_{TSM}	**16.3kA**

SYMBOL	CHARACTERISTIC	TEST CONDITIONS	T_j(°C)	VALUE Min	VALUE Type	VALUE Max	UNIT
$I_{T(AV)}$	Mean on-state current	180° half sine wave 50Hz Double side cooled, T_C=55°C	125			1260	A
		T_C=85°C				840	
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	800		1400	V
I_{DRM} I_{RRM}	Repetitive peak off-state current Repetitive peak reverse current	V_D= V_{DRM} V_R= V_{RRM}	125			80	mA
I_{TSM}	Surge on-state current	10ms half sine wave V_R=0.6V_{RRM}	125			16.3	kA
I^2t	I^2T for fusing coordination					1328	A^2s*10^3
V_{TO}	Threshold voltage		125			1. 65	V
r_T	On-state slop resistance					0.36	mΩ
V_{TM}	Peak on-state voltage	I_{TM}=2400A, F=24kN	125			2.51	V
dv/dt	Critical rate of rise of off-state voltage	V_{DM}=0.67V_{DRM}	125			200	V/μs
di/dt	Critical rate of rise of on-state current	V_{DM}= 67%V_{DRM}, to2000A Gate pulse t_r ≤0.5μs I_{GM}=1.5A	125			1500	A/μs
Q_{rr}	Recovery charge	I_{TM}=2000A,tp=2000μs, di/dt=-60A/μs,V_R=50V	125		87	100	μC
tq	Circuit commutated turn-off time	I_{TM}=1000A,tp=1000μs, V_R =50V dv/dt=30V/μs ,di/dt=-20A/μs	125	15		28	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 24kN				0.020	°C /W
$R_{th(c-h)}$	Thermal resistance case to heat sink					0.005	
F_m	Mounting force			19		26	kN
T_{stg}	Stored temperature			-40		140	°C
W_t	Weight				440		g
Outline	KT50cT						

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

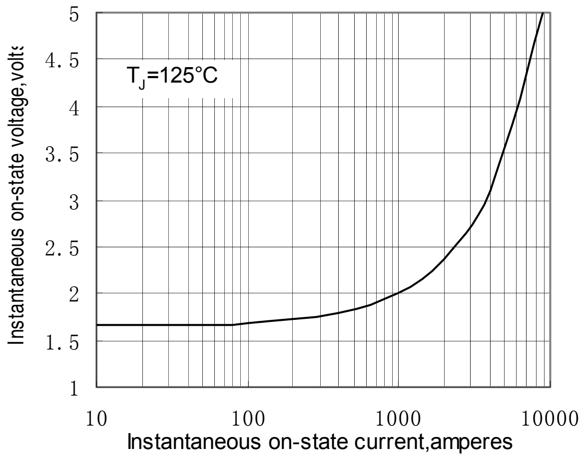

Fig.1

Max. junction To Case Thermai Impedance Vs.Time

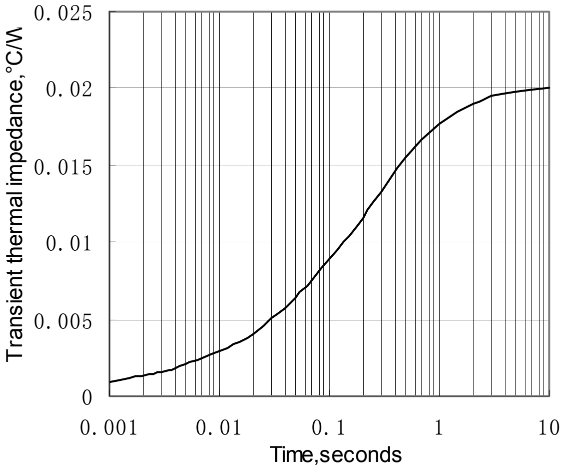

Fig.2

Surge Current Vs.Cycles

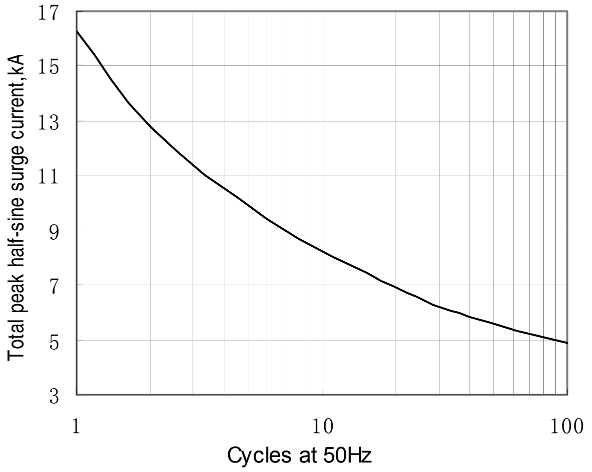

Fig.3

I^2t Vs.Time

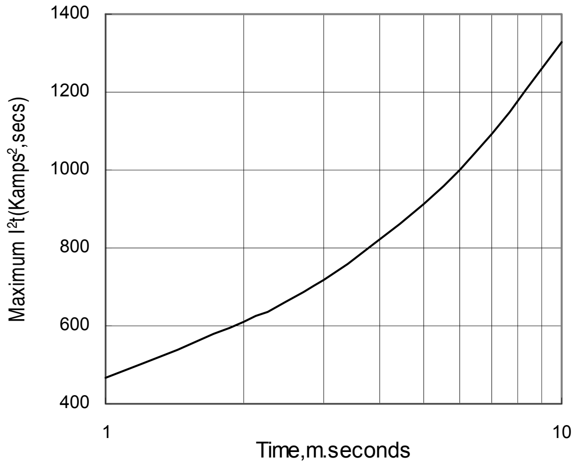

Fig.4

Gate characteristic at 25°C junction temperature

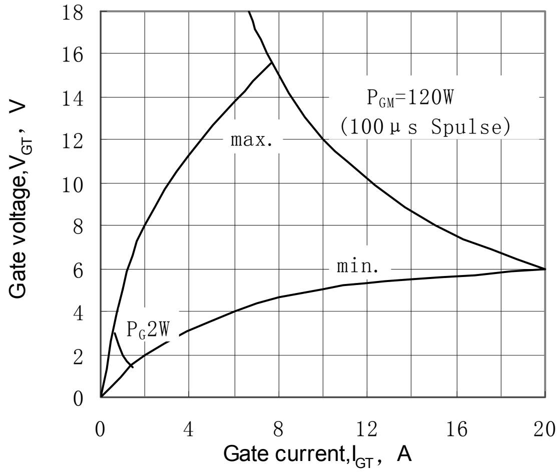

Fig.5

Gate Trigger Zone at varies temperature

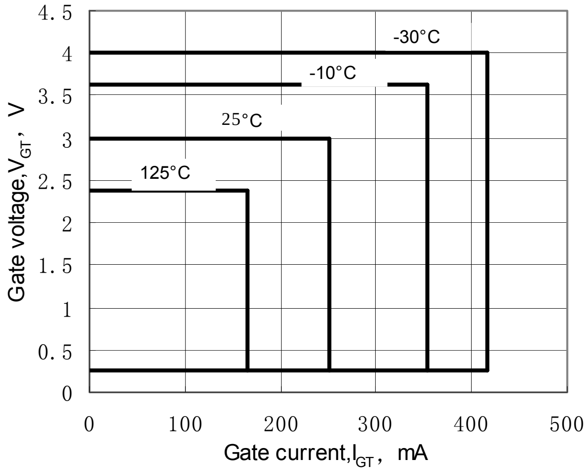

Fig.6

Outline: