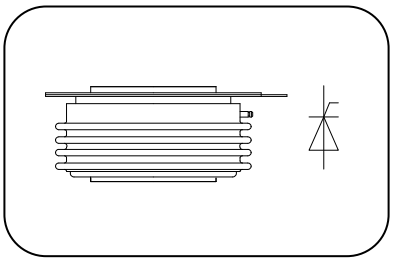
TECHSEM

Y50KPH
PHASE CONTROL THYRISTOR

Features:
- Center amplifying gate
- Metal case with ceramic insulator
- Low on-state and switching losses

Typical Applications
- AC controllers
- DC and AC motor control
- Controlled rectifiers

$I_{T(AV)}$ 1240A
V_{DRM}/V_{RRM} 1900~3000V
I_{TSM} 20 kA
I^2t 2000 10^3A^2S



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			1460	A
			T_C=70°C				1240	
			old model				1000	
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	1900		3000	V
I_{DRM} I_{RRM}	Repetitive peak current	V_{DM}= V_{DRM} V_{RM}= V_{RRM}		125			80	mA
I_{TSM}	Surge on-state current	10ms half sine wave V_R=0.6V_{RRM}		125			20	kA
I^2t	I^2T for fusing coordination						2000	A^2s*10^3
V_{TO}	Threshold voltage			125			1.11	V
r_T	On-state slop resistance						0.36	mΩ
V_{TM}	Peak on-state voltage	I_{TM}=2550A, F=24kN		125			2.02	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} to1500A, Gate pulse t_r ≤0.5μs I_{GM}=1.5A		125			150	A/μs
Q_{rr}	Recovery charge	I_{TM}=2000A,tp=2000μs, di/dt=-20A/μs, V_R =50V		125		1600		μC
I_{GT}	Gate trigger current	V_A=12V, I_A=1A		25	40		300	mA
V_{GT}	Gate trigger voltage				0.8		3.0	V
I_H	Holding current				20		300	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 heatsink						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

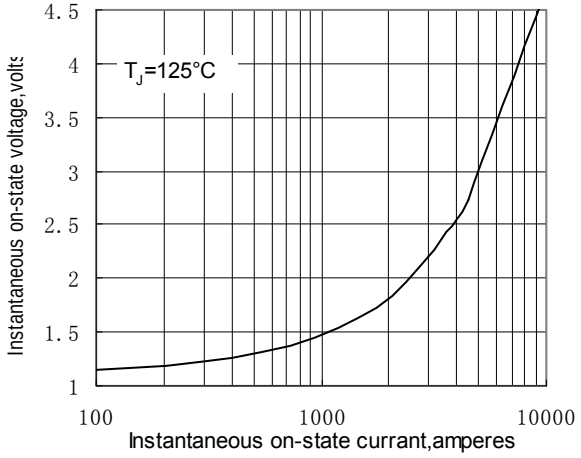


Fig.1

Max. junction To case Thermai Impedance Vs.Time

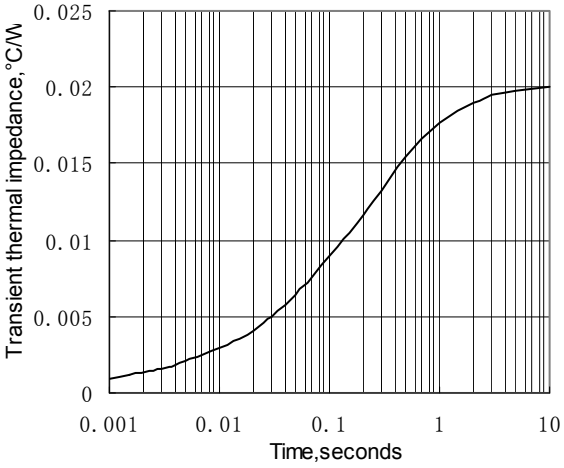


Fig.2

Max. Power Dissipation Vs.Mean On-state Current

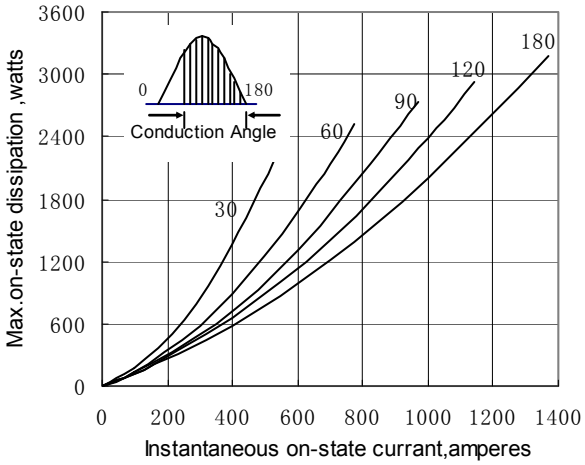


Fig.3

Max. Case Temperature Vs.Mean On-state Current

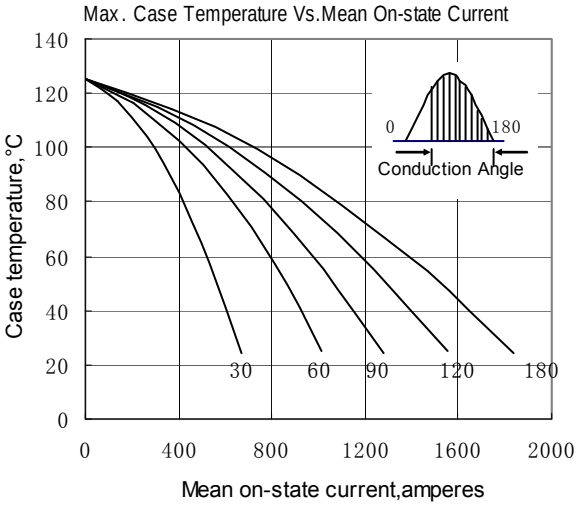


Fig.4

Max. Power Dissipation Vs.Mean On-state Current

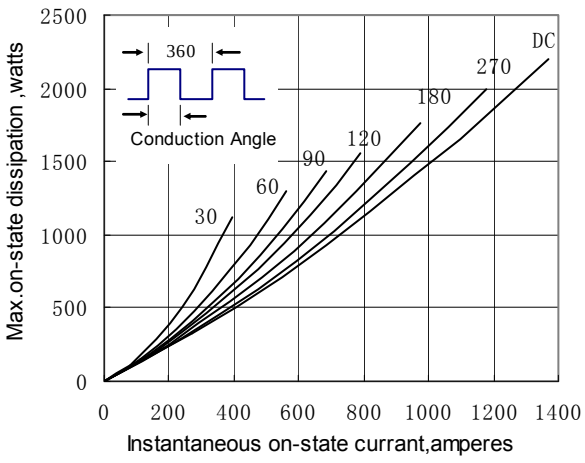


Fig.5

Max. Case Temperature Vs.Mean On-state Current

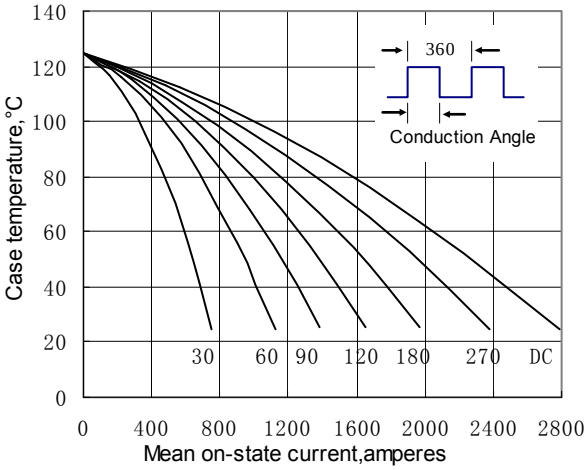


Fig.6

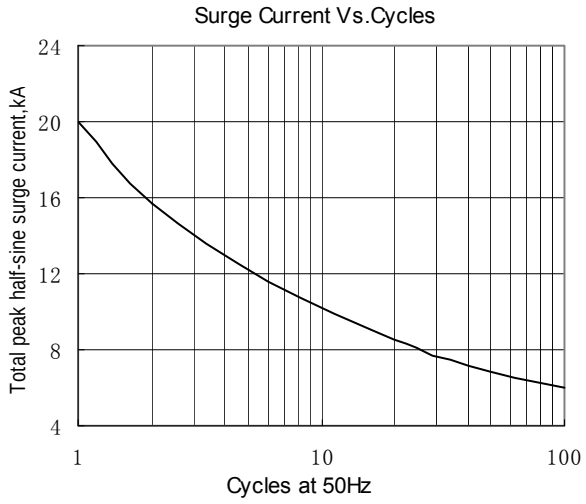


Fig.7

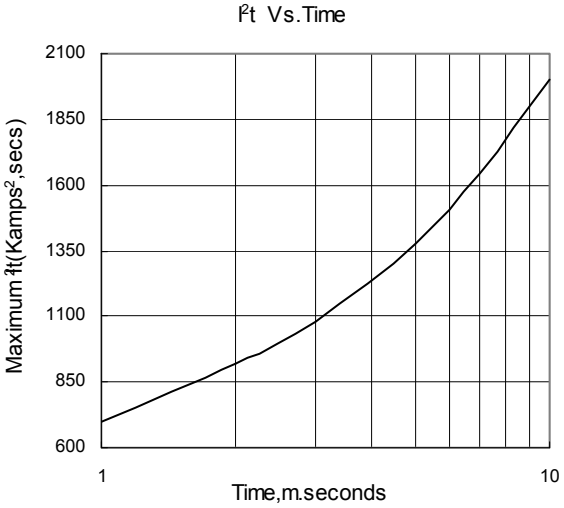


Fig.8

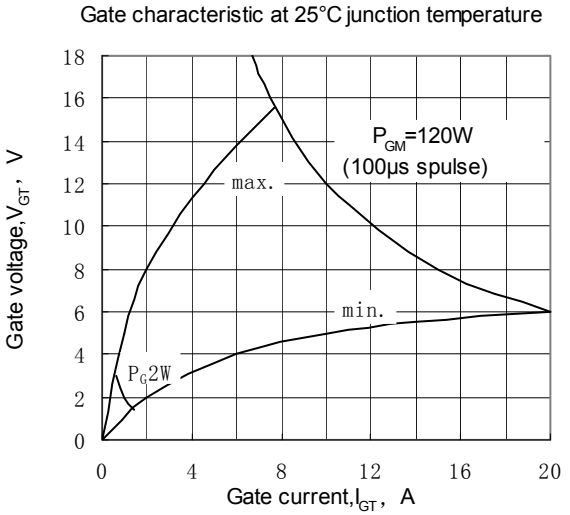


Fig.9

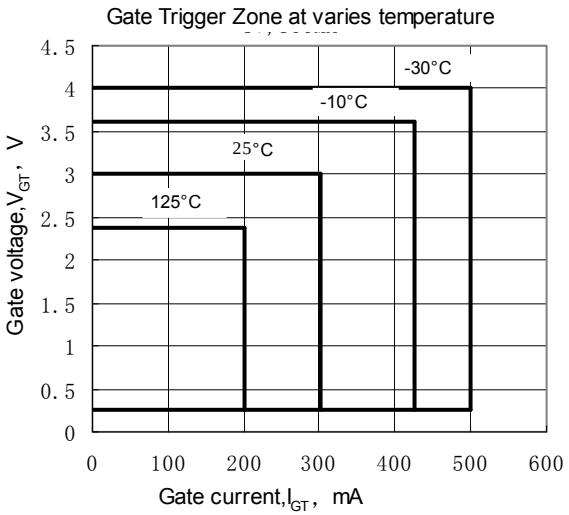
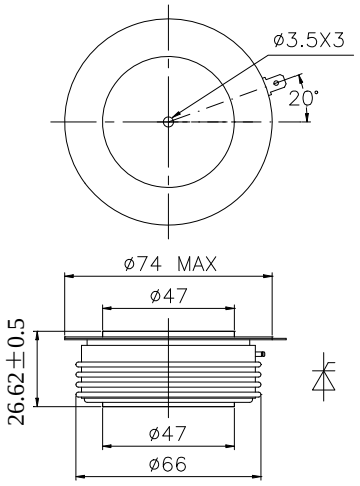


Fig.10

Outline: