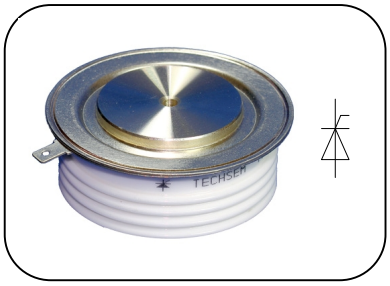
TECHSEM

Y45KPC
PHASE CONTROL THYRISTOR

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

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

$I_{T(AV)}$	1340A
V_{DRM}/V_{RRM}	400~1000V
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=70°C				1340	
V_{DRM} V_{RRM}	Repetitive peak off-state voltage Repetitive peak reverse voltage	tp=10ms		125	400		1000	V
I_{DRM} I_{RRM}	Repetitive peak current	at V_{DRM} at V_{RRM}		125			60	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			0.88	V
r_T	On-state slope resistance						0.25	mΩ
V_{TM}	Peak on-state voltage	I_{TM}=3000A, F=21kN		25			1.80	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} to 1500A, 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		1200		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		250	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 21kN					0.024	°C /W
$R_{th(c-h)}$	Thermal resistance case to heatsink						0.006	
F_m	Mounting force				18		25	kN
T_{stg}	Stored temperature				-40		140	°C
W_t	Weight					380		g
Outline	KT44cT							

On-state voltage Vs.peak on-state current

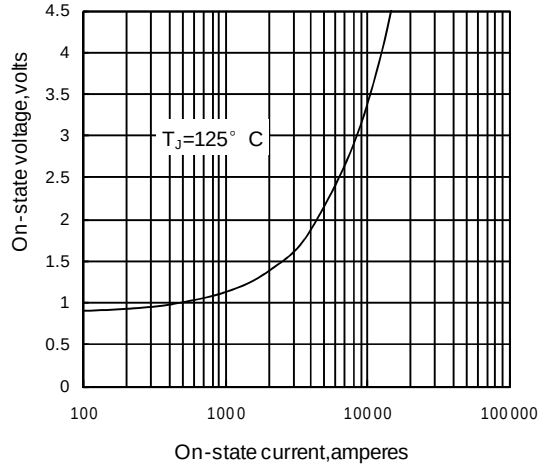


Fig1

Max. junction to case thermal impedance Vs.time

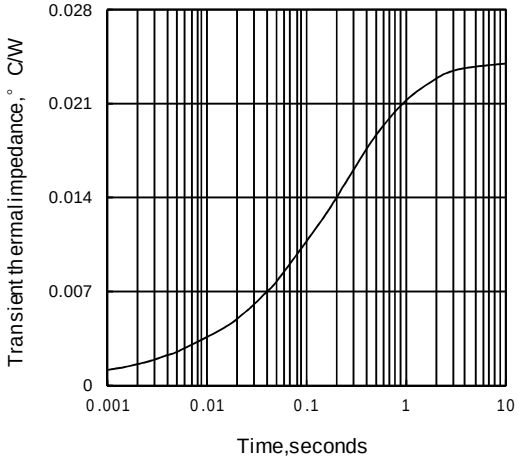


Fig2

Max. power dissipation Vs.mean on-state current

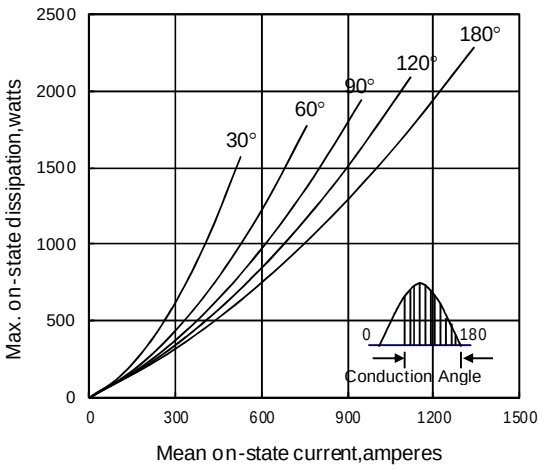


Fig3

Max.case temperature Vs.mean on-state current

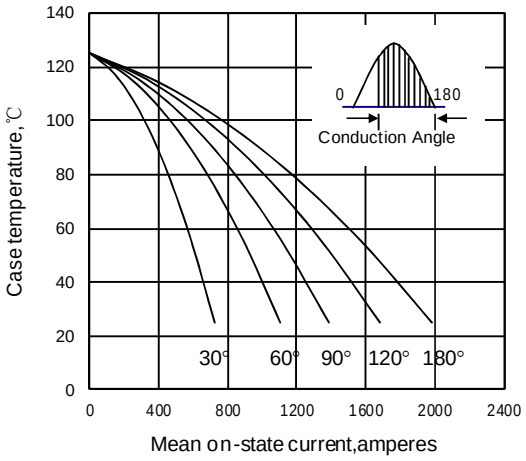


Fig4

Max. power dissipation Vs.mean on-state current

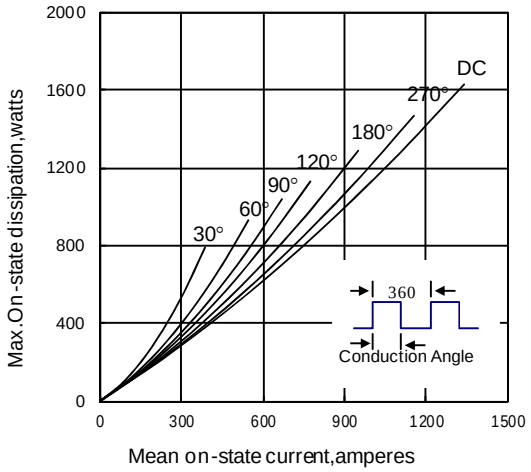


Fig5

Max. case temperature Vs.mean on-state current

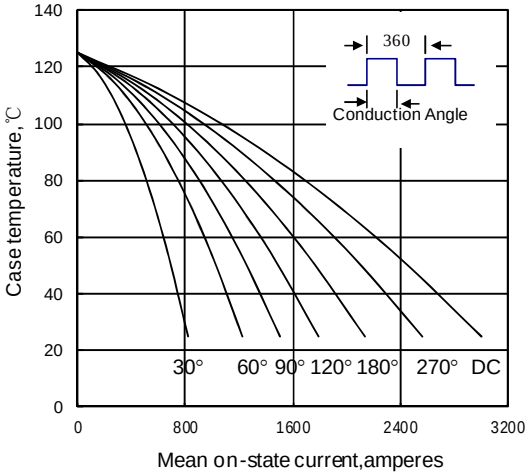


Fig6

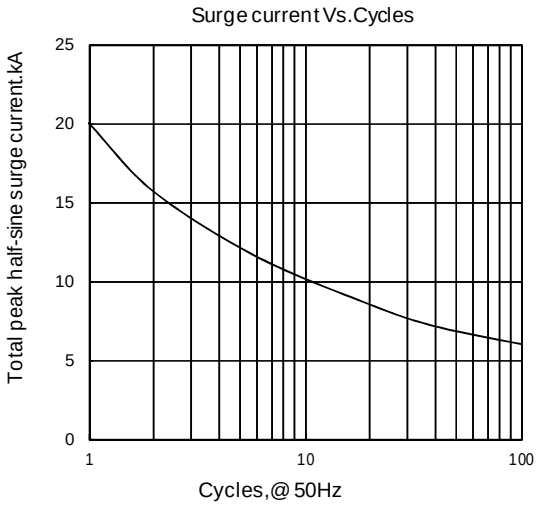


Fig7

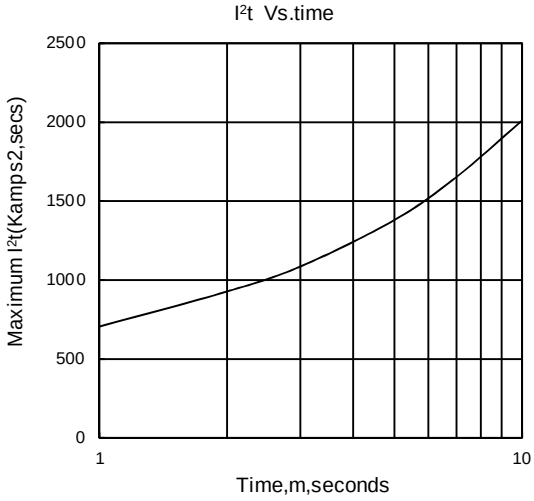


Fig8

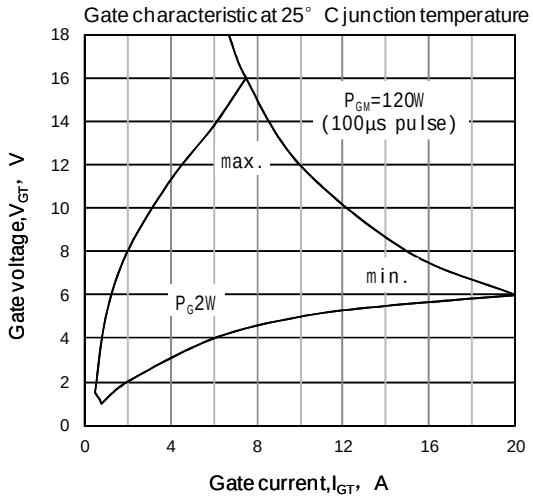


Fig9

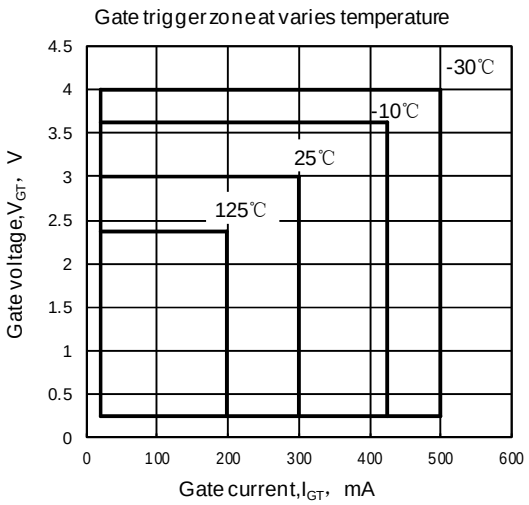
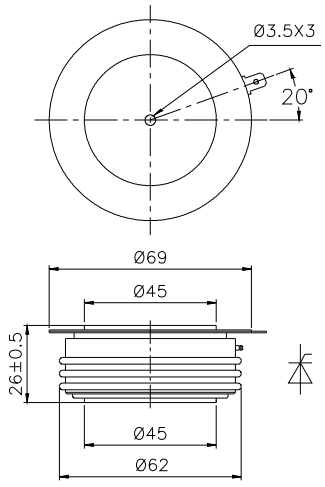


Fig10

Outline