

**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

Part No. Y38KAC-KT33cT

$I_{T(AV)}$	700A
V_{DRM}, V_{RRM}	800V 1000V
	1200V
t_q	8~20μs

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, $T_C=55^\circ\text{C}$	125			700	A
V_{DRM} V_{RRM}	Repetitive peak off-state voltage Repetitive peak reverse voltage	$t_p=10\text{ms}$	125	800		1200	V
I_{DRM} I_{RRM}	Repetitive peak off-state current Repetitive peak reverse current	at V_{DRM} at V_{RRM}	125			40	mA
I_{TSM}	Surge on-state current	10ms half sine wave	125			8.9	kA
I^2t	I^2t for fusing coordination	$V_R=0.6V_{RRM}$				396	$\text{A}^2\text{s}\cdot 10^3$
V_{TO}	Threshold voltage		125			1.68	V
r_T	On-state slope resistance					0.67	$\text{m}\Omega$
V_{TM}	Peak on-state voltage	$I_{TM}=1200\text{A}$, $F=15\text{kHz}$	25			3.20	V
dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=0.67V_{DRM}$	125			1000	$\text{V}/\mu\text{s}$
di/dt	Critical rate of rise of on-state current	$V_{DM}=67\%V_{DRM}$, to 1400A Gate pulse $t_r \leq 0.5\mu\text{s}$ $I_{GM}=1.5\text{A}$	125			1500	$\text{A}/\mu\text{s}$
Q_{rr}	Recovery charge	$I_{TM}=1000\text{A}$, $t_p=4000\mu\text{s}$, $di/dt=20\text{A}/\mu\text{s}$, $V_R=100\text{V}$	125		33	50	μC
t_q	Circuit commutated turn-off time	$I_{TM}=1000\text{A}$, $t_p=4000\mu\text{s}$, $V_R=100\text{V}$ $dv/dt=30\text{V}/\mu\text{s}$, $di/dt=20\text{A}/\mu\text{s}$	125	8		20	μs
I_{GT}	Gate trigger current	$V_A=12\text{V}$, $I_A=1\text{A}$	25	30		250	mA
V_{GT}	Gate trigger voltage			0.8		3.0	V
I_H	Holding current			20		400	mA
I_L	Latching current					500	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° sine double side cooled Clamping force 15kN				0.035	C / W
$R_{th(c-h)}$	Thermal resistance case to heat sink					0.008	
F_m	Mounting force			10		20	kN
T_{vj}	Junction temperature			-40		125	C
T_{stg}	Stored temperature			-40		140	C
W_t	Weight				250		g
Outline	KT33cT						

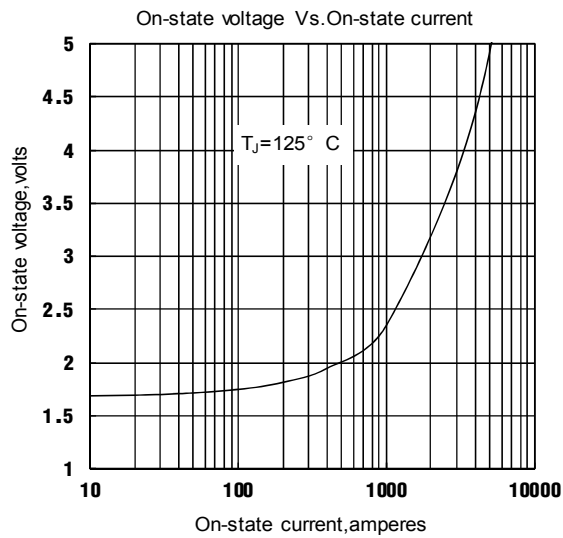


Fig.1

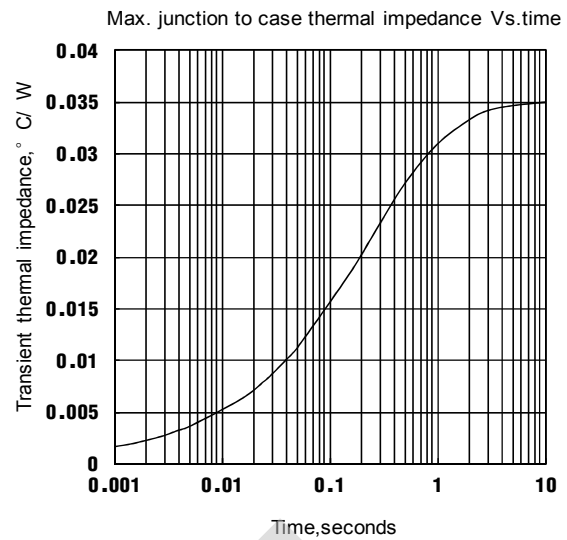


Fig.2

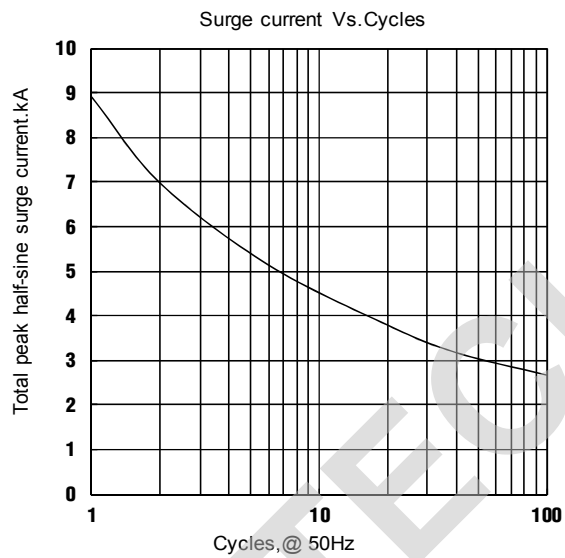


Fig.3

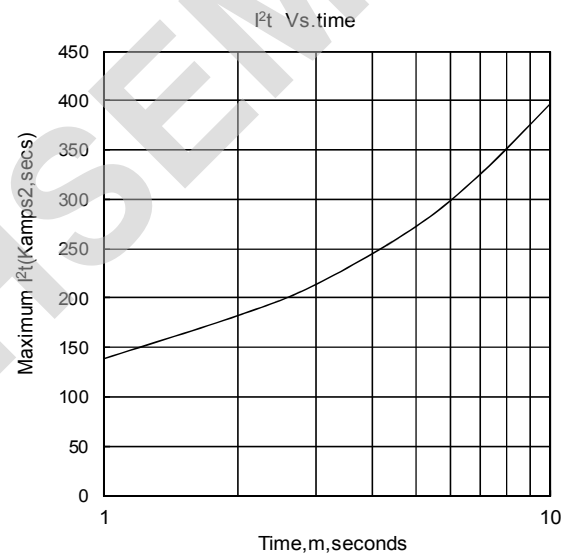


Fig.4

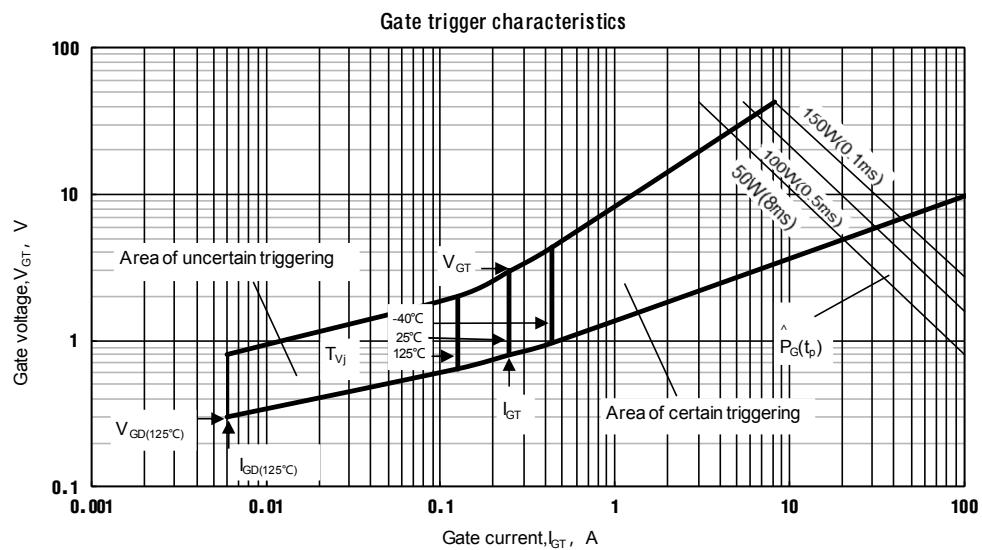
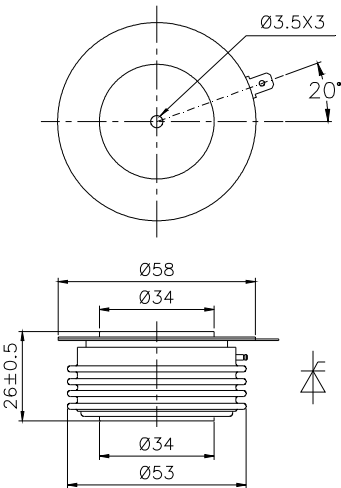


Fig.5

Outline:



TECHSEM reserves the right to change specifications without notice.