

**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

Part No. H89KPE-KT78cT

$I_{T(AV)}$	4000A	
V_{DRM} / V_{RRM}	1600V	1800V
	2000V	2200V

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, $T_C=70^\circ\text{C}$	125			4000	A
V_{DRM} V_{RRM}	Repetitive peak off-state voltage Repetitive peak reverse voltage	$t_p=10\text{ms}$	125	1600		2200	V
I_{DRM} I_{RRM}	Repetitive peak current	at V_{DRM} at V_{RRM}	125			400	mA
I_{TSM}	Surge on-state current	10ms half sine wave $V_R=0.6V_{RRM}$	125			64.5	kA
I^2t	I^2t for fusing coordination					20800	$\text{A}^2\text{s} \times 10^3$
V_{TO}	Threshold voltage		125			0.88	V
r_T	On-state slope resistance					0.09	m Ω
V_{TM}	Peak on-state voltage	$I_{TM}=3000\text{A}$, $F=70\text{kN}$	25			1.28	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 3000A, Gate pulse $t_r \leq 0.5\mu\text{s}$ $I_{GM}=1.5\text{A}$	125			250	A/ μs
Q_{rr}	Recovery charge	$I_{TM}=2000\text{A}$, $t_p=4000\mu\text{s}$, $di/dt=-20\text{A}/\mu\text{s}$, $V_R=100\text{V}$	125		3000		μC
I_{GT}	Gate trigger current		25	40		300	mA
V_{GT}	Gate trigger voltage	$V_A=12\text{V}$, $I_A=1\text{A}$		0.8		3.0	V
I_H	Holding current			25		200	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				0.007	C /W
$R_{th(c-hs)}$	Thermal resistance case to heatsink	Clamping force 70.0kN				0.002	C /W
F_m	Mounting force			63	70	84	kN
T_{vj}	Junction temperature			-40		125	C
T_{stg}	Stored temperature			-40		140	C
W_t	Weight				1390		g
Outline	KT78cT						

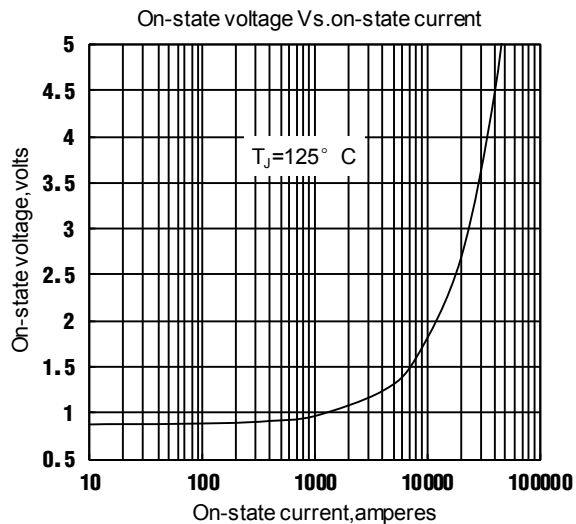


Fig.1

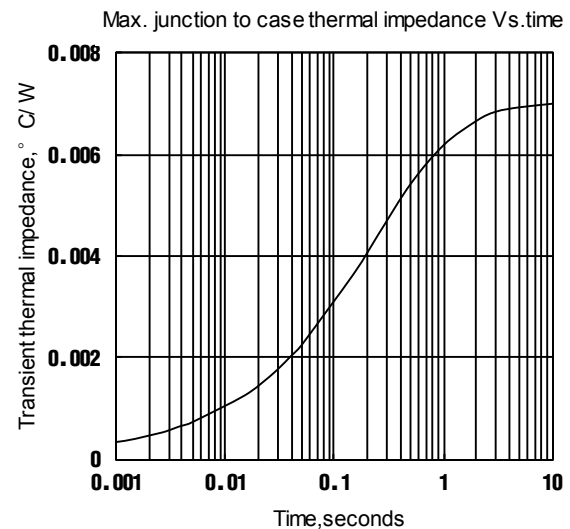


Fig.2

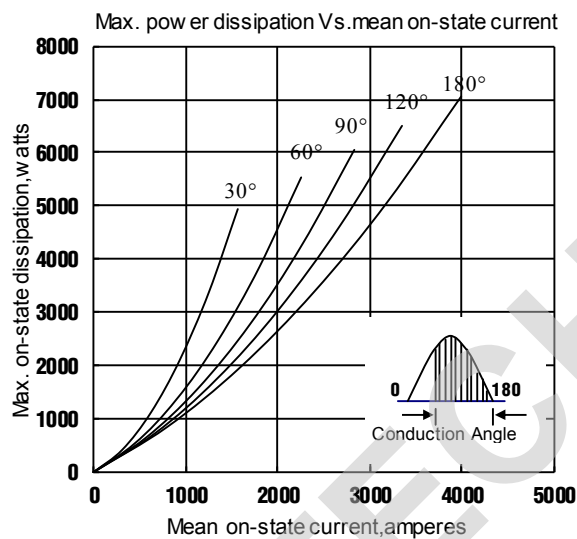


Fig.3

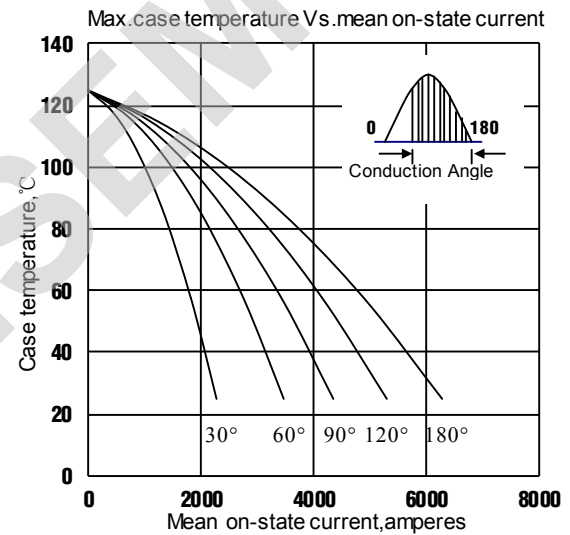


Fig.4

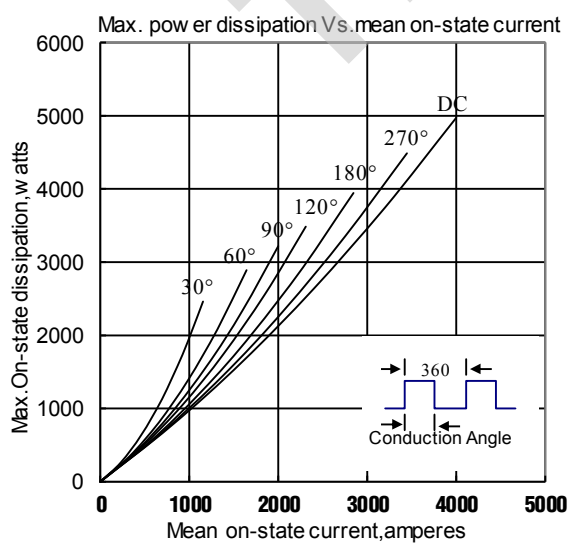


Fig.5

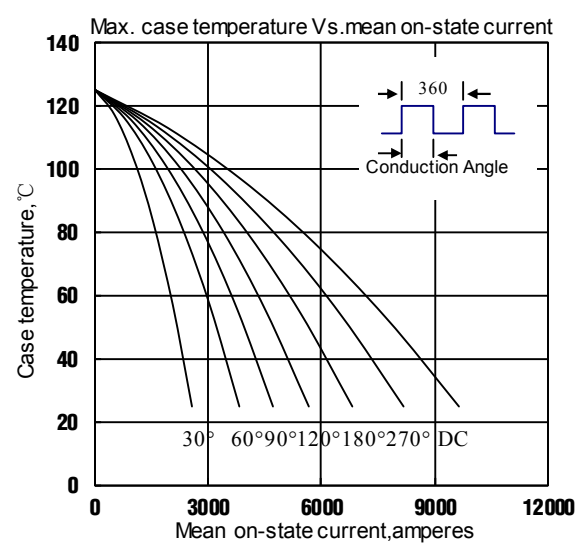


Fig.6

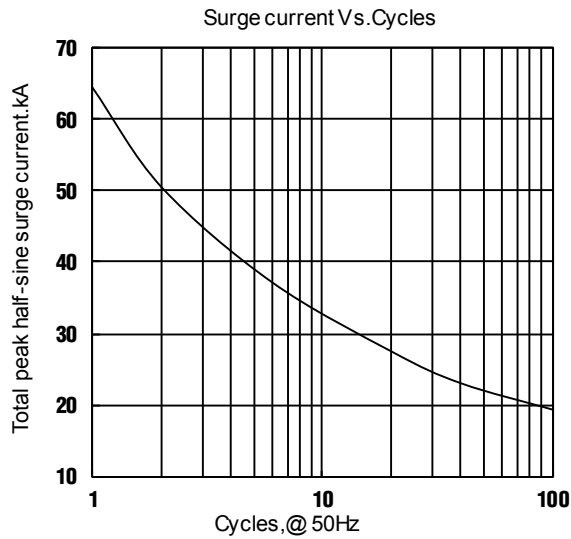


Fig.7

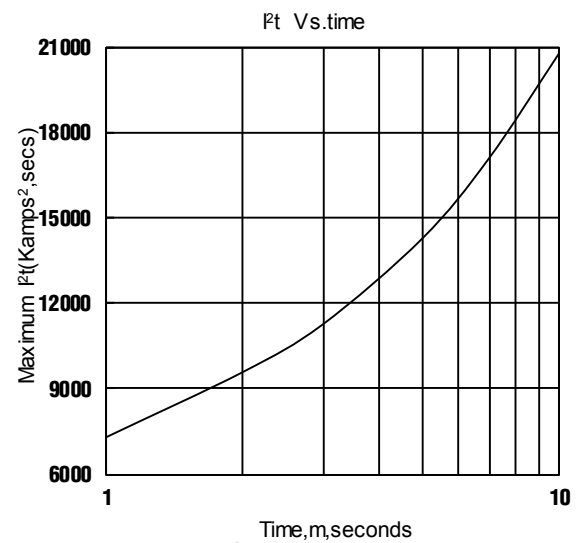


Fig.8

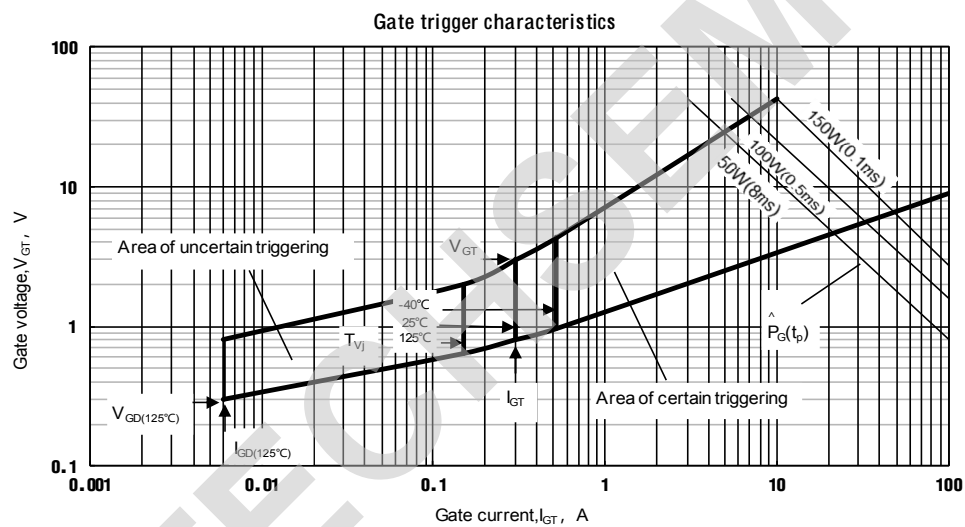
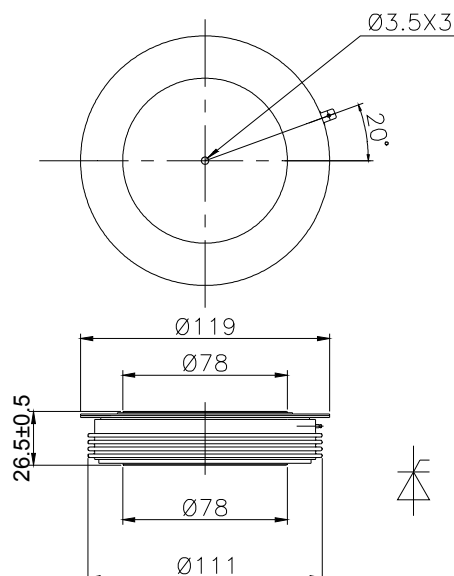


Fig.9

Outline:



TECHSEM reserves the right to change specifications without notice.