

# KK1000A-E

## FAST TURN-OFF THYRISTOR



### Features

- Interdigitated amplifying gate
- Fast switch and high di/dt
- Low switching loss

### Application

- Converter
- Chopper
- Induction heating

$I_{T(AV)}$	1000 A
$V_{DRM}/V_{RRM}$	800~1800V
$t_q$	16~35 $\mu$ s
$I_{TSM}$	12 KA
$I^2T$	720KA <sup>2</sup> S

Symb.		parameter	Test Conditions	$T_{J(c)}$ )	Value	Unit
Current Ratings	$I_{T(AV)}$	average on-state current	180° half sine wave 50Hz Double side cooled $T_{hs}=74^{\circ}C$	115	800	A
	$I_{TSM}$	Surge on-state current	10ms half sine wave $V_R=0.6V_{RRM}$	115	12	KA
	$I^2t$	$I^2t$ for fusing coordination		115	720	KA <sup>2</sup> S
Characteristics	$V_{DRM}$ $V_{RRM}$	Repetitive peak off-state voltage Repetitive peak reverse voltage	$V_{DRM}\&V_{RRM}$ tp=10ms $V_{DSM}\&V_{RSM}=V_{DRM}\&V_{RRM}+100V$	115	800-1800	V
	$I_{DRM}$ $I_{RRM}$	Repetitive peak current	$V_{DM}=V_{DRM}$ $V_{RM}=V_{RRM}$	115	Max.80	mA
	$V_{TO}$	Threshold voltage		115	Max.1.56	V
	$V_{TM}$	Peak on-state voltage	$I_{TM}=3000A, F=24KN$	25	Max.3.15	V
	$r_T$	On-state slop resistance		115	0.33	m $\Omega$
	$I_H$	Holding current	$V_A=12V, I_A=1A$	25	Min.20 Max.500	ma
Dynamic Parameters	dv/dt	Critical rate of rise of off-state voltage	$V_{DM}=67\%V_{DRM}$	115	Max.500	V/ $\mu$ s
	di/dt	Critical rate of rise of on-state current	$V_{DM}=67\%V_{DRM}$ to 800A, Gate pulse $t_r \leq 0.5\mu s, I_{GM}=1.5A$	115	Max.500	A/ $\mu$ s
	$t_q$	Circuit commutated turn-off time	$I_{TM}=800A, tp=1000\mu s, dv/dt=30V/\mu s$ $di/dt=-20A/\mu s, V_R=50V$	115	16-35	mA
	$I_{rm}$	Reverse recovery current	$I_{TM}=800A, tp=1000\mu s$ $di/dt=-20A/\mu s, V_R=50V$	115	Typ.100	A
	$t_{rr}$	Reverse recovery time		115	Typ.5.8	$\mu$ s
	$Q_{rr}$	Recovery charge		115	Typ.290 Max.320	$\mu$ c
Gate Parameters	$I_{GT}$	Gate trigger current	$V_A=12V, I_A=1A$	25	40-300	mA
	$V_{GT}$	Gate trigger voltage		25	0.9-3.0	V
	$V_{GD}$	Non-trigger gate voltage	$V_{DM}=67\%V_{DRM}$	115	Min.0.3	V

## Thermal & Mechanical Date

Symb.	parameter	Test Conditions	Value	Unit
$R_{th(j-h)}$	Thermal resistance Junction to heat sink	Double side cooled, clamping force 24N	0.024	°C/W
$F_m$	Mounting force		19-26	KN
$T_{stg}$	Stored temperature		-40--+140	°C
$W_t$	Weight		470	g

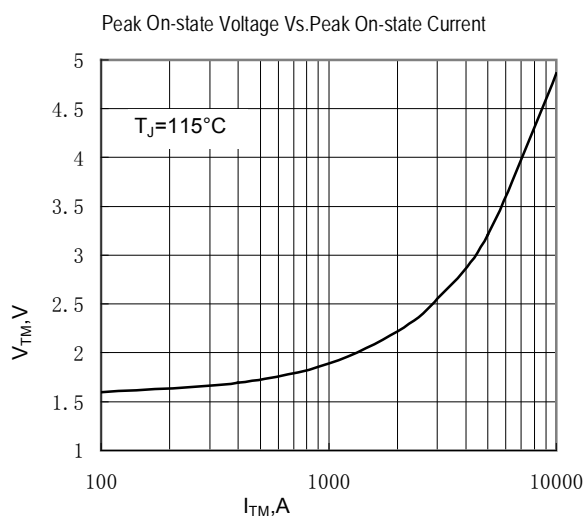


Fig.1

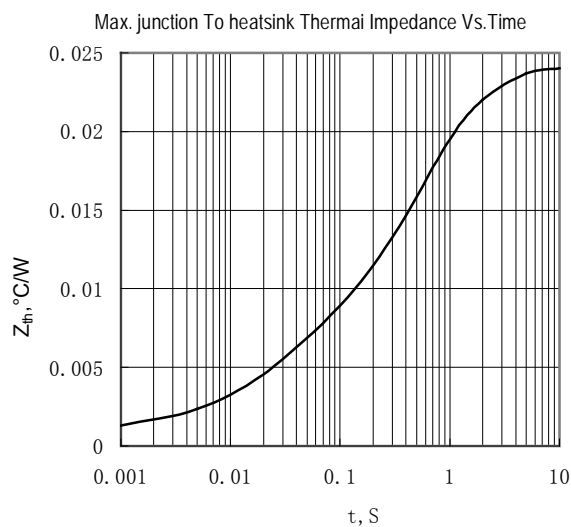


Fig.2

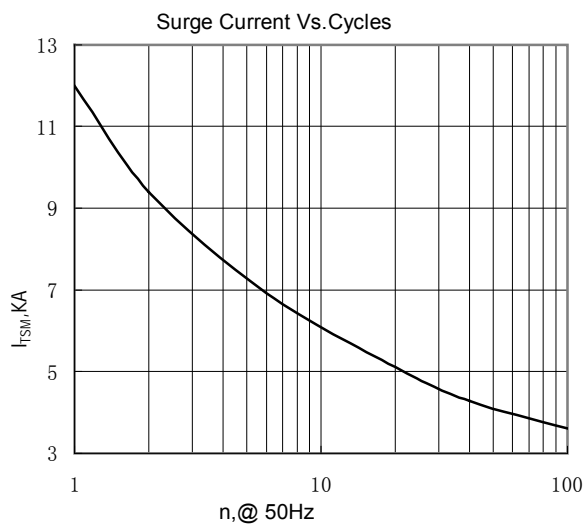


Fig.3

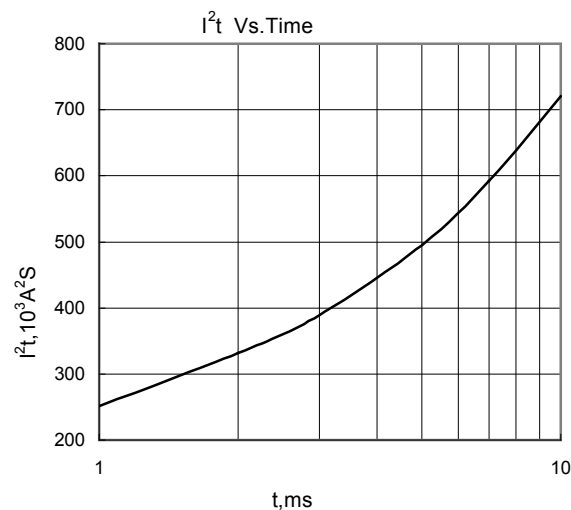


Fig.4

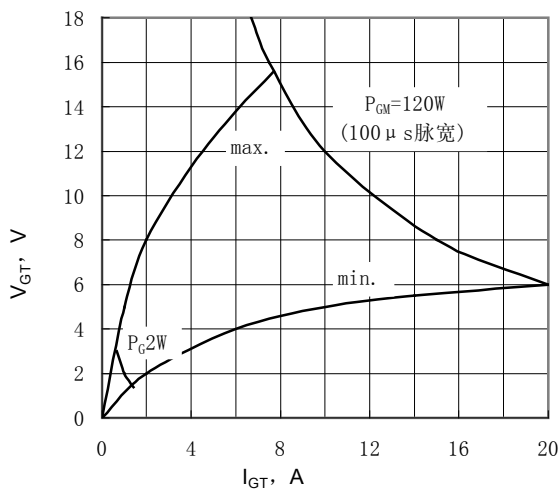


Fig.5

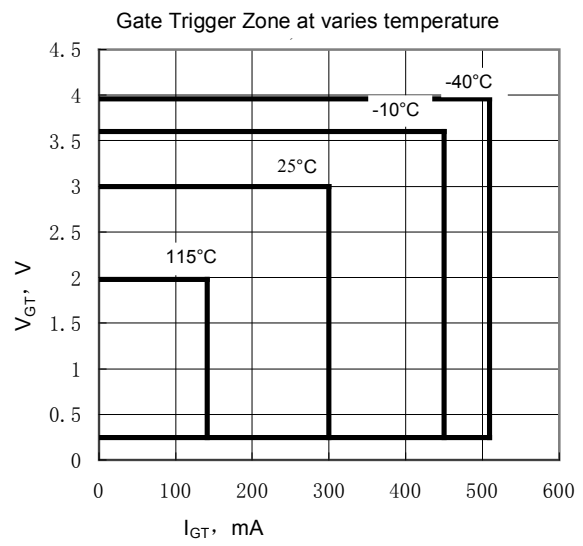
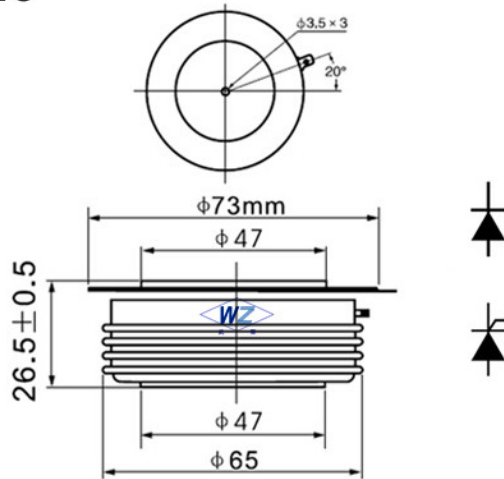


Fig.6

Dimensions:

C20



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