

# KK1800-Fast Switching Thyristor

Jiangsu Yangjie Runau Semiconductor Co.,Ltd

3200-3500 V<sub>DRM</sub>

\*\*\*\*\*

## HIGH POWER THYRISTOR FOR INVERTER APPLICATION

### Features:

- . All Diffused Structure
- . Amplifying Gate Configuration
- . Blocking capability up to 3500 volts
- . High dv/dt Capability
- . Pressure Assembled Device

## ELECTRICAL CHARACTERISTICS AND RATINGS

### Blocking-Off State

Device Type	V <sub>R</sub> RM (1)	V <sub>D</sub> RM (1)	V <sub>R</sub> SM (1)
KK1800/32	3200	3200	3300
KK1800/35	3500	3500	3600

**Gating**

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Peak gate power dissipation	$P_{GM}$		20		W	
Average gate power dissipation	$P_{G(AV)}$		4		W	
Gate trigger current	$I_{GT}$		200	150	mA	$V_D=12V; R_L=30\text{ohms}; T_j=+25^\circ\text{C}$
Gate trigger voltage	$V_{GT}$	0.70	3.0	2.5	V	$V_D=12V; R_L=30\text{ohms}; T_j=+25^\circ\text{C}$
Peak negative voltage	$V_{GRM}$		5		V	

**Dynamic**

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Delay time	$t_d$		3.0	2.5	$\mu\text{s}$	$I_{TM}=50\text{A}; V_D=67\%V_{DRM}$ Gate pulse: $V_G=30\text{V}; R_G=10\text{ohms};$ $t_r=0.1\mu\text{s}; t_p=20\mu\text{s}$
Turn-off time ( $V_R=-5\text{V}$ )	$t_q$		80		$\mu\text{s}$	$I_{TM}=1800\text{A}; di/dt=-10\text{A}/\mu\text{s};$ $V_R=50\text{V}; dV/dt=30\text{V}/\mu\text{s};$ $V_D=67\%V_{DRM}; T_j=125^\circ\text{C}$
Reverse recovery current	$Q_{rr}$				$\mu\text{C}$	$I_{TM}=1800\text{A}; di/dt=-10\text{A}/\mu\text{s};$ $V_R=50\text{V}; T_j=125^\circ\text{C}$

**THERMAL AND MECHANICAL CHARACTERISTICS AND RATINGS**

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	$T_j$	-40	+125		$^\circ\text{C}$	
Storage temperature	$T_{stg}$	-40	+140		$^\circ\text{C}$	
Thermal resistance-junction to case	$R_{\Theta(j-c)}$		0.01		$^\circ\text{C}/\text{W}$	Double sided cooled
Thermal resistance - case to heatsink	$R_{\Theta(c-s)}$		0.003		$^\circ\text{C}/\text{W}$	Double sided cooled
Mounting force	P	32	39	35	kN	
Weight	W			1.10	kg.	

\* Mounting surfaces smooth, flat and greased

