

KP970-POWER THYRISTOR

Jiangsu Yangjie Runau Semiconductor Co.,Ltd

4400-5200 V_{DRM}

FREE FLOATING TYPE THYRISTOR FOR PHASE CONTROL APPLICATIONS

Features:

- . Free-floating silicon technology
- . Low on-state and switching losses
- . Optimum power handling capability
- . Blocking capability up to 5200 volts
- . Distributed amplifying gate

ELECTRICAL CHARACTERISTICS AND RATINGS

Blocking - Off State

Device Type	V _R RM (1)	V _D RM (1)	V _R SM (1)
KP970/44	4400	4400	4500

KP970/46

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}		300		mA	$V_D = 12\text{ V}; R_L = 3\text{ ohms}; T_j = +25\text{ }^\circ\text{C}$
Gate- trigger voltage	V_{GT}	0.8	3.0		V	$V_D = 12\text{ V}; R_L = 3\text{ ohms}; T_j = +25\text{ }^\circ\text{C}$
Peak negative voltage	V_{GRM}		10		V	

Dynamic

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Delay time	t_d		3.0		μs	$I_{FG} = 2.0\text{ A}; V_D = 0.4V_{DRM}; t_r = 0.5\mu\text{s}$
Turn-off time (with $V_R = -5\text{ V}$)	t_q		800		μs	$I_{TM} = 1000\text{ A}; di/dt = -10\text{ A}/\mu\text{s}; V_R = 100\text{ V}; dV/dt = 30\text{ V}/\mu\text{s}; V_D = 67\%V_{DRM}; T_j = 125^\circ\text{C}$
Reverse recovery charge	Q_{rr}		2800		μC	$I_{TM} = 1000\text{ A}; di/dt = -1\text{ A/s}; V_R = 100\text{ V}; T_j = 125^\circ\text{C}$

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	+125		$^\circ\text{C}$	
Thermal resistance - junction to case	$R_{\square-c}$		0.022		$^\circ\text{C}/\text{W}$	Double sided cooled
Thermal resistance - case to heatsink	$R_{\square-s}$		0.005		$^\circ\text{C}/\text{W}$	Double sided cooled
Mounting force	P	20	24	22	kN	
Weight	W			0.60	kg	

* Mounting surfaces smooth, flat and greased

