R U N A U

KP5580- POWER THYRISTOR

Jiangsu Runau Electronics Manufacturing Co.,Ltd **3400-4200V_{DRM}**

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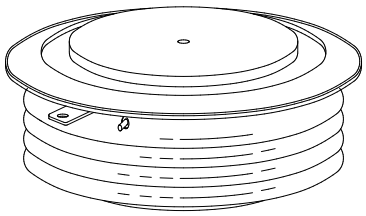
FREE FLOATING TYPE THYRISTOR FOR PHASE CONTROL APPLICATIONS

Features:

- . Free-floating silicon technology
- . Low on-state and switching losses
- . Optimum power handling capability
- . Blocking capability up to 4200 volts
- . Distributed amplifying gate

KT135dT



ELECTRICAL CHARACTERISTICS AND RATINGS

Blocking - Off State

Device Type	V_{RRM} (1)	V_{DRM} (1)	V_{RSM} (1)
KP5580/34	3400	3400	3500
KP5580/36	3600	3600	3700
KP5580/38	3800	3800	3900
KP5580/40	4000	4000	4100
KP5580/42	4200	4200	4300

V_{RRM} = Repetitive peak reverse voltage
V_{DRM} = Repetitive peak off state voltage
V_{RSM} = Non repetitive peak reverse voltage (2)

Repetitive peak reverse leakage and off state leakage	I_{RRM}/I_{DRM}	5 mA 200 mA (3)
Critical rate of voltage rise	dv/dt (4)	1000 V//μsec

Notes:
(1) All voltage ratings are specified for an applied 50Hz/60zHz sinusoidal waveform over the temperature range 0 to +125 °C.
(2) 10 msec. max. pulse width
(3) Maximum value for Tj = 125 °C.
(4) Minimum value for linear and exponential waveshape to 67% rated V_{DRM}. Gate open. Tj = 125 °C.
(5).The value of di/dt is established in accordance with EIA/NIMA Standard JB/T 8950.2-2013

Conducting - On State

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Average value of on-state current	$I_{T(AV)}$		5580		A	Sinewave,180° conduction,T_c=70°C
RMS value of on-state current	I_{TRMS}		8760		A	Nominal value
Peak one cycle surge (non repetitive) current	I_{TSM}		90000		A	10.0 msec (50Hz), sinusoidal wave-shape, 180° conduction, T_j = 125 °C
I square t	I^2t		$4x10^7$		A^2s	10 msec
Latching current	I_L		1000		mA	V_D = 12 V; R_L= 12 ohms
Holding current	I_H		200		mA	V_D = 12 V; I = 2.5 A
Peak on-state voltage	V_{TM}		1.40		V	I_{TM}=5000A;Tj =25°C
Threshold voltage, low-level	V_{TO}		0.9		V	Tj=125°C
Slope resistance, low-level	r_T		0.1		mΩ	3000A to 6000A
Critical rate of rise of on-state current	di/dt		200		A/μs	Repetition

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		mA	V_D =12 V;R_L = 3 ohms;T_j = +25 °C
Gate- trigger voltage	V_{GT}	0.70	2.5		V	V_D = 12 V;R_L = 3 ohms;T_j = +25 °C
Peak negative voltage	V_{GRM}		5		V	

Dynamic

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Delay time	t_d		3.0	2.5	μs	I_{TM} =100 A; V_D = 67% V_{DRM} Gate pulse: V_G = 30 V; R_G = 10 ohms; t_r = 0.1μs; t_p = 20μs
Turn-off time (with V_R = -5 V)	t_q			600	μs	I_{TM} =2000 A; di/dt =- 10 A/μs; V_R =50 V; dV/dt=30V/μs ; V_D= 67%V_{DRM};T_j=125°C
Reverse recovery charge	Q_{rr}			5000	μC	I_{TM} =2000A； di/dt=-10A/s; V_R=50 V; T_j=125℃

THERMAL AND MECHANICAL CHARACTERISTICS AND RATINGS

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	+125		°C	
Storage temperature	T_{stg}	-40	+125		°C	
Thermal resistance - junction to case	$R_{\Theta (j-c)}$		0.004		°C/W	Double sided cooled
Thermal resistance - case to heatsink	$R_{\Theta (c-s)}$		0.001		°C/W	Double sided cooled
Mounting force	P			120	kN	
Weight	W			3.60	kg	

* Mounting surfaces smooth, flat and greased