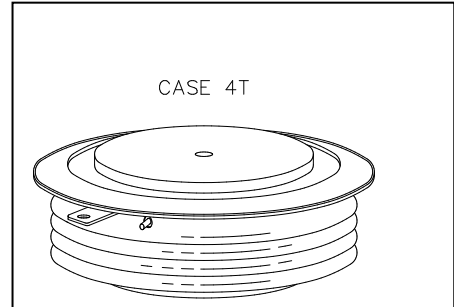


P/N: YZPST-KP1000A/6500V

HIGH POWER THYRISTOR FOR PHASE CONTROL APPLICATIONS

Features:

- . All Diffused Structure
- . Center Amplifying Gate Configuration
- . Guaranteed Maximum Turn-Off Time
- . High dV/dt Capability
- . Pressure Assembled Device



ELECTRICAL CHARACTERISTICS AND RATINGS

Blocking - Off State

V_{RRM} (1)	V_{DRM} (1)	V_{RSM} (1)
6500	6500	6600

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	I_{RRM} / I_{DRM}	40 mA 200mA (3)
Critical rate of voltage rise	dV/dt (4)	1000 V/ μ sec

Notes:

- All ratings are specified for $T_j=25^\circ\text{C}$ unless otherwise stated.
- (1) All voltage ratings are specified for an applied 50Hz/60zHz sinusoidal waveform over the temperature range -40 to $+125^\circ\text{C}$.
 - (2) 10 msec. max. pulse width
 - (3) Maximum value for $T_j = 125^\circ\text{C}$.
 - (4) Minimum value for linear and exponential waveshape to 80% rated V_{DRM} . Gate open. $T_j = 125^\circ\text{C}$.
 - (5) Non-repetitive value.
 - (6) The value of di/dt is established in accordance with EIA/NIMA Standard RS-397, Section 5-2-2-6. The value defined would be in addition to that obtained from a snubber circuit, comprising a 0.2 μF capacitor and 20 ohms resistance in parallel with the thristor under test.

Conducting - on state

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Max. Average value of on-state current	$I_{T(AV)}$		1000		A	Sinewave, 180° conduction $T_C=70^\circ\text{C}$
RMS value of on-state current	I_{TRMS}		1650		A	Nominal value
Peak one cpstcle surge (non repetitive) current	I_{TSM}		18		kA	10.0 msec (50Hz), sinusoidal wave-shape, 180° conduction, $T_j = 125^\circ\text{C}$
I square t	I^2t		1620		kA^2s	
Latching current	I_L		1500		mA	$V_D = 24\text{ V}; R_L = 12\text{ ohms}$
Holding current	I_H		500		mA	$V_D = 24\text{ V}; I = 2.5\text{ A}$
Peak on-state voltage	V_{TM}		2.65		V	$I_{TM} = 1000\text{A}; T_{vj}=125^\circ\text{C}$
Threshold voltage	V_{To}		1.24		V	$T_{vj}=125^\circ\text{C}$
Slope resistance	r_T		1.01		$\text{m}\Omega$	$T_{vj}=125^\circ\text{C}$
Critical rate of rise of on-state current (5, 6)	di/dt		500		A/ μs	Switching from $V_{DRM} \leq 1500\text{ V}$, non-repetitive
Critical rate of rise of on-state current (6)	di/dt		-		A/ μs	Switching from $V_{DRM} \leq 3500\text{ V}$

ELECTRICAL CHARACTERISTICS AND RATINGS (cont'd)
Gating

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Peak gate power dissipation	P_{GM}		50		W	$t_p = 40 \mu s$
Average gate power dissipation	$P_{G(AV)}$		10		W	
Peak gate current	I_{GM}		10		A	
Gate current required to trigger all units	I_{GT}		400		mA mA mA	$V_D = 6 V; R_L = 3 \text{ ohms}; T_j = -40^\circ C$ $V_D = 6 V; R_L = 3 \text{ ohms}; T_j = +25^\circ C$ $V_D = 6 V; R_L = 3 \text{ ohms}; T_j = +125^\circ C$
Gate voltage required to trigger all units	V_{GT}		- 2.6 -		V V V	$V_D = 6 V; R_L = 3 \text{ ohms}; T_j = -40^\circ C$ $V_D = 6 V; R_L = 3 \text{ ohms}; T_j = 0-125^\circ C$ $V_D = \text{Rated } V_{DRM}; R_L = 1000 \text{ ohms}; T_j = +125^\circ C$
Peak negative voltage	V_{GRM}		10		V	

Dynamic

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Delay time	t_d		-		μs	$I_{TM} = 1000 A; V_D = \text{Rated } V_{DRM}$ Gate pulse: $V_G = 20 V; R_G = 20 \text{ ohms}; t_r = 0.1 \mu s; t_p = 20 \mu s$
Turn-off time (with $V_R = -50 V$)	t_q		700		μs	$I_{TM} = 1000 A; di/dt = 1A/\mu s;$ $V_R \geq 200 V; \text{Re-applied } dV/dt = 20 V/\mu s$ linear to 67% $V_{DRM}; V_G = 0;$ $T_j = 125^\circ C; \text{Duty cpstcl} \geq 0.01\%$
Reverse recovery charge	Q_{rr}		-		μAs	$I_{TM} = 2000 A; di/dt = 1.5 A/\mu s;$ $V_R \geq 200V$

* For guaranteed max. value, contact factory.

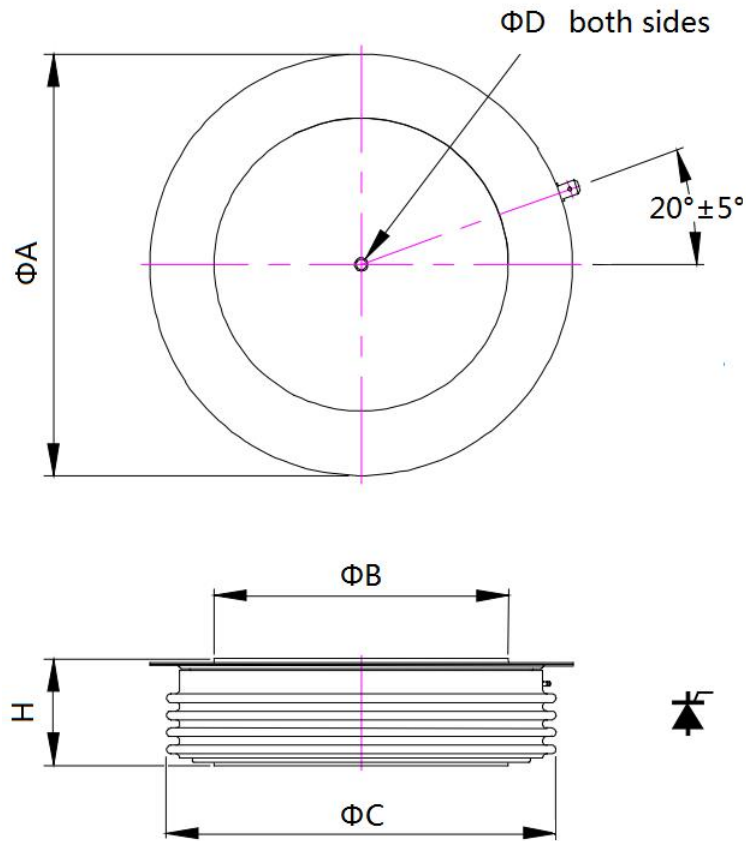
THERMAL AND MECHANICAL CHARACTERISTICS AND RATINGS

Parameter	Symbol	Min.	Max.	Typ.	Units	Conditions
Operating temperature	T_j	-40	+125		$^\circ C$	
Storage temperature	T_{stg}	-40	+125		$^\circ C$	
Thermal resistance - junction to case	$R_{\Theta(j-c)}$		0.014		$^\circ C / W$	Double sided cooled Single sided cooled
Thermal resistamce - case to sink	$R_{\Theta(c-s)}$		0.004		$^\circ C / W$	Double sided cooled * Single sided cooled *
Thermal resistance - junction to heatsink	$R_{\Theta(j-s)}$		-		K/kW	Double sided cooled * Single sided cooled *
Mounting force	P	27	34	-	kN	
Weight	W	-	-	-	g	

* Mounting surfaces smooth, flat and greased

Note : for case outline and dimensions, see case outline drawing in page 3 of this Technical Data

CASE OUTLINE AND DIMENSIONS.



Sym	A	B	C	D	H
mm	99	70	88	3.5×3	35±1