

DISC TYPE THYRISTOR

Features

- Center amplifying gate
- Metal case with ceramic insulator
- tested according to IEC standards

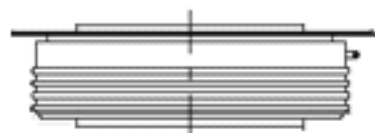
2500A

Typical Applications

- DC motor controls
- Controlled DC power supplies
- AC controllers

Major Ratings and Characteristics

Parameters	T2500A	Units
$I_{T(AV)}$	2500	A
@ T_{hs}	55	°C
$I_{T(RMS)}$	4500	A
I_{TSM} @ 50Hz	46000	A
@ 60Hz	48200	A
$I^2 t$ @ 50Hz	10580	KA ² s
@ 60Hz	9640	KA ² s
V_{DRM} / V_{RRM}	3000	V
T_q typical	200	μs
T_J range	- 40 to 125	°C



case style

ELECTRICAL SPECIFICATIONS

Voltage Ratings

Type number	Voltage Code	V_{RRM}/V_{DRM} , maximum repetitive peak reverse voltage V	V_{RSM} , maximum non- repetitive peak rev. voltage V	I_{RRM}/I_{DRM} max. @ $T_J = T_J$ max. mA
T2500A	24	2400	2500	250
	26	2600	2700	
	28	2800	2900	
	30	3000	3100	
	32	3200	3300	
	35	3500	3600	

On-state Conduction

Parameter	T2500A	Units	Conditions
$I_{T(AV)}$ Maximum average on-state current @ Case temperature	2500	A	180° conduction, half sine wave
	55	°C	double side (single side) cooled
$I_{(RMS)}$ Maximum RMS on-state current	4600	A	DC @25 ° heatsink temperature double side cooled
I_{TSM} Maximum peak, one-cycle non-repetitive surge current	4600	A	t = 10ms No voltage
	48200		t = 8.3ms reapplied
	36800		t = 10ms 50% V_{RRM}
	38500		t = 8.3ms reapplied
$I^2 t$ Maximum $I^2 t$ for fusing	10580	KA ² s	t = 10ms No voltage
	9640		t = 8.3ms reapplied
	6770		t = 10ms 50% V_{RRM}
	6150		t = 8.3ms reapplied
V_{TM} Maximum on-state or forward	1.50	V	$I_{pk}=29\ 00A$, $T_c=25^\circ$
I_L Typical latching current	300	mA	$T_J = 25^\circ C$, $V_D=5V$

Switching

Parameter	T2500A	Units	Conditions
di/dt Max. repetitive 50Hz (no repetitive) rate of rise of turned-on current	300	A/μs	From 67% V_{DRM} gate drive 20V, 20Ω, $t_r = 1\mu s$ $T_J = T_J$ max.
t_d Maximum delay time	2.0	μs	Gate drive 30V, 15Ω, $V_g=67\% V_{DRM}$ $T_J=25^\circ C$ Rise time 0.5 μs
T_q Typical turn-off time	200	μs	$I_r=80\ 0A$, $t_p=1ms$, $T_J = T_J$ max, di/dt = 20A/μs, $V_R = 50V$ dv/dt = 20V/μs, $V_{DR}=67\% V_{DRM}$

Blocking

Parameter	T2500A	Units	Conditions
dv/dt Maximum critical rate of rise of off-state voltage	500	V/ μ s	$T_J = T_J$ max linear to 67% rated V_{DRM}
I_{DRM} Max. peak reverse and off-state leakage current	250	mA	$T_J = 1\ 25^\circ\text{C}$, rated V_{DRM}/V_{RRM} applied

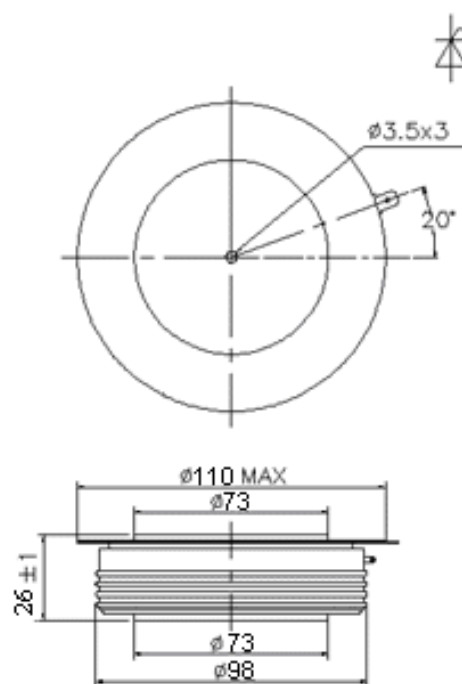
Triggering

Parameter	T2500A	Units	Conditions
P_{GM} Maximum peak gate power	150	W	$t_p = 100\ \mu\text{s}$
$P_{G(AV)}$ Maximum average gate power	10		
I_{GM} Max. peak positive gate current	30	A	Anode positive with respect to cathode
$+V_{GM}$ Maximum peak positive gate voltage	30	V	Anode positive with respect to cathode
$-V_{GM}$ Maximum peak negative gate voltage	0.25		Anode positive with respect to cathode
I_{GT} Maximum DC gate current required to trigger	400	mA	$T_C = 25^\circ\text{C}$, $V_{DRM}=5\text{V}$
V_{GT} Maximum gate voltage required to trigger	4	V	$T_C = 25^\circ\text{C}$, $V_{DRM}=5\text{V}$
V_{GD} DC gate voltage not to trigger	0.25	V	$T_C = 1\ 25^\circ\text{C}$ Max. gate current/ voltage not to trigger is the max. value which will not trigger any unit with rated V anode-to-cathode applied

Thermal and Mechanical Specification

Parameter	T2500A	Units	Conditions
T_J Max. operating temperature	125	$^\circ\text{C}$	
T_{stg} Max. storage temperature range	-40 to 150		
R_{thJ-C} Thermal resistance, junction to case	0.019 0.0095	K/W	DC operation single side cooled DC operation double side cooled
$R_{th(C-h)}$ Thermal resistance, case to heatsink	0.004 0.002		Single side cooled Clamping force 43KN with Double side cooled Mounting compound
F Mounting torque, $\pm 10\%$	43000	Nm	
wt Approximate weight	1250	g	

Outline Table



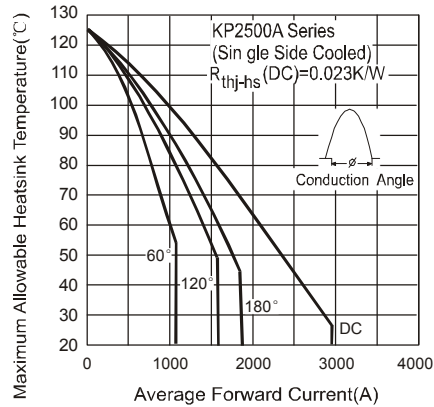


Fig.1-Current Ratings Characteristics

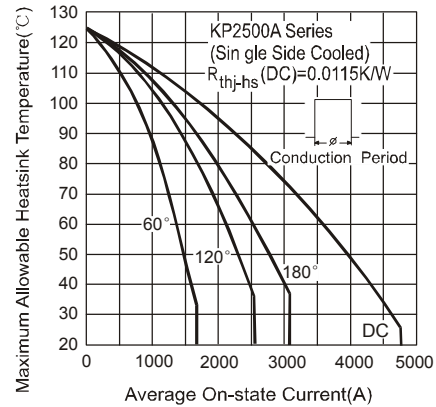


Fig.2-Current Ratings Characteristics

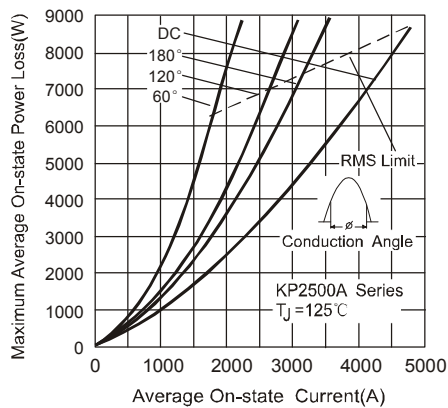


Fig.3-On-state Power Loss Characteristics

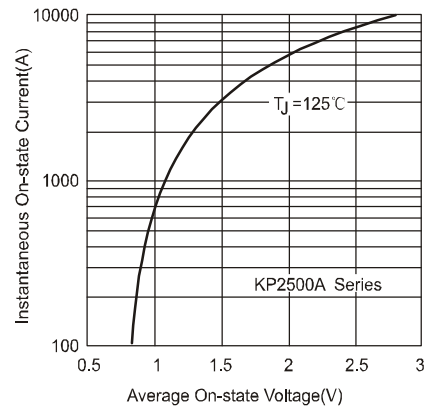


Fig.4-On-state Voltage Drop Characteristics

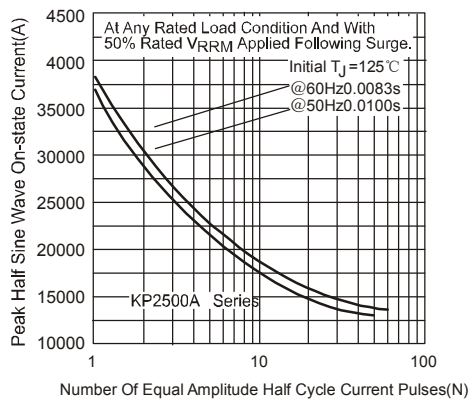


Fig.5-Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

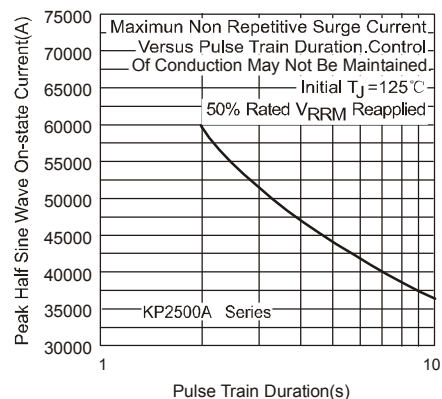


Fig.6-Maximum Non-Repetitive Surge Current
Single and Double Side Cooled

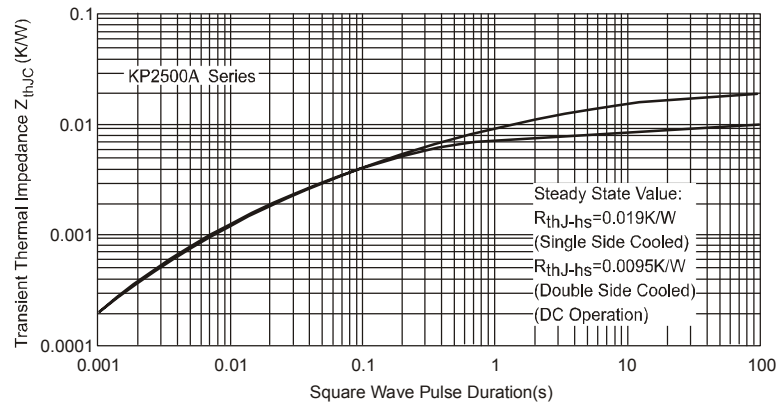


Fig.7-Thermal Impedance Z_{thJC} Characteristics