



Ruttonsha International Rectifier Ltd.

HIGH POWER THYRISTOR

INVERTER GRADE THYRISTOR

Hockey Puk Version B-PUK SERIES 750PB

Type : 750 PB 80 F To 750 PB 140 F

Features

- Low Switching loss at high frequency.
- 60 μ s maximum turn-off time with feedback diode.
- Involute, interdigitate gate

750A

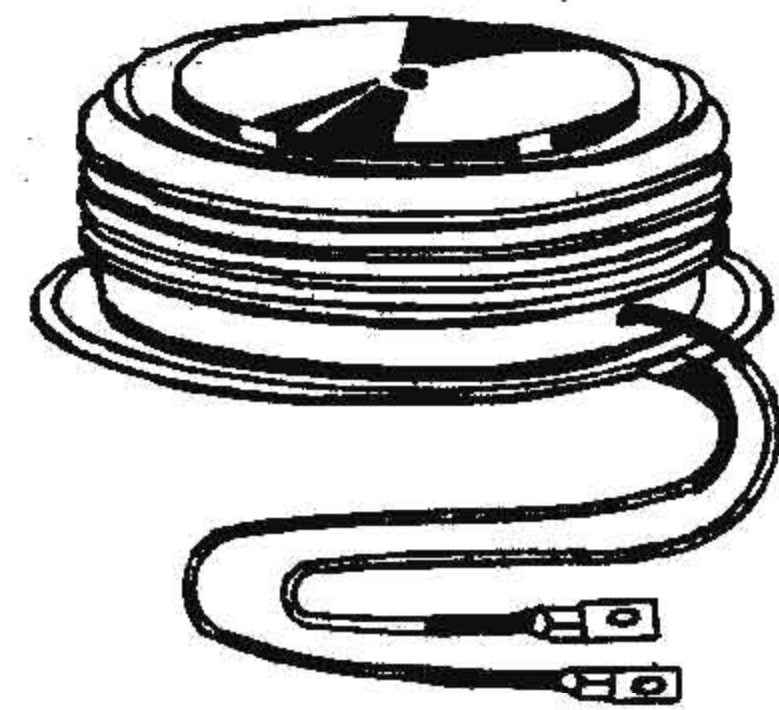
Typical Applications

- Inverters
- Choppers
- Induction heating
- All type of forced-Commutated converters

Major Ratings and Characteristics :-

PARAMETERS	750PB...F	UNITS
$I_{T(AV)}$	750	A
@ T_{hs}	55	$^{\circ}$ C
$I_{T(RMS)}$	1178	A
@ T_{hs}	55	$^{\circ}$ C
I_{TSM} @50Hz	9000	A
I^2t @50Hz	330	KA ² s
V_{DRM} / V_{RRM}	UP TO 1400	V
T_q typical	55	μ s
T_J	- 40 TO 125	$^{\circ}$ C

750 PB (B - PUK)



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Electrical Specifications

Voltage Ratings

Type Number	Voltage Code	V_{DRM}/V_{RRM} , max repetitive peak voltage V	V_{RSM} , maximum non-repetitive peak voltage V	I_{DRM}/I_{RRM} max. mA	
				25 ⁰ C	125 ⁰ C
	80	800	850	10	75
750PB...F	100	1000	1050	10	75
	120	1200	1250	10	75
	140	1400	1450	10	75

On-state Conduction

	Parameter	750PB..F	Units	Conditions
$I_{T(AV)}$	Max. average on-state current	750	A	180° conduction, half sine wave
	@ Heatsink temperature	55	°C	double side cooled
$I_{T(RMS)}$	Max RMS on-state current	1178	A	DC @ 55 °C heatsink temperature double side cooled
$V_{T(TO)}$	Value of threshold voltage	Max. 1.03	V	$T_{vj} = T_{vj}$ max.
r_t	Value of on-state slope resistance	Max. 0.70	mΩ	$T_{vj} = T_{vj}$ max.
I_{RM}	Peak reverse recovery current	Max. 170	A	$T_{vj} = T_{vj}$ max.; $i_{TM} = I_{TAVM}$, $-diT/dt = 25A/\mu s$, $V_R = 0.5V_{RRM}$, $V_{RM} = 0.8V_{RRM}$
V_{TM}	Max. on-state voltage	2.21	V	$I_{TM} = 1000A$, $T_J = T_J$ max., Duty Cycle $\leq 0.01\%$

Switching

	Parameter	750PB...F	Units	Conditions
di/dt	Max. Repetitive rate of rise of turned-on current	100	A/ μs	$T_J = T_J$ max., $V_{DRM} = \text{rated } V_{DRM}$
t_d	Typical delay time	1.5	μs	Switching from 1000V 20V, 10 ohm Gate 0.5 μs rise time, $T_J = 25^\circ C$
t_q	Typical turn-off time	55	μs	$T_{vj} = T_{vj}$ max. 1000A $v_{RM} = -50 V$, $v_{DM} = 1000V$, $dvD/dt = 50 V/\mu s$, $-diT/dt = 25A/\mu s$

Blocking

	Parameter	750PB...F	Units	Conditions
dv/dt	Min. critical rate of rise of off-state voltage	500	V/ μs	$T_J = T_J$ max. linear to 80% rated V_{DRM}
I_{RRM}	Max. peak reverse and off-state leakage current	75	mA	$T_J = T_J$ max., rated V_{DRM}/V_{RRM} applied

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Triggering

Parameter	750PB..F	Units	Conditions
I_{GT} Max. DC gate current required to trigger	TYP. 150	mA	$T_J = 25^\circ\text{C}$, $V_D = 10\text{ V dc}$ $R_L = 3\text{ ohm}$
V_{GT} Max. DC gate voltage required to trigger	3.0	V	$T_J = 25^\circ\text{C}$, $V_D = 10\text{ V dc}$ $R_L = 3\text{ ohm}$

Thermal and Mechanical Specifications

Parameter	750PB..F	Units	Conditions
T_J Max. operating temperature	125	$^\circ\text{C}$	
T_{stg} Max. storage temperature range	- 40 to +125	$^\circ\text{C}$	
R_{thJ-hs} Max. thermal resistance, junction to heat sink	0.04	$^\circ\text{C/W}$	DC operation double side cooled
F Mounting force, $\pm 10\%$	14.7 (1500)	KN (Kg.)	
Case style	TO-200AC (B-PUK)		

Outline Table

