



# Ruttonsha International Rectifier Ltd.

## HIGH POWER THYRISTOR

### INVERTER GRADE THYRISTOR

#### Hockey Puk Version B-PUK SERIES 930PB

Type : 930 PB 80 F To 930 PB 120 F

#### Features

- Low Switching loss at high frequency.
- 25  $\mu$ s typical turn-off time with feedback diode.
- Involute, interdigitate gate

930A

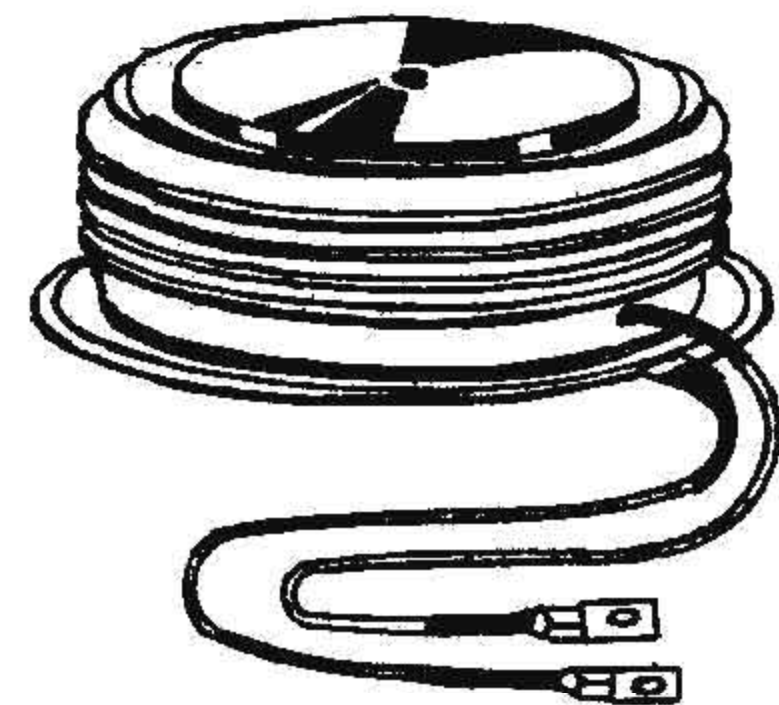
#### Typical Applications

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

#### Major Ratings and Characteristics :-

PARAMETERS	930PB...F	UNITS
$I_{T(AV)}$	930	A
@ $T_{hs}$	55	$^{\circ}$ C
$I_{T(RMS)}$	1460	A
@ $T_{hs}$	55	$^{\circ}$ C
$I_{TSM}$ @50Hz	9000	A
$I^2t$ @50Hz	400	KA <sup>2</sup> s
$V_{DRM}$ / $V_{RRM}$	800 to 1200	V
$T_q$ typical	25	$\mu$ s
$T_J$	125	$^{\circ}$ C

#### 930 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 <sup>0</sup> C	125 <sup>0</sup> C
	80	800	850	10	75
<b>930PB...F</b>	100	1000	1050	10	75
	120	1200	1250	10	75

### On-state Conduction

	Parameter	930PB...F	Units	Conditions
$I_{T(AV)}$	Max. average on-state current	930	A	180° conduction, half sine wave
	@ Heatsink temperature	55	°C	double side cooled
$I_{T(RMS)}$	Max RMS on-state current	1460	A	DC @ 55°C heatsink temperature double side cooled
$V_{TM}$	Max. on-state voltage	2.9	V	$I_T = 2000A$ , $T_J = T_J \text{ max.}$ , Duty Cycle $\leq 0.01\%$
$V_{TO}$	Threshold Voltage	Max. 1.5	V	$T_J = T_J \text{ max.}$
$r_T$	Slope resistance	Max. 0.15	mΩ	$T_J = T_J \text{ max.}$

### Switching

	Parameter	930PB...F	Units	Conditions
di/dt	Max. Repetitive rate of rise of turned-on current	100	A/μs	$T_J = T_J \text{ max.}$ , $V_{DRM} = \text{rated } V_{DRM}$
$t_q$	Typical turn-off time	Typ. 25	μs	$T_J = T_J \text{ max.}$ , $I_T = 1000A$ , $V_R = 50V$ , $di/dt = 60A/\mu s$ 80% $V_{DRM}$ Reapplied, $dv/dt = 200 V/\mu s$ , Gate bias = open During Turn-Off, Interval = 0V, 100 ohm, Duty Cycle $\leq 0.01\%$

### Blocking

	Parameter	930PB...F	Units	Conditions
dv/dt	Min. critical rate of rise of off-state voltage	500	V/μs	$T_J = T_J \text{ max.}$ linear to 80% rated $V_{DRM}$
$I_{RRM}$	Max. peak reverse and off-state	75	mA	$T_J = T_J \text{ max.}$ , rated $V_{DRM}/V_{RRM}$ applied
$I_{DRM}$	leakage current			

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## Triggering

Parameter	930PB...F	Units	Conditions
$P_{GM}$ Maximum peak gate power	10.0	W	$T_J = T_{Jmax.}, t_p \leq 5 \text{ ms}$
$P_{G(AV)}$ Maximum average gate power	2.0	W	$T_J = T_{Jmax.}, f = 60\text{Hz},$
$I_{GT}$ Max. DC gate current required to trigger	150 MAX.	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	930PB...F	Units	Conditions
$T_J$ Max. operating temperature	125	$^\circ\text{C}$	
$T_{stg}$ Max. storage temperature range	- 40 to +125	$^\circ\text{C}$	
$R_{thJ-C}$ Max. thermal resistance, junction to case	0.04	$^\circ\text{C/W}$	DC operation double side cooled
F Mounting force, $\pm 10\%$	14700	N	
Case style	B-PUK		

### Outline Table

