



# Ruttonsha International Rectifier Ltd.

## HIGH POWER THYRISTOR

### INVERTER GRADE THYRISTOR

#### Hockey Puk Version R-PUK SERIES 2600PR

Type : 2600PR 140 F TO 2600PR 250 F

#### Features

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

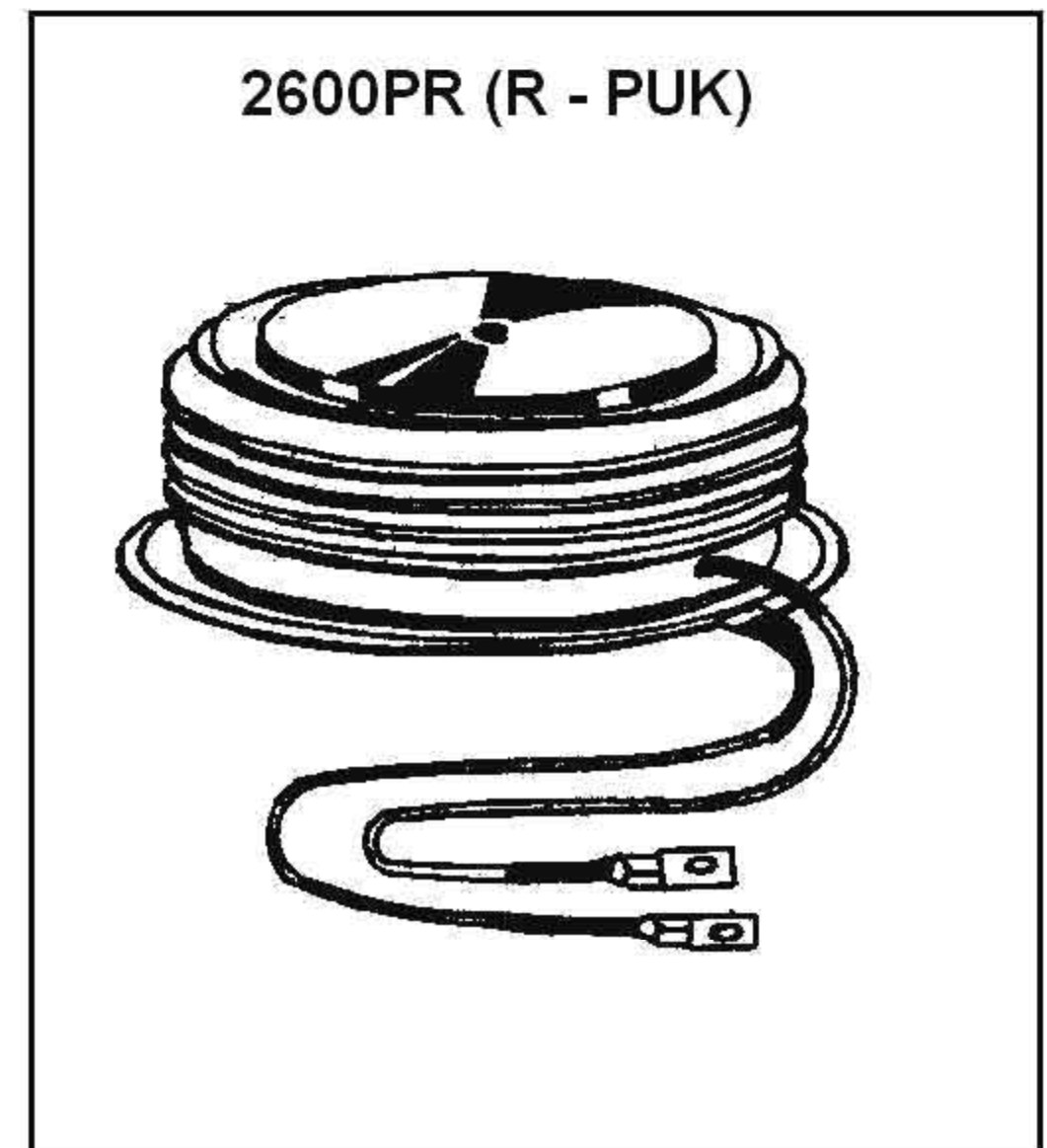
2600A

#### Typical Applications

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

#### Major Ratings and Characteristics :-

PARAMETERS	2600PR...F	UNITS
$I_{T(AV)}$	2600	A
@ $T_{hs}$	55	°C
$I_{T(RMS)}$	4082	A
@ $T_{hs}$	55	°C
$I_{TSM}$ @50Hz	38000	A
$I^2t$ @50Hz	7220	KA <sup>2</sup> s
$V_{DRM} / V_{RRM}$	UP to 2500	V
$T_q$ typical	60 to 80	µs
$T_J$	-40 to 125	°C



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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
	140	1400	1450	10	150
<b>2600 PR...F</b>	160	1600	1650	10	150
	180	1800	1850	10	150
	200	2000	2050	10	150
	250	2500	2550	10	150

### On-state Conduction

	Parameter	2600 PR...F	Units	Conditions
$I_{T(AV)}$	Max. average on-state current	2600	A	180° conduction, half sine wave
	@ Heatsink temperature	55	°C	double side cooled
$I_{T(RMS)}$	Max RMS on-state current	4082	A	DC @ 55°C heatsink temperature double side cooled
$V_{T(TO)}$	Value of threshold voltage	Max. 1.31	V	$T_{vj} = T_{vj}$ max.
$r_t$	Value of on-state slope resistance	Max. 0.14	mΩ	$T_{vj} = T_{vj}$ max.
$I_{RM}$	Pak reverse recovery current	Max. 200	A	$T_{vj} = T_{vj}$ max., $i_{TM} = I_{T(AV)}$ , $-di/dt = 25A/\mu s$ , $V_R = 0.5V_{RRM}$ , $V_{RM} = 0.8V_{RRM}$
$V_{TM}$	Max. on-state voltage	1.55	V	$I_{TM} = 2000A$ , $T_J = T_J$ max., Duty Cycle $\leq 0.01\%$

### Switching

	Parameter	2600 PR...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	2.0	μs	Switching from 140V, 20V, 10 ohm Gate 0.5 μs rise time, $T_J = 25^\circ C$
$t_q$	Typical turn-off time	60 to 80	μs	$T_{vj} = T_{vj}$ max. 1000A $v_{RM} = -50V$ , $v_{DM} = 1000V$ , $dv/dt = 50V/\mu s$ , $-di/dt = 25A/\mu s$

### Blocking

	Parameter	2600 PR...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 $V_{DRM}$
$I_{RRM}$ $I_{DRM}$	Max. peak reverse and off-state leakage current	150	mA	$T_J = T_J$ max., rated $V_{DRM}/V_{RRM}$ applied

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## Triggering

Parameter	2600 PR...F	Units	Conditions
$I_{GT}$ Max. DC gate current required to trigger	200	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	2600 PR...F	Units	Conditions
$T_J$ Max. operating temperature range	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	0.012	$^\circ\text{C/W}$	DC operation double side cooled
F Mounting force, $\pm 10\%$	43.0	KN	
Case style	(R-PUK)		

## Outline Table

