



# Ruttonsha International Rectifier Ltd.

## SILICON RECTIFIERS

### TYPE:R2000L...F SERIES

#### FAST RECOVERY DIODES

##### Features

- High power FAST recovery diode series
- High voltage ratings up to 4500V
- High current capability
- Optimized turn on and turn off characteristics
- Low forward recovery
- Fast and soft reverse recovery
- Press-puk encapsulation
- Maximum junction temperature 150°C

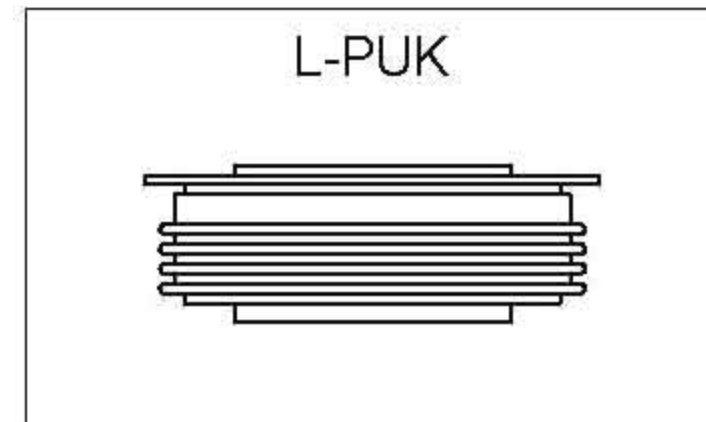
##### Typical Applications

- Snubber diode for GTO
- High voltage free-wheeling diode
- Fast recovery rectifier applications

#### Major Ratings and Characteristics

Parameters	R2000 L..F	Units
$I_{F(AV)}$	1995	A
@ $T_{hs}$	55	°C
$I_{F(RMS)}$	3825	A
@ 50Hz	3132	A
$V_{RRM}$ range	2000 to 4500	V
$t_{tr}$	7	μs
$T_J$	- 40 to 150	°C

#### Hockey Puk Version



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## R2000L...F Series

### ELECTRICAL SPECIFICATIONS

#### Voltage Ratings

Type number	Voltage Code	$V_{RRM}$ , maximum repetitive peak reverse voltage V	$V_{RSM}$ , maximum non-repetitive peak rev. voltage V	$I_{RRM}$ max. @ $T_J = T_J$ max. mA
R2000L..F	20	2000	2100	75
	24	2400	2500	
	28	2800	2900	
	32	3200	3300	
	36	3600	3700	
	40	4000	4100	
	45	4500	4600	

#### Forward Conduction

Parameter	R2000L..F	Units	Conditions
$I_{F(AV)}$ Max. average forward current @ heatsink temperature	1995 55	A °C	180° conduction, half sine wave Double side cooled
$I_{F(RMS)}$ Max. RMS forward current	3132	A	@ 55°C heatsink temperature double side cooled
$I_{FSM}$ Max. peak, one-cycle forward, non-repetitive surge current	23600	A	t = 10ms  Sinusoidal half wave, Initial $T_J = T_J$ max.
$I^2t$ Maximum $I^2t$ for fusing	2780	KA <sup>2</sup> s	t = 10ms
$I^2\sqrt{t}$ Maximum $I^2\sqrt{t}$ for fusing	27800	KA <sup>2</sup> $\sqrt{s}$	t = 0.1 to 10ms, no voltage reapplied
$V_{F(TO)}$ Threshold voltage	2.35	V	$T_J = T_J$ max.
$r_f$ Forward slope resistance	0.265	m $\Omega$	$T_J = T_J$ max.
$V_{FM}$ Max. forward voltage drop	2.95	V	$I_{pk} = 2100A$ , $T_J = T_J$ max, $t_p = 10ms$ sinusoidal wave
$t_{rr}$ Reverse recovery time	7	us	IFM=1000A, di/dt=100

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## R2000L...F Series

### Thermal and Mechanical Specifications

Parameter	R2000L..F	Units	Conditions
T <sub>J</sub> Max. junction operating temperature range	-40 to 150	°C	
T <sub>stg</sub> Max. storage temperature range	-40 to 150		
R <sub>thJ-hs</sub> Max. thermal resistance, case junction to heatsink	0.013	K/W	DC operation double side cooled
F Mounting force, ± 10%	35 to 43	KN	
wt Approximate weight	850	g	
Case style	L-PUK		See Outline Table

### Ordering Information Table

Device Code													
	<table border="1" style="margin: auto;"> <tr> <td style="padding: 5px;">R</td> <td style="padding: 5px;">2000</td> <td style="padding: 5px;">L</td> <td style="padding: 5px;">45</td> <td style="padding: 5px;">C</td> <td style="padding: 5px;">F</td> </tr> <tr> <td style="text-align: center;">①</td> <td style="text-align: center;">②</td> <td style="text-align: center;">③</td> <td style="text-align: center;">④</td> <td style="text-align: center;">⑤</td> <td style="text-align: center;">⑥</td> </tr> </table>	R	2000	L	45	C	F	①	②	③	④	⑤	⑥
R	2000	L	45	C	F								
①	②	③	④	⑤	⑥								
<b>1</b>	- R = Diode												
<b>2</b>	- Essential part number												
<b>3</b>	- L = PUK												
<b>4</b>	- Voltage code: Code x 100 = V <sub>RRM</sub> (See Voltage Ratings table)												
<b>5</b>	- C = Ceramic Puk												
<b>6</b>	- F = Fast recovery												

# SILICON RECTIFIERS

## R2000L...F Series

Outline Table

