



# Ruttonsha International Rectifier Ltd.

## SILICON RECTIFIERS

### TYPE: R 990K...CF Series

Hockey Puk Version

#### FAST RECOVERY DIODES

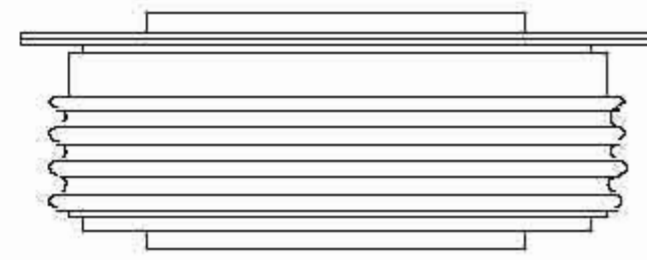
##### Features

- High power FAST recovery diode series
- High current capability
- Optimized turn on and turn off characteristics
- Low forward recovery
- Fast and soft reverse recovery
- Press-puk encapsulation
- Case style : DO-200AC (K-PUK)
- Maximum junction temperature 150°C

##### Typical Applications

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

**R990K**



case style DO-200AC (K-PUK)

#### Major Ratings and Characteristics

Parameters	R 990K...CF	Units
$I_{F(AV)}$	990	A
$@ T_{hs}$	55	°C
$I_{F(RMS)}$	1555	A
$I_{FSM} @ 50Hz$	19000	A
$V_{RRM}$	3000 to 4500	V
$t_{rr}$	5.0	μs
$@ T_J$	25	°C
$T_J$	-40 to 125	°C

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### 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
R 990K...CF	300	3000	3100	100
	320	3200	3300	
	340	3400	3500	
	360	3600	3700	
	380	3800	3900	
	400	4000	4100	
	420	4200	4300	
	440	4400	4500	
	450	4500	4600	

#### Forward Conduction

Parameter	R 990K...CF	Units	Conditions
$I_{F(AV)}$ Max. average forward current @ heatsink temperature	990 55	A °C	180° conduction, half sine wave Double side cooled
$I_{F(RMS)}$ Max. RMS forward current	1555	A	@ 55°C heatsink temperature double side cooled
$I_{FSM}$ Max. peak, one-cycle forward, non-repetitive surge current	19000	A	$t = 10ms$ Sinusoidal half wave, Initial $T_J = T_J$ max.
$I^2t$ Maximum $I^2t$ for fusing	1810	KA <sup>2</sup> s	$t = 10ms$
$V_{F(TO)}$ Threshold voltage	1.50	V	$T_J = T_J$ max.
$r_f$ Forward slope resistance	0.80	mΩ	$T_J = T_J$ max.
$V_{FM}$ Max. forward voltage drop	2.90	V	$I_{pk} = 2000A$ , $T_J = T_J$ max, $t_p = 10ms$ sinusoidal wave
$t_{rr}$ Reverse Recovery time	5.0	us	IFM=1000A, di/dt=100A/us

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### Thermal and Mechanical Specifications

Parameter	R990K...CF	Units	Conditions
T <sub>J</sub> Max. junction operating temperature range	-40 to 125	°C	
T <sub>stg</sub> Max. storage temperature range	-40 to 150		
R <sub>thJ-hs</sub> Max. thermal resistance, case junction to heatsink	0.020	K/W	DC operation double side cooled
F Mounting force, ± 10%	22250 (2250)	N (Kg)	
wt Approximate weight	425	g	
Case style	K-PUK		See Outline Table

### Ordering Information Table

Device Code																			
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 10px;">R</td> <td style="padding: 2px 10px;">990</td> <td style="padding: 2px 10px;">K</td> <td style="padding: 2px 10px;">45</td> <td style="padding: 2px 10px;">C</td> <td style="padding: 2px 10px;">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	990	K	45	C	F	1	2	3	4	5	6						
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## R 990K...CF Series

Outline Table

