Ruttonsha International Rectifier Ltd.

STANDARD RECOVERY DIODES

High Power Diodes
Hockey Puk Version
R4500 K...C Series

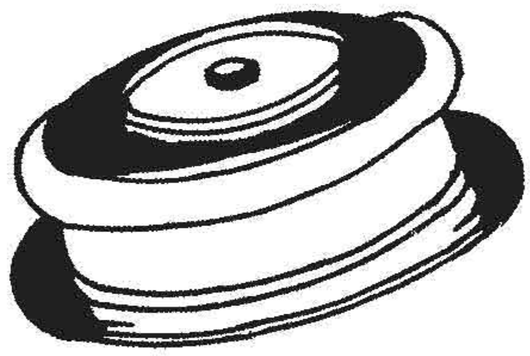
FEATURES

- *Wide current range*
- *High surge current capabilities*
- *Case style DO-200AC (K-PUK)*

TYPICAL APPLICATIONS

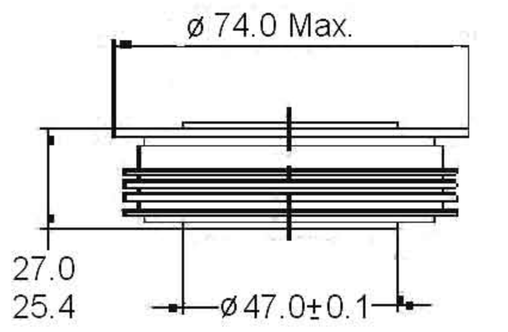
- *Converters*
- *High power drives*
- *Power supplies*
- *Traction Application*

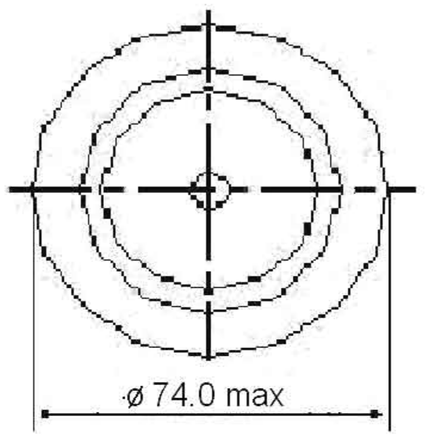
R4500K (K - PUK)



MAJOR RATINGS & CHARACTERISTICS

Parameters		R4500K	Units
$I_{F(AV)}$		4540	A
	@ T_{hs}	55	°C
$I_{F(RMS)}$		7127	A
	@ T_{hs}	55	°C
I_{FSM}	@ 50 Hz	44000	A
I^2t	@ 50 Hz	9680	KA^2s
V_{RRM} range		300 to 600	V
T_J		-40 to 160	°C





All dimension in millimeters

STANDARD RECOVERY DIODES

R4500K

ELECTRICAL SPECIFICATION

VOLTAGE RATINGS

Type Number	Voltage Code	V_{RRM} , max. repetitive peak reverse voltage V	V_{RRM} , max. non- repetitive peak reverse voltage V	I_{DRM} max. @ $T_J = T_J$ max. mA
R4500K	03	300	350	50
	04	400	450	
	06	600	650	

FORWARD CONDUCTION

	Parameter	R4500K	Units	Conditions	
$I_{F(AV)}$	Max. average Forward current	4540	A	180^0 conduction, half sine wave	
	@ heat sink temperature	55	^0C	double side cooled	
$I_{F(RMS)}$	Max. RMS Forward current	7127		@55^0C heat sink temperature (double side cooled)	
I_{FSM}	Max. peak one cycle Forward non-repetitive surge current	44000	A	t = 10ms	Sinusodial half wave, Initial $T_J = T_J$ max.
I^2t	Maximum I^2t for fusing	9680	kA^2s	t = 10ms	
$I^2\sqrt{t}$	Maximum $I^2\sqrt{t}$ for fusing	96800	$kA^2\sqrt{s}$	t = 0.1 to 10ms. No voltage reapplied.	
V_F	Threshold voltage	0.76	V	$T_J = T_J$ max.	
r_{f1}	Low level value of Forward slope resistance	0.03	mΩ	$T_J = T_J$ max.	
I_{RM}	Reverse recovery current	50	A	di/dt = 1A/uS,I peak = 1000A, $T_J = T_J$ max.	
V_{FM}	Max. Forward voltage drop	1.02	V	I_{pk} = 3000A, $T_J = T_J$ max., t_p = 10ms sine pulse	

THERMAL AND MECHANICAL SPECIFICATION

	Parameter	R4500K	Units	Conditions
T_J	Max. operating temperature range	-40 to 160	^0C	
T_{stg}	Max. storage temperature range	-55 to 200		
R_{thJ-hs}	Max. thermal resistance, junction to heat sink	0.022	K/W	DC operation double side cooled
F	Mounting force, ±10%	22250 (2250)	N (kg)	
w t	Approximate weight	425	g	
	Case style	DO-200AC(K-PUK)		See outline