# Ruttonsha International Rectifier Ltd.

## STANDARD RECOVERY DIODES

## High Power Diodes
## Hockey Puk Version
## R1800 K...C Series

### Type:- R1800K...12C to R1800K...30C

R1800K (K-PUK)

## FEATURES

- *Wide current range*
- *High voltage ratings up to 3000V*
- *High surge current capabilities*
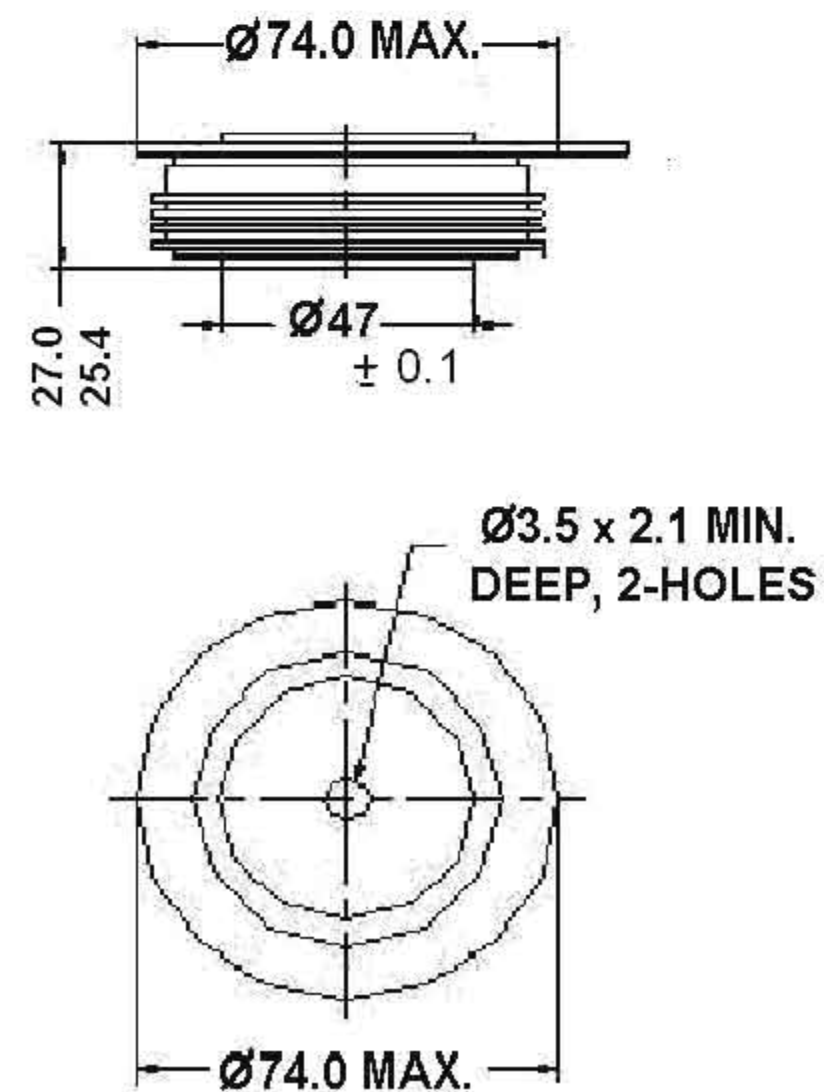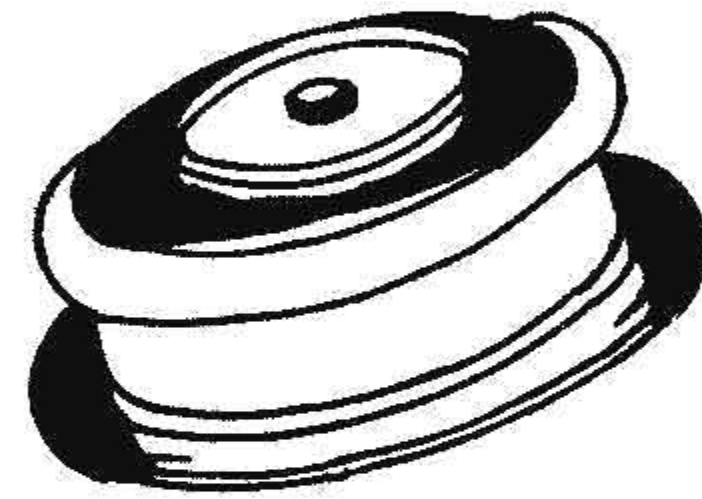- *Case style DO-200AC ( K-PUK)*

## TYPICAL APPLICATIONS

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

## MAJOR RATINGS & CHARACTERISTICS

| Parameters | | R1800K | Units |
|---|---|---|---|
| $I_{F(AV)}$ | | 1800 | A |
| | @ $T_{hs}$ | 55 | $^0C$ |
| $I_{F(RMS)}$ | | 2826 | A |
| | @ $T_{hs}$ | 55 | $^0C$ |
| $I_{FSM}$ | @ 50 Hz | 25000 | A |
| $I^2t$ | @ 50 Hz | 3125 | $KA^2s$ |
| $V_{RRM}$ range | | 1200 to 3000 | V |
| $T_J$ | | -40 to 160 | $^0C$ |

Ø74.0 MAX.

Ø47 ± 0.1

27.0
25.4

Ø3.5 x 2.1 MIN. DEEP, 2-HOLES

Ø74.0 MAX.

**All dimension in millimeters**

# STANDARD RECOVERY DIODES

## R1800 K...C

## 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 |
|---|---|---|---|---|
| R1800K | 12 | 1200 | 1300 | |
| | 14 | 1400 | 1500 | |
| | 18 | 1800 | 1900 | 80 |
| | 22 | 2200 | 2300 | |
| | 26 | 2600 | 2700 | |
| | 30 | 3000 | 3100 | |

## FORWARD CONDUCTION

| | Parameter | R1800K | Units | Conditions |
|---|---|---|---|---|
| $I_{F(AV)}$ | Max. average Forward current @ heat sink temperature | 1800 / 55 | A / $^0$C | $180^0$ conduction, half sine wave double side cooled |
| $I_{F(RMS)}$ | Max. RMS Forward current | 2826 | | @$55^0$C heat sink temperature double side cooled |
| $I_{FSM}$ | Max. peak one cycle Forward non-repetitive surge current | 25000 | A | t = 10ms |
| $I^2t$ | Maximum $I^2t$ for fusing | 3125 | $kA^2s$ | t = 10ms |
| | | | | Sinusodial half wave, Initial $T_J = T_J$ max. |
| $V_O$ | Threshold voltage | 0.85 | V | $T_J = T_J$ max. |
| $r_f$ | Forward slope resistance | 0.37 | $m\Omega$ | $T_J = T_J$ max. |
| $V_{FM}$ | Max. Forward voltage drop | 1.65 | V | $I_{pk}$ = 3800 A, RT, $t_p$ = 10ms sine pulse |

## THERMAL AND MECHANICAL SPECIFICATION

| | Parameter | R1800K | Units | Conditions |
|---|---|---|---|---|
| $T_J$ | Max. operating temperature range | -40 to 160 | $^0$C | |
| $T_{stg}$ | Max. storage temperature range | -55 to 160 | | |
| $R_{thJ-hs}$ | Max. thermal resistance, junction to heat sink | 0.023 | $^0$C/W | DC operation double side cooled |
| F | Mounting force, ±10% | 22250 (2250) | N (kg) | |
| w t | Approximate weight | 425 | g | |
| | Case style | DO-200ACK-PUK) | | See outline |