

## Technical data

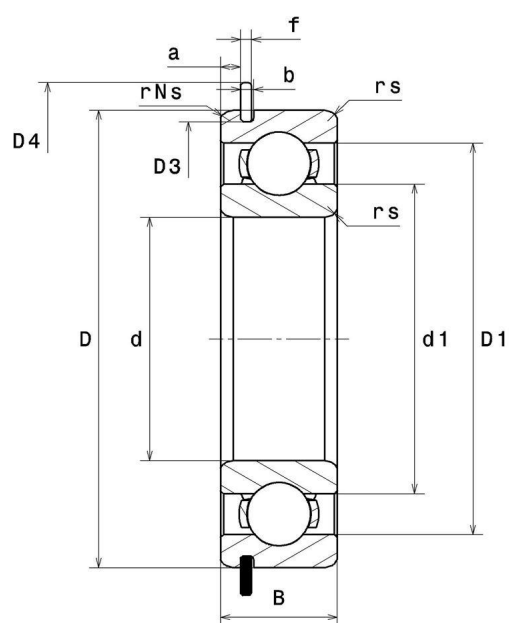
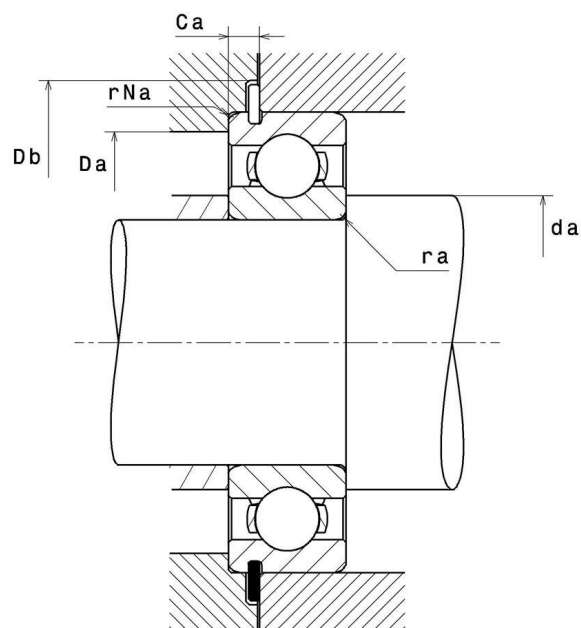
### 6209NR

Single row deep groove ball bearings



Deep groove ball bearing, radial contact, pressed steel cage, snap ring & groove on outer diameter, open

#### VISUAL (S)



# 6209NR

Single row deep groove ball bearings

## PRODUCT DEFINITION

|                                                    |          |
|----------------------------------------------------|----------|
| Brand                                              | SNR      |
| d - Internal diameter                              | 45 mm    |
| D - External diameter                              | 85 mm    |
| B - Bearing/Inner ring width                       | 19 mm    |
| d1 - External diameter inner ring                  | 54,5 mm  |
| D1 - Inner diameter outer ring                     | 75,6 mm  |
| a min - Min position Groove                        | 3,07 mm  |
| a max - Max position groove                        | 3,28 mm  |
| Ca min - Mini segment position                     | 4,67 mm  |
| Ca max - Max segment position                      | 4,98 mm  |
| rs - Min fillet radius                             | 1,1 mm   |
| rNs - Min fillet radius                            | 0,5 mm   |
| D3 - Max bottom groove diameter                    | 81,81 mm |
| b min - Min groove width                           | 1,9 mm   |
| b max - Max groove width                           | 2,2 mm   |
| r0 max - Max bottom groove radius                  | 0,6 mm   |
| D4 max - Max outer diameter of assembled stop ring | 91,6 mm  |
| f - Stop ring thickness                            | 1,65 mm  |
| Snap ring reference                                | R85      |
| Radial clearance class                             | CN       |
| Mass                                               | 0,412 kg |

## PRODUCT PERFORMANCE

|                  |             |
|------------------|-------------|
| C - Dynamic load | 34500000 mN |
|------------------|-------------|



**NTN Europe**

1 rue des Usines · BP 2017 · 74010 Annecy Cedex · France · Tel. +33 (0)4 50 65 30 00  
S.A. au capital de 322 639 919 € · RCS ANNECY B 325 821 072 · Id. Fiscale : FR 48 325 821 072  
SIRET 325 821 072 00015 · Code APE 2815 Z · Code NACE 28.15

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Single row deep groove ball bearings

## PRODUCT PERFORMANCE

|                                         |             |
|-----------------------------------------|-------------|
| <b>C0 - Static load</b>                 | 20400000 mN |
| <b>Cu - Fatigue limit load</b>          | 930000 mN   |
| <b>f0 - Coefficient</b>                 | 14.1        |
| <b>N ref - Reference thermal speed</b>  | 52200 °/s   |
| <b>N lim - Mechanical Limit Speed</b>   | 78000 °/s   |
| <b>Tmin - Min operating temperature</b> | 233,15 °K   |
| <b>Tmax - Max operating temperature</b> | 393,15 °K   |

## BEARING FREQUENCIES

|                                                                 |          |
|-----------------------------------------------------------------|----------|
| <b>BPFO - Over rolling frequency on outer ring (60 rpm)</b>     | 3.621 Hz |
| <b>BPFI - Over rolling frequency on inner (60 rpm)</b>          | 5.379 Hz |
| <b>BSF - Over rolling frequency on rolling element (60 rpm)</b> | 4.923 Hz |
| <b>BRF - Rotational frequency - rolling element (60 rpm)</b>    | 2.462 Hz |
| <b>FTF - Rotational frequency - cage (60 rpm)</b>               | 0.402 Hz |

## ABUTMENT

|                                                       |         |
|-------------------------------------------------------|---------|
| <b>da min - Min shoulder diameter IR</b>              | 51,5 mm |
| <b>da max - Max shoulder diameter IR</b>              | 0 mm    |
| <b>Da max - Max shoulder diameter OR</b>              | 78,5 mm |
| <b>ra max - Max shaft &amp; housing fillet radius</b> | 1 mm    |
| <b>rNa max - Max fillet radius on segment side</b>    | 0,5 mm  |
| <b>Db min - Min stop ring position diameter</b>       | 93 mm   |



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INDUSTRY CALCUL FACTORS

Equivalent dynamic radial load

$P = X.F_r + Y.F_a$

| $\frac{f_0 F_a}{C_0}$ | e    | Fa / Fr ≤ e |   | Fa / Fr > e |      |
|-----------------------|------|-------------|---|-------------|------|
|                       |      | X           | Y | X           | Y    |
| 0.172                 | 0.19 | 1           | 0 | 0.56        | 2.3  |
| 0.345                 | 0.22 |             |   |             | 1.99 |
| 0.689                 | 0.26 |             |   |             | 1.71 |
| 1.03                  | 0.28 |             |   |             | 1.55 |
| 1.38                  | 0.3  |             |   |             | 1.45 |
| 2.07                  | 0.34 |             |   |             | 1.31 |
| 3.45                  | 0.38 |             |   |             | 1.15 |
| 5.17                  | 0.42 |             |   |             | 1.04 |
| 6.89                  | 0.44 |             |   |             | 1    |

Equivalent static radial load

$P_0 = X_0.F_r + Y_0.F_a$

| $X_0$ | $Y_0$ |
|-------|-------|
| 0.6   | 0.5   |

For single or DT bearing arrangement :

If  $P_0 < F_r$ , then use  $P_0 = F_r$

