



Brand of NTN corporation

Technical data

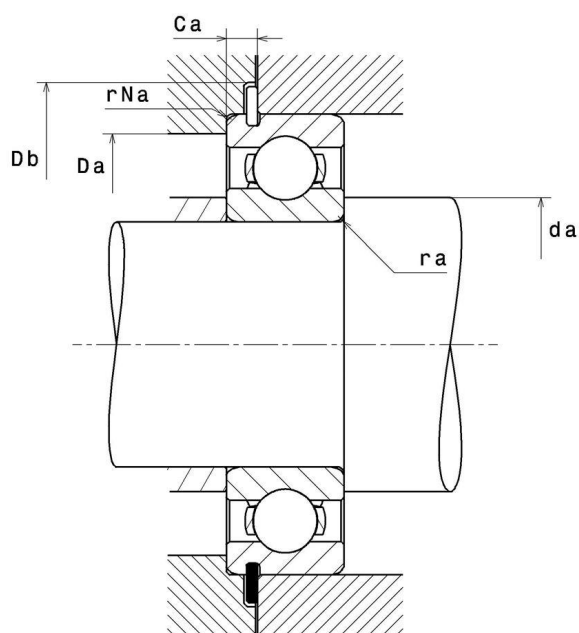
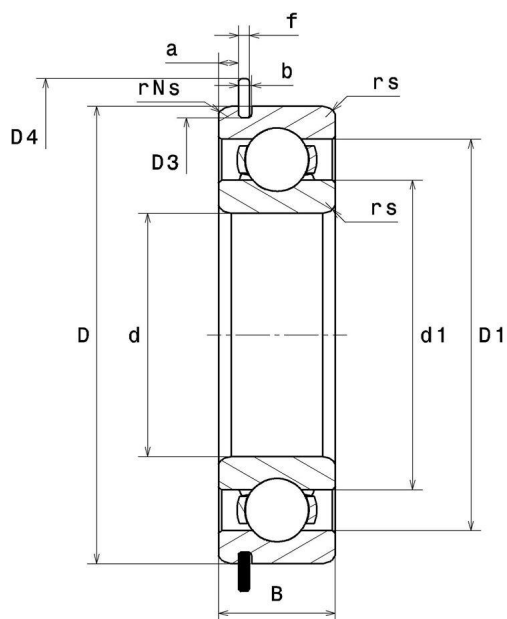
6309NR

Single row deep groove ball bearings



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

VISUAL (S)



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

6309NR

Single row deep groove ball bearings

PRODUCT DEFINITION

Brand	SNR
d - Internal diameter	45 mm
D - External diameter	100 mm
B - Bearing/Inner ring width	25 mm
d1 - External diameter inner ring	59,3 mm
D1 - Inner diameter outer ring	87,1 mm
a min - Min position Groove	3,07 mm
a max - Max position groove	3,28 mm
Ca min - Mini segment position	5,43 mm
Ca max - Max segment position	5,74 mm
rs - Min fillet radius	1,5 mm
rNs - Min fillet radius	0,5 mm
D3 - Max bottom groove diameter	96,8 mm
b min - Min groove width	2,7 mm
b max - Max groove width	3 mm
r0 max - Max bottom groove radius	0,6 mm
D4 max - Max outer diameter of assembled stop ring	106,5 mm
f - Stop ring thickness	2,41 mm
Snap ring reference	R100
Radial clearance class	CN
Mass	0,825 kg

PRODUCT PERFORMANCE

C - Dynamic load	55600000 mN
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PRODUCT PERFORMANCE

C0 - Static load	31700000 mN
Cu - Fatigue limit load	1440000 mN
f0 - Coefficient	13
N ref - Reference thermal speed	49800 °/s
N lim - Mechanical Limit Speed	72000 °/s
Tmin - Min operating temperature	233,15 °K
Tmax - Max operating temperature	393,15 °K

BEARING FREQUENCIES

BPFO - Over rolling frequency on outer ring (60 rpm)	3.037 Hz
BPFI - Over rolling frequency on inner (60 rpm)	4.963 Hz
BSF - Over rolling frequency on rolling element (60 rpm)	3.911 Hz
BRF - Rotational frequency - rolling element (60 rpm)	1.956 Hz
FTF - Rotational frequency - cage (60 rpm)	0.38 Hz

ABUTMENT

da min - Min shoulder diameter IR	53 mm
Da max - Max shoulder diameter OR	92 mm
ra max - Max shaft & housing fillet radius	1,5 mm
rNa max - Max fillet radius on segment side	0,5 mm
Db min - Min stop ring position diameter	108 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 $P_0 = F_r$

