

PDF technical sheet 6209NR

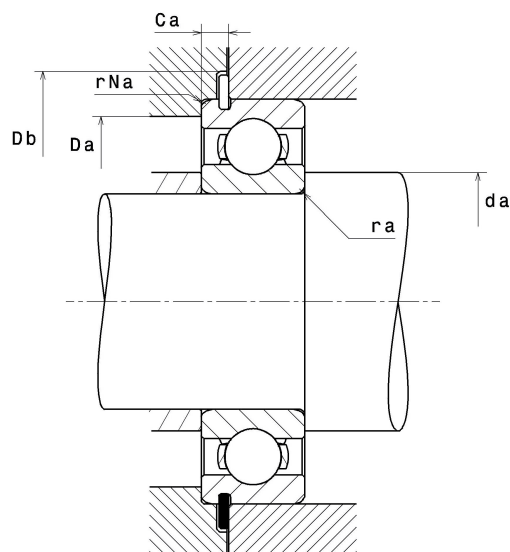


Single row deep groove ball bearings

Product definition	
d	45 mm
D	85 mm
B	19 mm
a min	3.07 mm
a max	3.28 mm
Ca min	4.67 mm
Ca max	4.98 mm
rs min	1.10 mm
rNs min	0.50 mm
D3 max	81.81 mm
b min	1.90 mm
b max	2.20 mm
r0 max	0.60 mm
D4 max	91.60 mm
f	1.70 mm
Snap ring reference	R85
Radial clearance class	CN
Mass	0.40 kg
Brand	NTN



Product performance	
Dynamic load, C	32.50 kN
Static load, C0	20.40 kN
Fatigue limit load, Cu	0.93 kN
f0	14.1
Nlim (oil)	9,200 Tr/min
Nlim (grease)	7,800 Tr/min
Min operating temperature, Tmin	-20 °C
Max operating temperature, Tmax	120 °C
Characteristic cage frequency, FTF	0.40 Hz
Characteristic rolling element frequency, BSF	4.92 Hz
Characteristic outer ring frequency, BPF0	3.62 Hz
Characteristic inner ring frequency, BPF1	5.38 Hz



Abutment dimensions

da min	51.50 mm
Da max	78.50 mm
ra max	1 mm
rNa max	0.50 mm
Db min	93 mm

Calculation factors

Equivalent dynamic radial load

$$P = X \cdot Fr + Y \cdot Fa$$

$\frac{f_0 F_a}{C_0}$	e	$F_a / Fr \leq e$		$F_a / Fr > e$	
		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

$$P_0 = X_0 \cdot Fr + Y_0 \cdot Fa$$

X_0	Y_0
0.6	0.5

For single or DT bearing arrangement:

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