

PDF technical sheet 7204BG



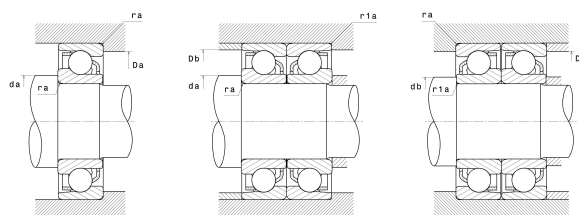
Single row or matched pairs of angular contact ball bearings

Angular contact ball bearings, pressed steel cage

Product definition	
d	20 mm
D	47 mm
B	14 mm
a	21.50 mm
Contact angle, α	40 °
rs min	1 mm
r1s min	0.60 mm
Radial clearance class	CN
Mass	0.10 kg
Brand	NTN



Product performance	
Dynamic load, C	13.30 kN
Static load, C0	7.70 kN
Fatigue limit load, Cu	0.35 kN
Nlim (oil)	20,000 Tr/min
Nlim (grease)	15,000 Tr/min
Min operating temperature, Tmin	-40 °C
Max operating temperature, Tmax	120 °C
Characteristic cage frequency, FTF	0.41 Hz
Characteristic rolling element frequency, BSF	4.22 Hz
Characteristic outer ring frequency, BPF0	4.53 Hz
Characteristic inner ring frequency, BPFI	6.47 Hz



Abutment dimensions	
da min	25.50 mm
db min	24.50 mm
Da max	41.50 mm
Db max	42.50 mm
r1a max	0.60 mm
ra max	0.60 mm

Calculation factors

Equivalent dynamic radial load

$$P = X.F_r + Y.F_a$$

	e	Single or DT bearing arrangement				DB or DF arrangement			
		Fa / Fr ≤ e		Fa / Fr > e		Fa / Fr ≤ e		Fa / Fr > e	
		X	Y	X	Y	X	Y	X	Y
30°	0.8	1	0	0.9	0.76	1	0.78	0.63	1.24
40°	1.14			0.35	0.57		0.55	0.57	0.93

Equivalent static radial load

$$P_0 = X_0.F_r + Y_0.F_a$$

a	Single or DT bearing arrangement		DB or DF arrangement	
	X ₀	Y ₀	X ₀	Y ₀
30°	0.5	0.33	1	0.66
40°		0.26		0.52

For single or DT bearing arrangement :

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