

PDF technical sheet 6309C3



Single row deep groove ball bearings

Deep groove ball bearing, radial contact, pressed steel cage, open

Product definition

d	45 mm
D	100 mm
B	25 mm
rs min	1.50 mm
Radial clearance class	C3
Mass	0.81 kg
Brand	NTN



Product performance

Dynamic load, C	53 kN
Static load, C0	32 kN
Fatigue limit load, Cu	1.45 kN
f0	13.1
Nlim (oil)	8,200 Tr/min
Nlim (grease)	7,000 Tr/min
Min operating temperature, Tmin	-60 °C
Characteristic cage frequency, FTF	0.38 Hz
Characteristic rolling element frequency, BSF	4.00 Hz
Characteristic outer ring frequency, BPF0	3.06 Hz
Characteristic inner ring frequency, BPF1	4.94 Hz



Abutment dimensions

da min	53 mm
Da max	92 mm
ra max	1.50 mm

Calculation factors

Equivalent dynamic radial load

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

$\frac{f_0 F_a}{C_0}$	e	$F_a / F_r \leq e$		$F_a / F_r > e$	
		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 $P_0 = F_r$