

PDF technical sheet 6311N



Single row deep groove ball bearings

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

Product definition

d	2.1654 "
D	4.7244 "
B	1.1417 "
a min	0.1520 "
a max	0.1598 "
rs min	0.0787 "
rNs min	0.0197 "
D3 max	4.5358 "
b min	0.1220 "
b max	0.1339 "
r0 max	0.0236 "
Radial clearance class	CN
Mass	4.83 oz
Brand	NTN



Product performance

Dynamic load, C	71.50 kN
Static load, C0	45 kN
Fatigue limit load, Cu	2.05 kN
f0	13.2
Nlim (oil)	6,800 RPM
Nlim (grease)	5,800 RPM
Min operating temperature, Tmin	-4 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.38 Hz
Characteristic rolling element frequency, BSF	4.08 Hz
Characteristic outer ring frequency, BPF0	3.07 Hz
Characteristic inner ring frequency, BPF1	4.93 Hz



Abutment dimensions

da min	2.5197 "
Da max	4.3701 "
ra max	0.0787 "
rNa max	0.0197 "

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 $P_0 = F_r$