

PDF technical sheet

7007UADG/GNP42U3G

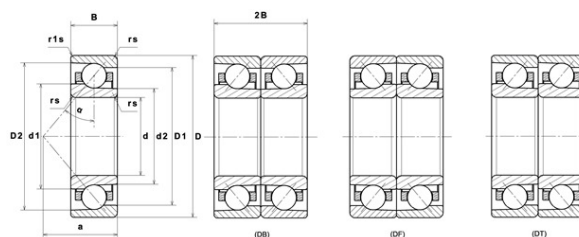


High precision angular contact ball bearings

High precision angular contact ball bearing, moulded polyamide cage centred on balls

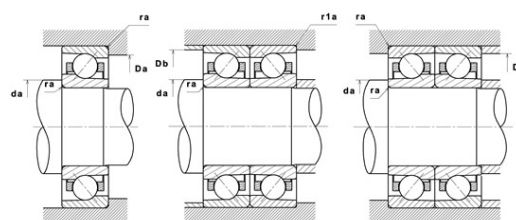
Product definition

d	1.3780 "
D	2.4409 "
B	0.5512 "
d1	1.7402 "
d2	1.6614 "
D1	2.0787 "
D2	2.2402 "
a	0.7244 "
Contact angle, α	25 °
rs min	0.0394 "
r1s min	0.0236 "
f0	15.2
Precision class	P42
Mass	0.53 oz
Brand	NTN



Product performance

Dynamic load, C	19 kN
Static load, C0	13.90 kN
Nlim (oil)	33,800 RPM
Nlim (grease)	20,900 RPM
Preload level	GN
Peload value	186 kN
axial rigidity	122.4 N/ μ m
radial rigidity	258.1 N/ μ m
Min operating temperature, Tmin	-4 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.43 Hz
Characteristic rolling element frequency, BSF	5.98 Hz
Characteristic outer ring frequency, BPF0	6.81 Hz
Characteristic inner ring frequency, BPFI	9.19 Hz



Abutment dimensions

da min	1.5945 "
Da max	2.2244 "
Db max	2.2638 "
r1a max	0.0236 "
ra max	0.0394 "
D6	1.7559 "

Calculation factors

Equivalent dynamic radial load

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

Series			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
70 (NTN & SNR) 72 (NTN & SNR) 78 (NTN) 79 (NTN) 719 (SNR)	15°	0.178	0.38	1	0	0.44	1.47	1	1.65	0.72	2.39
		0.357	0.4				1.4		1.57		2.28
		0.714	0.43				1.3		1.46		2.11
		1.07	0.46				1.23		1.38		2
		1.43	0.47				1.19		1.34		1.93
		2.14	0.5				1.12		1.26		1.82
		3.57	0.55				1.02		1.14		1.66
		5.35	0.56						1.12		1.63
		7.14	0.56				1		1.12		1.63
	25°		0.68			0.41	0.87		0.92	0.67	1.41
	30°		0.8				0.76		0.78		1.24

Equivalent static radial load

$$Po = Xo \cdot Fr + Yo \cdot Fa$$

Series			Single or DT bearing arrangement		DB or DF arrangement	
			X ₀	Y ₀	X ₀	Y ₀
70 (NTN & SNR) 72 (NTN & SNR) 78 (NTN) 79 (NTN) 719 (SNR)	15°		0.5	0.46	1	0.92
	25°			0.38		0.76
	30°			0.33		0.66

For single or DT bearing arrangement :

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