

PDF technical sheet ML7003HVUJ84S



High precision angular contact ball bearings

High precision angular contact ball bearing, high speed series ML, laminated resin cage centred on outer ring

Product definition

d	0.6693 "
D	1.3780 "
B	0.3937 "
d1	0.8917 "
d2	0.8425 "
D1	1.1988 "
D2	1.2224 "
a	0.4331 "
Contact angle, α	25 °
rs min	0.0118 "
r1s min	0.0118 "
f0	7.824
Precision class	P4S
Mass	0.13 oz
Brand	SNR



Product performance

Dynamic load, C	3.55 kN
Static load, C0	1.68 kN
Fatigue limit load, Cu	0.10 kN
Nlim (oil)	75,000 RPM
Nlim (grease)	52,000 RPM
Axial displacement K Factor	1.03
Preload level	8
Peloid value	90 kN
axial rigidity	63 N/ μ m
radial rigidity	133 N/ μ m
Min operating temperature, Tmin	-22 °C
Max operating temperature, Tmax	248 °C
Characteristic cage frequency, FTF	0.43 Hz
Characteristic rolling element frequency, BSF	6.31 Hz
Characteristic outer ring frequency, BPF0	6.44 Hz
Characteristic inner ring frequency, BPF1	8.56 Hz



Abutment dimensions

da min	0.7677 "
db min	0.7677 "
Da max	1.2795 "
Db max	1.2795 "
r1a max	0.0118 "
ra max	0.0118 "
D6	0.9528 "

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		0.39	0.76		0.78	0.63	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 $Po = Fr$