# Technical datasheet

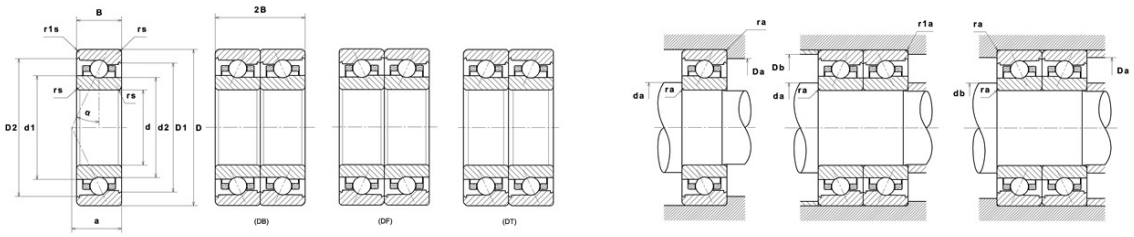
## ML7003CVUJ74S

High precision angular contact ball bearings



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

## Visual(s)




## Product definition

| | |
|---|---|
| **d** | 17 mm |
| **D** | 35 mm |
| **B** | 10 mm |
| **d1** | 22.65 mm |
| **d2** | 21.4 mm |
| **D1** | 30.45 mm |
| **D2** | 31.05 mm |
| **a** | 9 mm |
| **Contact angle α** | 17 ° |
| **rs min** | 0.3 mm |
| **r1s min** | 0.3 mm |
| **f0** | 7.73 |
| **Precision class** | P4S |
| **Mass** | 0.04 kg |
| **Brand** | SNR |

## Product performance

| | |
|---|---|
| **Dynamic load, C** | 3.7 kN |
| **Static load, C0** | 1.75 kN |
| **Fatigue limit load, Cu** | 0.1 kN |
| **Nlim (oil)** | 85,000 rpm |
| **Nlim (grease)** | 62,000 rpm |
| **Axial displacement K Factor** | 1.89 |
| **Preload level** | 7 |
| **Preload value** | 0.019 kN |
| **Axial rigidity** | 20 N/µm |
| **Radial rigidity** | 100 N/µm |
| **Min operating temperature, Tmin** | -30 °C |
| **Max operating temperature, Tmax** | 120 °C |
| **Characteristic cage frequency, FTF** | 0.43 Hz |
| **Characteristic rolling element frequency, BSF** | 6.3 Hz |
| **Characteristic outer ring frequency, BPF0** | 6.39 Hz |
| **Characteristic inner ring frequency, BPFI** | 8.61 Hz |

## Abutment dimensions

| | |
|---|---|
| **da min** | 19.5 mm |
| **db min** | 19.5 mm |
| **Da max** | 32.5 mm |
| **Db max** | 32.5 mm |
| **r1a max** | 0.3 mm |
| **ra max** | 0.3 mm |
| **D6** | 24.2 mm |

# Calculation factors

**Equivalent dynamic radial load**

P = X.Fr + Y.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)<br>72 (NTN & SNR)<br>78 (NTN)<br>79 (NTN)<br>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.Fr + Yo.Fa

| Series | | | Single or DT bearing arrangement | | DB or DF arrangement | |
|---|---|---|---|---|---|---|
| | | | $X_0$ | $Y_0$ | $X_0$ | $Y_0$ |
| 70 (NTN & SNR)<br>72 (NTN & SNR)<br>78 (NTN)<br>79 (NTN)<br>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