

# PDF technical sheet

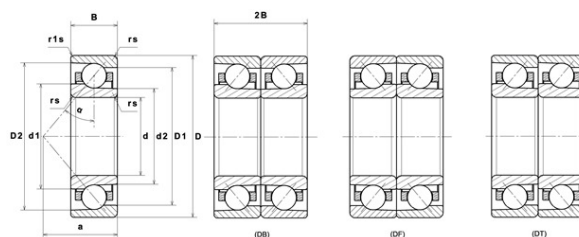
## 7022UADG/GNP42U3G



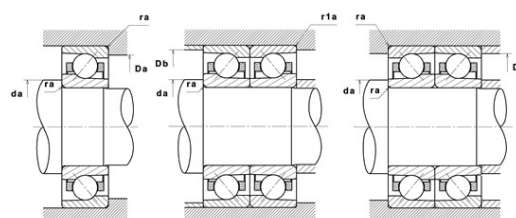
### High precision angular contact ball bearings

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

| Product definition      |           |
|-------------------------|-----------|
| d                       | 110 mm    |
| D                       | 170 mm    |
| B                       | 28 mm     |
| d1                      | 130.20 mm |
| d2                      | 125.40 mm |
| D1                      | 149.90 mm |
| D2                      | 159.30 mm |
| a                       | 46.80 mm  |
| Contact angle, $\alpha$ | 25 °      |
| rs min                  | 2 mm      |
| r1s min                 | 1 mm      |
| f0                      | 16        |
| Precision class         | P42       |
| Mass                    | 1.98 kg   |
| Brand                   | NTN       |



| Product performance                           |                |
|-----------------------------------------------|----------------|
| Dynamic load, C                               | 98.50 kN       |
| Static load, C0                               | 101 kN         |
| Nlim (oil)                                    | 11,700 Tr/min  |
| Nlim (grease)                                 | 7,300 Tr/min   |
| Preload level                                 | GN             |
| Peload value                                  | 990 kN         |
| axial rigidity                                | 335 N/ $\mu$ m |
| radial rigidity                               | 715 N/ $\mu$ m |
| Min operating temperature, Tmin               | -20 °C         |
| Max operating temperature, Tmax               | 120 °C         |
| Characteristic cage frequency, FTF            | 0.44 Hz        |
| Characteristic rolling element frequency, BSF | 7.57 Hz        |
| Characteristic outer ring frequency, BPF0     | 9.26 Hz        |
| Characteristic inner ring frequency, BPFI     | 11.74 Hz       |



### Abutment dimensions

|         |           |
|---------|-----------|
| da min  | 120 mm    |
| Da max  | 160 mm    |
| Db max  | 164.50 mm |
| r1a max | 1 mm      |
| ra max  | 2 mm      |
| D6      | 129.90 mm |

### 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)<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 | 1                                | 0 | 0.41        | 0.87 | 1                    | 0.92 | 0.67        | 1.41 |
|                                                                       | 30° |       | 0.8  |                                  |   |             |      |                      |      |             | 0.78 |

#### Equivalent static radial load

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

| Series                                                                |     |  | Single or DT bearing arrangement |      | DB or DF arrangement |      |
|-----------------------------------------------------------------------|-----|--|----------------------------------|------|----------------------|------|
|                                                                       |     |  | Xo                               | Yo   | Xo                   | Yo   |
|                                                                       |     |  |                                  |      |                      |      |
| 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  $Po = Fr$