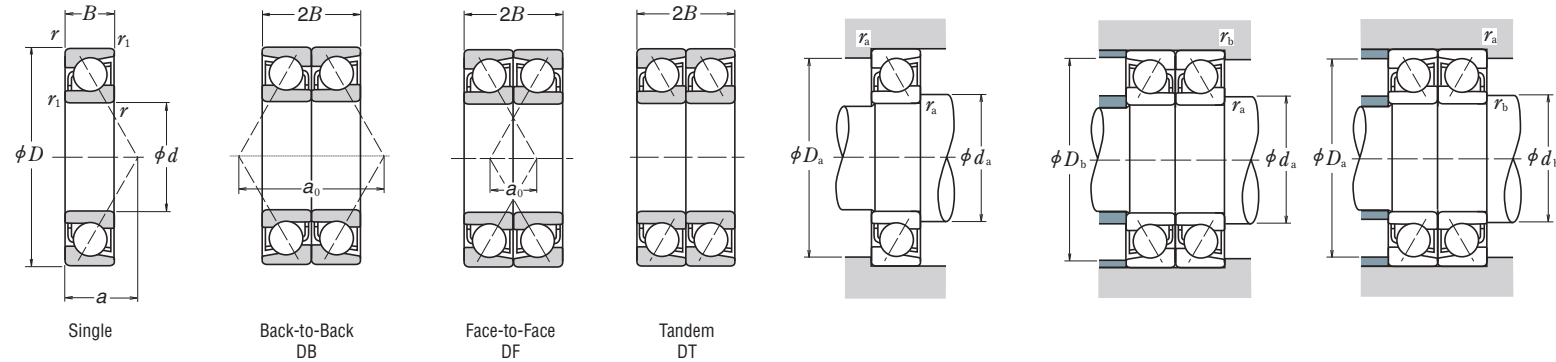


**ANGULAR CONTACT BALL BEARINGS**
**SINGLE/MATCHED MOUNTINGS**

Bore Diameter 10 – 15 mm


**Dynamic Equivalent Load**  $P = XF_r + YF_a$ 

| Contact Angle | $\frac{f_0 F_a}{C_{or}}$ | $e$  | Single, DT       |   |               |      | DB or DF         |      |               |      |
|---------------|--------------------------|------|------------------|---|---------------|------|------------------|------|---------------|------|
|               |                          |      | $F_a/F_r \leq e$ |   | $F_a/F_r > e$ |      | $F_a/F_r \leq e$ |      | $F_a/F_r > e$ |      |
|               |                          |      | X                | Y | X             | Y    | X                | Y    | X             | Y    |
| 30°           | —                        | 0.80 | 1                | 0 | 0.39          | 0.76 | 1                | 0.78 | 0.63          | 1.24 |
| 40°           | —                        | 1.14 | 1                | 0 | 0.35          | 0.57 | 1                | 0.55 | 0.57          | 0.93 |

 \*For  $i$ , use 2 for DB and DF and 1 for DT

**Static Equivalent Load**  $P_0 = X_0 F_r + Y_0 F_a$ 

| Contact Angle | Single, DT |       | DB or DF |       | Single or DT mounting When $F_r > 0.5 F_r + Y_0 F_a$ use $F_0 = F_r$ |
|---------------|------------|-------|----------|-------|----------------------------------------------------------------------|
|               | $X_0$      | $Y_0$ | $X_0$    | $Y_0$ |                                                                      |
|               | Grease     | Oil   | Grease   | Oil   |                                                                      |
| 30°           | 0.5        | 0.33  | 1        | 0.66  |                                                                      |
| 40°           | 0.5        | 0.26  | 1        | 0.52  |                                                                      |

| Boundary Dimensions (mm) |     |     |          |            | Basic Load Ratings (Single) |          | Factor | Limiting Speeds <sup>(1)</sup> (min <sup>-1</sup> ) |        | Eff. Load Center (mm) $a$ | Abutment and Fillet Dimensions (mm) |            |            | Mass (kg) approx. | Bearing Designations <sup>(2)</sup> Cage Designation <sup>(4)</sup> |          |             |             | Basic Load Ratings (Matched) <sup>(N)</sup> |          | Limiting Speeds <sup>(1)</sup> (Matched) (min <sup>-1</sup> ) |        | Load Center Spacings (mm) $a_0$ |      | Abutment and Fillet Dimensions (mm) |            |                           |
|--------------------------|-----|-----|----------|------------|-----------------------------|----------|--------|-----------------------------------------------------|--------|---------------------------|-------------------------------------|------------|------------|-------------------|---------------------------------------------------------------------|----------|-------------|-------------|---------------------------------------------|----------|---------------------------------------------------------------|--------|---------------------------------|------|-------------------------------------|------------|---------------------------|
| $d$                      | $D$ | $B$ | $r$ min. | $r_1$ min. | $C_r$                       | $C_{or}$ |        | Grease                                              | Oil    |                           | $d_a$ min.                          | $D_a$ max. | $r_a$ max. |                   | Single                                                              | Standard | Option      | Arrangement | $C_r$                                       | $C_{or}$ | Grease                                                        | Oil    | DB                              | DF   | $d_b$ <sup>(3)</sup> min.           | $D_b$ max. | $r_b$ <sup>(3)</sup> max. |
| 10                       | 26  | 8   | 0.3      | 0.15       | 5 900                       | 2 600    | —      | 24 000                                              | 34 000 | 9.2                       | 12.5                                | 23.5       | 0.3        | 0.019             | 7000 A                                                              | W        | (M), T, TYN | DB DF DT    | 9 600                                       | 5 200    | 20 000                                                        | 28 000 | 18.4                            | 2.4  | 11.2                                | 24.8       | 0.15                      |
|                          | 30  | 9   | 0.6      | 0.3        | 5 950                       | 2 710    | —      | 22 000                                              | 30 000 | 10.3                      | 15                                  | 25         | 0.6        | 0.032             | 7200 A                                                              | W        | (M), TYN    | DB DF DT    | 9 700                                       | 5 400    | 18 000                                                        | 24 000 | 20.5                            | 2.5  | 12.5                                | 27.5       | 0.3                       |
|                          | 30  | 9   | 0.6      | 0.3        | 5 500                       | 2 500    | —      | 16 000                                              | 22 000 | 12.9                      | 15                                  | 25         | 0.6        | 0.032             | 7200 B                                                              | W        | (M), T      | DB DF DT    | 8 900                                       | 5 000    | 13 000                                                        | 18 000 | 25.8                            | 7.8  | 12.5                                | 27.5       | 0.3                       |
|                          | 35  | 11  | 0.6      | 0.3        | 10 200                      | 4 300    | —      | 16 000                                              | 22 000 | 12.0                      | 15                                  | 30         | 0.6        | 0.053             | 7300 A                                                              | W        | (M), T      | DB DF DT    | 16 600                                      | 8 600    | 13 000                                                        | 17 000 | 24.0                            | 2.0  | 12.5                                | 32.5       | 0.3                       |
|                          | 35  | 11  | 0.6      | 0.3        | 9 600                       | 4 050    | —      | 14 000                                              | 20 000 | 14.9                      | 15                                  | 30         | 0.6        | 0.054             | 7300 B                                                              | W        | (M), T      | DB DF DT    | 15 600                                      | 8 100    | 11 000                                                        | 16 000 | 29.9                            | 7.9  | 12.5                                | 32.5       | 0.3                       |
|                          | 35  | 11  | 0.6      | 0.3        | 9 600                       | 4 050    | —      | 14 000                                              | 20 000 | 14.9                      | 15                                  | 30         | 0.6        | 0.054             | 7300 B                                                              | W        | (M), T      | DB DF DT    | 15 600                                      | 8 100    | 11 000                                                        | 16 000 | 29.9                            | 7.9  | 12.5                                | 32.5       | 0.3                       |
| 12                       | 28  | 8   | 0.3      | 0.15       | 6 350                       | 2 980    | —      | 22 000                                              | 30 000 | 9.8                       | 14.5                                | 25.5       | 0.3        | 0.021             | 7001 A                                                              | W        | (M), T, TYN | DB DF DT    | 10 300                                      | 5 950    | 18 000                                                        | 24 000 | 19.5                            | 3.5  | 13.2                                | 26.8       | 0.15                      |
|                          | 32  | 10  | 0.6      | 0.3        | 8 800                       | 4 050    | —      | 20 000                                              | 28 000 | 11.4                      | 17                                  | 27         | 0.6        | 0.037             | 7201 A                                                              | W        | (M), T, TYN | DB DF DT    | 14 300                                      | 8 050    | 16 000                                                        | 22 000 | 22.7                            | 2.7  | 14.5                                | 29.5       | 0.3                       |
|                          | 32  | 10  | 0.6      | 0.3        | 8 150                       | 3 750    | —      | 15 000                                              | 20 000 | 14.2                      | 17                                  | 27         | 0.6        | 0.038             | 7201 B                                                              | W        | (M), T      | DB DF DT    | 13 300                                      | 7 500    | 12 000                                                        | 16 000 | 28.5                            | 8.5  | 14.5                                | 29.5       | 0.3                       |
|                          | 32  | 10  | 0.6      | 0.3        | 8 500                       | 3 750    | —      | 20 000                                              | 30 000 | 14.2                      | 17                                  | 27         | 0.6        | 0.036             | *7201 BEA                                                           | T85      | —           | —           | —                                           | —        | 16 000                                                        | 24 000 | 28.5                            | 8.5  | 14.5                                | 29.5       | 0.3                       |
|                          | 37  | 12  | 1        | 0.6        | 10 400                      | 4 500    | —      | 15 000                                              | 20 000 | 13.1                      | 18                                  | 31         | 1          | 0.060             | 7301 A                                                              | W        | (M), T      | DB DF DT    | 16 900                                      | 9 000    | 12 000                                                        | 16 000 | 26.1                            | 2.1  | 17                                  | 32         | 0.6                       |
|                          | 37  | 12  | 1        | 0.6        | 9 750                       | 4 200    | —      | 13 000                                              | 18 000 | 16.3                      | 18                                  | 31         | 1          | 0.062             | 7301 B                                                              | W        | (M), T      | DB DF DT    | 15 800                                      | 8 400    | 10 000                                                        | 14 000 | 32.6                            | 8.6  | 17                                  | 32         | 0.6                       |
| 15                       | 37  | 12  | 1        | 0.6        | 11 600                      | 4 950    | —      | 18 000                                              | 26 000 | 16.3                      | 18                                  | 31         | 1          | 0.061             | *7301 BEA                                                           | T85      | —           | —           | —                                           | —        | 15 000                                                        | 22 000 | 32.6                            | 8.6  | 17                                  | 32         | 0.6                       |
|                          | 32  | 9   | 0.3      | 0.15       | 6 750                       | 3 450    | —      | 19 000                                              | 26 000 | 11.3                      | 17.5                                | 29.5       | 0.3        | 0.030             | 7002 A                                                              | W        | (M), T, TYN | DB DF DT    | 10 900                                      | 6 850    | 15 000                                                        | 22 000 | 22.6                            | 4.6  | 16.2                                | 30.8       | 0.15                      |
|                          | 35  | 11  | 0.6      | 0.3        | 9 500                       | 4 650    | —      | 18 000                                              | 24 000 | 12.7                      | 20                                  | 30         | 0.6        | 0.045             | 7202 A                                                              | W        | (M), T, TYN | DB DF DT    | 15 400                                      | 9 300    | 14 000                                                        | 20 000 | 25.4                            | 3.4  | 17.5                                | 32.5       | 0.3                       |
|                          | 35  | 11  | 0.6      | 0.3        | 8 750                       | 4 300    | —      | 13 000                                              | 18 000 | 16.0                      | 20                                  | 30         | 0.6        | 0.046             | 7202 B                                                              | W        | (M), T      | DB DF DT    | 14 200                                      | 8 600    | 10 000                                                        | 14 000 | 32.0                            | 10.0 | 17.5                                | 32.5       | 0.3                       |
|                          | 35  | 11  | 0.6      | 0.3        | 10 200                      | 4 800    | —      | 18 000                                              | 26 000 | 16.0                      | 20                                  | 30         | 0.6        | 0.044             | *7202 BEA                                                           | T85      | —           | —           | —                                           | —        | 14 000                                                        | 20 000 | 32.0                            | 10.0 | 17.5                                | 32.5       | 0.3                       |
|                          | 42  | 13  | 1        | 0.6        | 14 700                      | 7 100    | —      | 13 000                                              | 17 000 | 14.7                      | 21                                  | 36         | 1          | 0.084             | 7302 A                                                              | W        | (M), T      | DB DF DT    | 23 900                                      | 14 200   | 10 000                                                        | 13 000 | 29.5                            | 3.5  | 20                                  | 37         | 0.6                       |
| 15                       | 42  | 13  | 1        | 0.6        | 13 700                      | 6 600    | —      | 11 000                                              | 15 000 | 18.5                      | 21                                  | 36         | 1          | 0.086             | 7302 B                                                              | W        | (M), T      | DB DF DT    | 22 300                                      | 13 200   | 9 000                                                         | 12 000 | 36.9                            | 10.9 | 20                                  | 37         | 0.6                       |
|                          | 42  | 13  | 1        | 0.6        | 15 000                      | 6 900    | —      | 16 000                                              | 22 000 | 18.5                      | 21                                  | 36         | 1          | 0.084             | *7302 BEA                                                           | T85      | —           | —           | —                                           | —        | 13 000                                                        | 18 000 | 36.9                            | 10.9 | 20                                  | 37         | 0.6                       |

- Notes** <sup>(1)</sup> For applications operating near the limiting speed, refer to Page C077.  
<sup>(2)</sup> Suffixes A and B represent contact angles of 30° and 40° respectively.  
<sup>(3)</sup> Use the values of  $d_a$  (min) and  $r_a$  (max) for bearings with "—" in the  $d_b$  column.

- Note** <sup>(4)</sup> Cage designation (M) is usually omitted from the bearing designation.  
**Remark** Bearings with an asterisk (\*) are high-accuracy angular contact ball bearings. In arrangements, they are limited to SU universal matching types. See Page C073 for details.