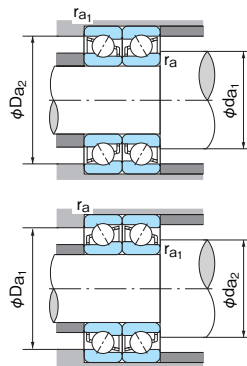
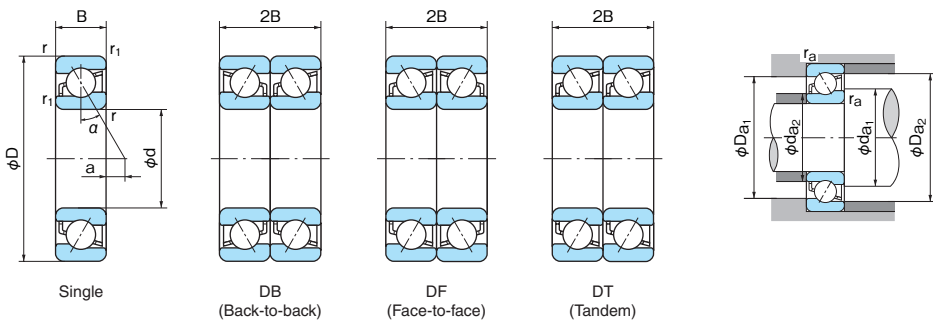


Angular Contact Ball Bearings Single Mounting / Duplex Mounting

Bore Diameter: 60~75mm



Dynamic equivalent radial load  
 $P_r = X F_r + Y F_a$

| Contact angle | iFaCor | e    | DB or DF     |      |          |      |          |      |
|---------------|--------|------|--------------|------|----------|------|----------|------|
|               |        |      | Single or DT |      | FaFr > e |      | FaFr ≤ e |      |
|               |        |      | X            | Y    | X        | Y    | X        | Y    |
|               |        |      | FaFr > e     |      | FaFr ≤ e |      | FaFr ≤ e |      |
| 15°           | 0.015  | 0.38 | 1.47         | 1.65 | 1.47     | 1.65 | 1.47     | 1.65 |
|               | 0.029  | 0.40 | 0.44         | 1.40 | 1        | 1.57 | 0.72     | 2.28 |
|               | 0.058  | 0.43 | 1.30         | 1.46 | 1.30     | 1.46 | 1.30     | 1.46 |
|               | 0.087  | 0.46 | 1.23         | 1.38 | 1.23     | 1.38 | 1.23     | 1.38 |
|               | 0.12   | 0.47 | 0.44         | 1.19 | 1        | 1.34 | 0.72     | 1.93 |
|               | 0.17   | 0.50 | 1.12         | 1.26 | 1.12     | 1.26 | 1.12     | 1.26 |
|               | 0.29   | 0.55 | 1.02         | 1.14 | 1.02     | 1.14 | 1.02     | 1.14 |
|               | 0.44   | 0.56 | 0.44         | 1.00 | 1        | 1.12 | 0.72     | 1.63 |
|               | 0.58   | 0.56 | 1.00         | 1.12 | 1.00     | 1.12 | 1.00     | 1.12 |
|               | 0.58   | 0.56 | 1.00         | 1.12 | 1.00     | 1.12 | 1.00     | 1.12 |
| 30°           | —      | 0.8  | 0.39         | 0.76 | 1        | 0.78 | 0.63     | 1.24 |
| 40°           | —      | 1.14 | 0.35         | 0.57 | 1        | 0.55 | 0.57     | 0.93 |

Static equivalent radial load  
 $P_{or} = X_o F_r + Y_o F_a$

| Contact angle | Single or DT |      | DB or DF |      |
|---------------|--------------|------|----------|------|
|               | Xo           | Yo   | Xo       | Yo   |
| 15°           | 0.5          | 0.46 | 1        | 0.92 |
| 30°           | 0.5          | 0.33 | 1        | 0.66 |
| 40°           | 0.5          | 0.26 | 1        | 0.52 |

Single or DT mounting When  $P_{or} < F_r$ , use  $P_r = F_r$

i = 2 for DB or DF mounting  
i = 1 for Single or DT mounting  
Single or DT mounting When  $F_a/F_r \leq e$ , use  $P_r = F_r$

| Boundary dimensions (mm) |     |    |         |                      | Load center (mm)<br>a | Bearing No. |         |         |         | Basic dynamic load rating<br>Cr (N) |        | Basic static load rating<br>Cor (N) | Limiting speed (min <sup>-1</sup> ) |        |                 |      | Abutment and fillet dimensions (mm) |                       |                       |                       |                      |                       | Mass (kg)<br>Single | Bearing No. |       |       |
|--------------------------|-----|----|---------|----------------------|-----------------------|-------------|---------|---------|---------|-------------------------------------|--------|-------------------------------------|-------------------------------------|--------|-----------------|------|-------------------------------------|-----------------------|-----------------------|-----------------------|----------------------|-----------------------|---------------------|-------------|-------|-------|
| d                        | D   | B  | r (min) | r <sub>1</sub> (min) |                       | Single      | Duplex  |         |         | Single                              | Duplex |                                     | Grease lubrication                  |        | Oil lubrication |      | d <sub>a1</sub> (min)               | d <sub>a2</sub> (min) | D <sub>a1</sub> (max) | D <sub>a2</sub> (max) | r <sub>a</sub> (max) | r <sub>a1</sub> (max) |                     |             |       |       |
| 60                       | 95  | 18 | 1.1     | 0.6                  | 13.4                  | 7012        | 7012DB  | 7012DF  | 7012DT  | 32000                               | 51500  |                                     | 28000                               | 56000  | 6000            | 4500 | 7600                                | 6200                  | 66                    | 66                    | 89                   | 91                    | 1                   | 0.6         | 0.450 | 7012  |
|                          | 95  | 18 | 1.1     | 0.6                  | −0.1                  | 7012C       | 7012CDB | 7012CDF | 7012CDT | 35500                               | 57500  |                                     | 30500                               | 61500  | 10000           | 8000 | 14000                               | 11000                 | 66                    | 66                    | 89                   | 91                    | 1                   | 0.6         | 0.450 | 7012C |
|                          | 110 | 22 | 1.5     | 1                    | 13.5                  | 7212        | 7212DB  | 7212DF  | 7212DT  | 62000                               | 100000 |                                     | 48500                               | 97500  | 5300            | 4300 | 7100                                | 5600                  | 69                    | 65                    | 101                  | 104.6                 | 1.5                 | 1           | 0.820 | 7212  |
|                          | 110 | 22 | 1.5     | 1                    | 24.7                  | 7212B       | 7212BDB | 7212BDF | 7212BDT | 58000                               | 94000  |                                     | 46000                               | 92000  | 4800            | 3800 | 6300                                | 5000                  | 69                    | 65                    | 101                  | 104.6                 | 1.5                 | 1           | 0.820 | 7212B |
|                          | 110 | 22 | 1.5     | 1                    | −1.2                  | 7212C       | 7212CDB | 7212CDF | 7212CDT | 64500                               | 105000 |                                     | 49500                               | 98500  | 9400            | 7500 | 13000                               | 10000                 | 69                    | 69                    | 101                  | 104.6                 | 1.5                 | 1           | 0.820 | 7212C |
|                          | 130 | 31 | 2.1     | 1.1                  | 11.9                  | 7312        | 7312DB  | 7312DF  | 7312DT  | 98000                               | 159000 |                                     | 71500                               | 148000 | 4800            | 3800 | 6300                                | 5000                  | 72                    | 67                    | 118                  | 123                   | 2                   | 1           | 1.81  | 7312  |
|                          | 130 | 31 | 2.1     | 1.1                  | 24.4                  | 7312B       | 7312BDB | 7312BDF | 7312BDT | 92500                               | 151000 |                                     | 67500                               | 135000 | 4300            | 3400 | 5500                                | 4500                  | 72                    | 67                    | 118                  | 123                   | 2                   | 1           | 1.81  | 7312B |
|                          | 130 | 31 | 2.1     | 1.1                  | −4.5                  | 7312C       | 7312CDB | 7312CDF | 7312CDT | 99500                               | 162000 |                                     | 70000                               | 140000 | 8400            | 6700 | 12000                               | 9600                  | 72                    | 72                    | 118                  | 123                   | 2                   | 1           | 1.81  | 7312C |
| 65                       | 100 | 18 | 1.1     | 0.6                  | 14.8                  | 7013        | 7013DB  | 7013DF  | 7013DT  | 33500                               | 54500  |                                     | 31000                               | 62500  | 5600            | 4300 | 7100                                | 6000                  | 71                    | 71                    | 94                   | 96                    | 1                   | 0.6         | 0.470 | 7013  |
|                          | 100 | 18 | 1.1     | 0.6                  | 0.5                   | 7013C       | 7013CDB | 7013CDF | 7013CDT | 37500                               | 60500  |                                     | 34500                               | 69000  | 9700            | 7800 | 13000                               | 10000                 | 71                    | 71                    | 94                   | 96                    | 1                   | 0.6         | 0.470 | 7013C |
|                          | 120 | 23 | 1.5     | 1                    | 15.2                  | 7213        | 7213DB  | 7213DF  | 7213DT  | 70000                               | 114000 |                                     | 57800                               | 116000 | 4900            | 3900 | 6500                                | 5300                  | 74                    | 70                    | 111                  | 114.6                 | 1.5                 | 1           | 1.02  | 7213  |
|                          | 120 | 23 | 1.5     | 1                    | 27.4                  | 7213B       | 7213BDB | 7213BDF | 7213BDT | 66000                               | 107000 |                                     | 54500                               | 109000 | 4300            | 3400 | 5600                                | 4600                  | 74                    | 70                    | 111                  | 114.6                 | 1.5                 | 1           | 1.02  | 7213B |
|                          | 120 | 23 | 1.5     | 1                    | −0.8                  | 7213C       | 7213CDB | 7213CDF | 7213CDT | 73500                               | 120000 |                                     | 59000                               | 118000 | 8600            | 6900 | 12000                               | 9600                  | 74                    | 74                    | 111                  | 114.6                 | 1.5                 | 1           | 1.02  | 7213C |
|                          | 140 | 33 | 2.1     | 1.1                  | 13.1                  | 7313        | 7313DB  | 7313DF  | 7313DT  | 111000                              | 180000 |                                     | 82000                               | 165000 | 4400            | 3600 | 5800                                | 4700                  | 77                    | 72                    | 128                  | 133                   | 2                   | 1           | 2.22  | 7313  |
|                          | 140 | 33 | 2.1     | 1.1                  | 26.6                  | 7313B       | 7313BDB | 7313BDF | 7313BDT | 105000                              | 170000 |                                     | 77500                               | 155000 | 4000            | 3200 | 5300                                | 4200                  | 77                    | 72                    | 128                  | 133                   | 2                   | 1           | 2.22  | 7313B |
|                          | 140 | 33 | 2.1     | 1.1                  | −4.7                  | 7313C       | 7313CDB | 7313CDF | 7313CDT | 113000                              | 183000 |                                     | 81000                               | 162000 | 7800            | 6200 | 11000                               | 8800                  | 77                    | 77                    | 128                  | 133                   | 2                   | 1           | 2.22  | 7313C |
| 70                       | 110 | 20 | 1.1     | 0.6                  | 16.0                  | 7014        | 7014DB  | 7014DF  | 7014DT  | 42500                               | 69000  |                                     | 39500                               | 78500  | 5000            | 4000 | 6600                                | 5300                  | 76                    | 76                    | 104                  | 106                   | 1                   | 0.6         | 0.660 | 7014  |
|                          | 110 | 20 | 1.1     | 0.6                  | 0.4                   | 7014C       | 7014CDB | 7014CDF | 7014CDT | 47000                               | 76500  |                                     | 43000                               | 86500  | 8900            | 7100 | 12000                               | 9600                  | 76                    | 76                    | 104                  | 106                   | 1                   | 0.6         | 0.660 | 7014C |
|                          | 125 | 24 | 1.5     | 1                    | 16.1                  | 7214        | 7214DB  | 7214DF  | 7214DT  | 76500                               | 124000 |                                     | 63500                               | 127000 | 4500            | 3800 | 6300                                | 5000                  | 79                    | 75                    | 116                  | 119.6                 | 1.5                 | 1           | 1.12  | 7214  |
|                          | 125 | 24 | 1.5     | 1                    | 29.0                  | 7214B       | 7214BDB | 7214BDF | 7214BDT | 71500                               | 116000 |                                     | 59500                               | 120000 | 4300            | 3200 | 5600                                | 4500                  | 79                    | 75                    | 116                  | 119.6                 | 1.5                 | 1           | 1.12  | 7214B |
|                          | 125 | 24 | 1.5     | 1                    | −0.7                  | 7214C       | 7214CDB | 7214CDF | 7214CDT | 80000                               | 130000 |                                     | 65000                               | 130000 | 8200            | 6600 | 11000                               | 8800                  | 79                    | 79                    | 116                  | 119.6                 | 1.5                 | 1           | 1.12  | 7214C |
|                          | 150 | 35 | 2.1     | 1.1                  | 14.3                  | 7314        | 7314DB  | 7314DF  | 7314DT  | 125000                              | 203000 |                                     | 94000                               | 188000 | 4000            | 3200 | 5300                                | 4300                  | 82                    | 77                    | 138                  | 143                   | 2                   | 1           | 2.70  | 7314  |
|                          | 150 | 35 | 2.1     | 1.1                  | 28.7                  | 7314B       | 7314BDB | 7314BDF | 7314BDT | 118000                              | 191000 |                                     | 88500                               | 177000 | 3600            | 2900 | 4800                                | 3900                  | 82                    | 77                    | 138                  | 143                   | 2                   | 1           | 2.70  | 7314B |
|                          | 150 | 35 | 2.1     | 1.1                  | −4.8                  | 7314C       | 7314CDB | 7314CDF | 7314CDT | 127000                              | 206000 |                                     | 92500                               | 185000 | 7300            | 5800 | 10000                               | 8000                  | 82                    | 82                    | 138                  | 143                   | 2                   | 1           | 2.70  | 7314C |
| 75                       | 115 | 20 | 1.1     | 0.6                  | 17.4                  | 7015        | 7015DB  | 7015DF  | 7015DT  | 43500                               | 70500  |                                     | 41500                               | 83000  | 4800            | 3800 | 6300                                | 5000                  | 81                    | 81                    | 109                  | 111                   | 1                   | 0.6         | 0.695 | 7015  |
|                          | 115 | 20 | 1.1     | 0.6                  | 1.0                   | 7015C       | 7015CDB | 7015CDF | 7015CDT | 48500                               | 78500  |                                     | 46000                               | 92000  | 8400            | 6700 | 12000                               | 9600                  | 81                    | 81                    | 109                  | 111                   | 1                   | 0.6         | 0.695 | 7015C |
|                          | 130 | 25 | 1.5     | 1                    | 17.1                  | 7215        | 7215DB  | 7215DF  | 7215DT  | 79000                               | 129000 |                                     | 68500                               | 137000 | 4300            | 3400 | 5800                                | 4700                  | 84                    | 80                    | 121                  | 124.6                 | 1.5                 | 1           | 1.23  | 7215  |
|                          | 130 | 25 | 1.5     | 1                    | 30.6                  | 7215B       | 7215BDB | 7215BDF | 7215BDT | 74000                               | 120000 |                                     | 64000                               | 128000 | 4000            | 3200 | 5300                                | 4300                  | 84                    | 80                    | 121                  | 124.6                 | 1.5                 | 1           | 1.23  | 7215B |
|                          | 130 | 25 | 1.5     | 1                    | −0.7                  | 7215C       | 7215CDB | 7215CDF | 7215CDT | 83500                               | 135000 |                                     | 70000                               | 141000 | 7800            | 6200 | 11000                               | 8800                  | 84                    | 84                    | 121                  | 124.6                 | 1.5                 | 1           | 1.23  | 7215C |
|                          | 160 | 37 | 2.1     | 1.1                  | 15.4                  | 7315        | 7315DB  | 7315DF  | 7315DT  | 136000                              | 221000 |                                     | 106000                              | 212000 | 3800            | 3000 | 5000                                | 4000                  | 87                    | 82                    | 148                  | 153                   | 2                   | 1           | 3.15  | 7315  |
|                          | 160 | 37 | 2.1     | 1.1                  | 30.9                  | 7315B       | 7315BDB | 7315BDF | 7315BDT | 128000                              | 208000 |                                     | 100000                              | 200000 | 3400            | 2700 | 4500                                | 3600                  | 87                    | 82                    | 148                  | 153                   | 2                   | 1           | 3.15  | 7315B |
|                          | 160 | 37 | 2.1     | 1.1                  | −4.9                  | 7315C       | 7315CDB | 7315CDF | 7315CDT | 138000                              | 225000 |                                     | 104000                              | 209000 | 6800            | 5400 | 9400                                | 7500                  | 87                    | 87                    | 148                  | 153                   | 2                   | 1           | 3.15  | 7315C |

Remarks: 1. "a" means the distance between back face and load center.  
2. See page 122 regarding limiting speeds.