

Image may differ from product. See technical specification for details.

7228 BM

Single row angular contact ball bearing

These single row angular contact ball bearings can accommodate radial and axial loads acting simultaneously, where the axial load acts in one direction only. They can operate at high speeds and, depending on the variant, even very high speeds. They are more suitable than deep groove ball bearings for supporting large axial forces acting in one direction.

- High-speed capability
- Accommodate relatively high radial loads and large unilateral axial loads

Overview

Dimensions

Bore diameter	140 mm
Outside diameter	250 mm
Width	42 mm
Contact angle	40 °

Performance

Basic dynamic load rating	199 kN
Basic static load rating	212 kN
Reference speed	3 200 r/min
Limiting speed	3 600 r/min

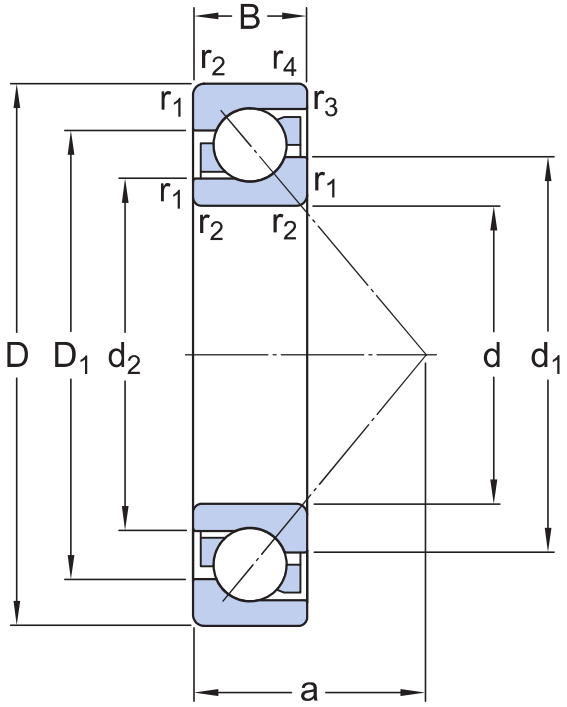
Properties

Contact type	Normal contact (two-point contact)
Number of rows	1
Locating feature, bearing outer ring	Without
Ring type	One-piece inner and outer rings
Cage	Machined brass
Matched arrangement	No
Axial internal clearance	Not applicable
Tolerance class	Normal
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Lubricant	None
Relubrication feature	Without
Indicative carbon footprint for new product	30.9 kg CO_2e

Logistics

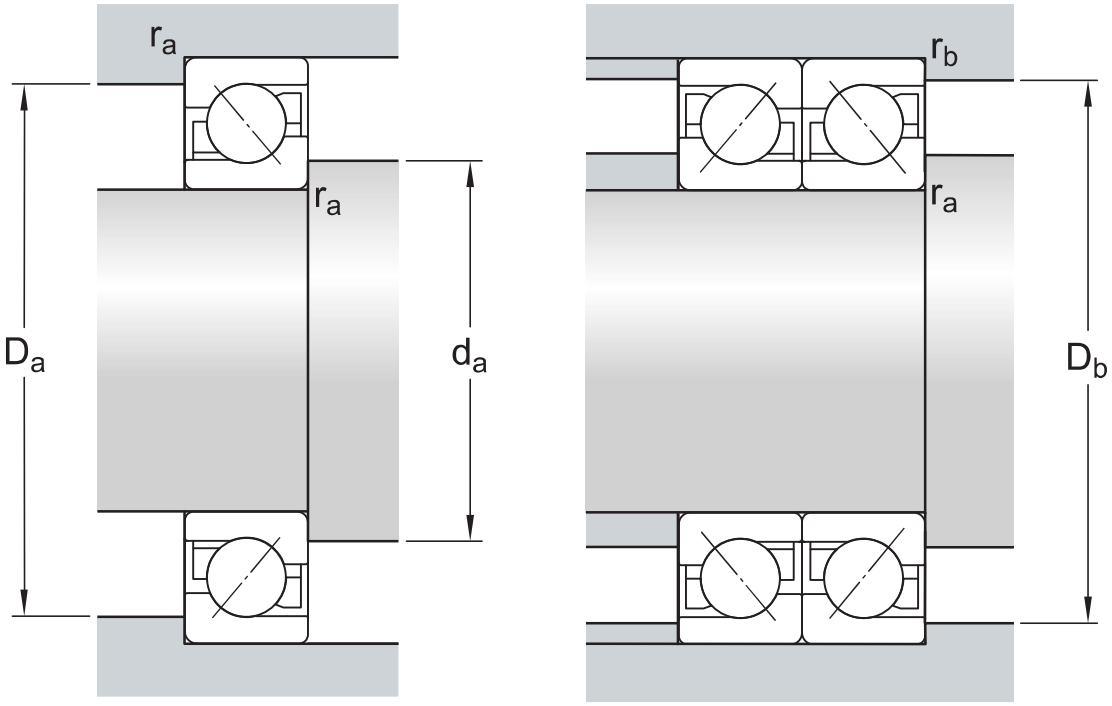
Product net weight	8.35 kg
eClass code	23-05-08-03
UNSPSC code	31171531

Technical specification



Dimensions

d	140 mm	Bore diameter
$t_{\Delta dmp}$	-0.025 – 0 mm	Deviation limits of mid-range bore diameter
D	250 mm	Outside diameter
$t_{\Delta Dmp}$	-0.03 – 0 mm	Deviation limits of mid-range outside diameter
B	42 mm	Width
$t_{\Delta Bs}$	-0.25 – 0 mm	Deviation limits of ring width
d_1	≈ 183.3 mm	Shoulder diameter of inner ring (large side face)
d_2	≈ 163.6 mm	Shoulder diameter of inner ring (small side face)
D_1	≈ 209.55 mm	Shoulder diameter of outer ring (large side face)
a	103 mm	Distance side face to pressure point
$r_{1,2}$	min. 3 mm	Chamfer dimension
$r_{3,4}$	min. 1.1 mm	Chamfer dimension
	Normal	ISO tolerance class for dimensions



Abutment dimensions

d_a	min. 154 mm	Diameter of shaft abutment
D_a	max. 236 mm	Abutment diameter housing
D_b	max. 243 mm	Diameter of housing abutment
r_a	max. 2.5 mm	Radius of fillet
r_b	max. 1 mm	Radius of fillet

Calculation data

Basic dynamic load rating	C	199 kN
Basic static load rating	C_0	212 kN
Fatigue load limit	P_u	6.4 kN
Reference speed		3 200 r/min
Limiting speed		3 600 r/min
Minimum axial load factor	A	0.76
Minimum radial load factor	k_r	0.08
Limiting value	e	1.1

SINGLE BEARING OR BEARING PAIR ARRANGED IN TANDEM

Calculation factor (single, tandem)	X	0.35

Calculation factor (single, tandem)	Y_0	0.26
Calculation factor (single, tandem)	Y_2	0.57

BEARING PAIR ARRANGED BACK-TO-BACK OR FACE-TO-FACE

Calculation factor (back-to-back, face-to-face)	X	0.57
Calculation factor (back-to-back, face-to-face)	Y_0	0.52
Calculation factor (back-to-back, face-to-face)	Y_1	0.55
Calculation factor (back-to-back, face-to-face)	Y_2	0.93

Tolerances of run-out

Range of section height at inner ring of assembled bearing	t_{Kia}	30 µm
Range of section height at outer ring of assembled bearing	t_{Kea}	50 µm
ISO tolerance class for geometrical tolerances		Normal

Tolerances and clearances

GENERAL BEARING SPECIFICATIONS

- Tolerances: Normal (metric), P6, P5, Normal (inch)
- Internal clearance: CA+CB+CC, G
- Preload: GA+GB+GC

BEARING INTERFACES

- Seat tolerances for standard conditions
- Tolerances and resultant fit

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