

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

BSD 2047 CGA

Super-precision single direction angular contact thrust ball bearing

These super-precision ball bearings offer very high running accuracy and are well suited for screw drive applications. They are also beneficial in other applications, where safe radial and axial support is required, together with extremely precise axial guidance of the shaft.

They provide a high degree of axial stiffness and can accommodate heavy axial loads in one direction, high speeds and rapid accelerations.

- Very high running accuracy
- High axial stiffness
- High axial load carrying capacity in one direction
- Universally matchable
- Well suited for screw drive applications

Overview

Dimensions

Bore diameter	20 mm
Outside diameter	47 mm
Height	15 mm
Contact angle	62 °

Performance

Basic dynamic load rating	22 kN
Basic static load rating	49 kN
Attainable speed for grease lubrication	9 000 r/min
Attainable speed for oil-air lubrication	12 000 r/min

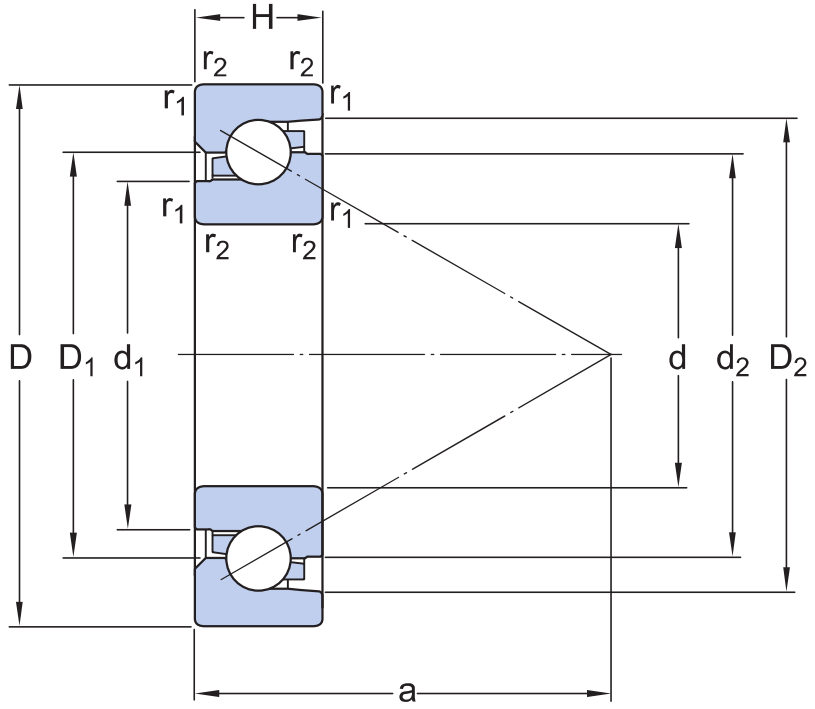
Properties

Axial load capability	Single-direction
Number of rows	1
Locating feature, bearing outer ring	None
Cage	Non-metallic
Tolerance class	Special
Material, bearing	Bearing steel
Coating	Without
Sealing	Without
Relubrication feature	Without

Logistics

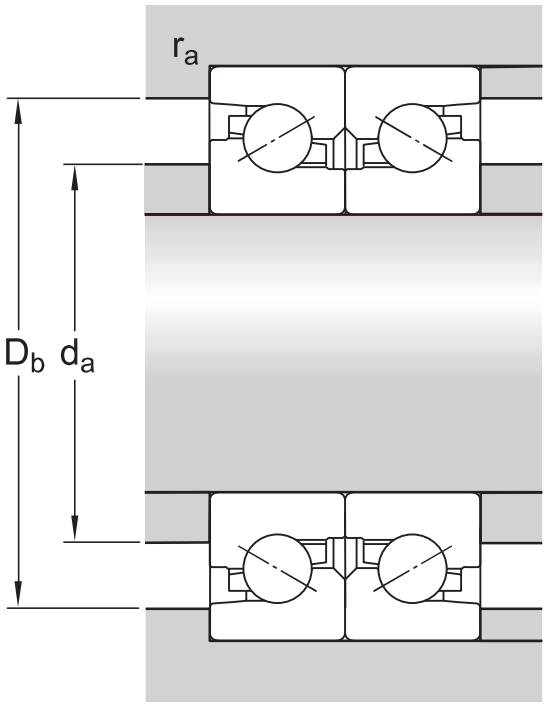
Product net weight	0.127 kg
eClass code	23-05-08-03
UNSPSC code	31171507

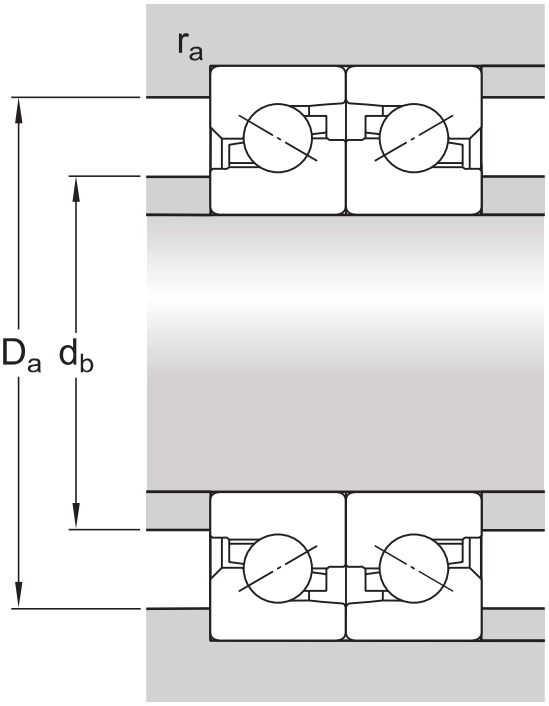
Technical specification



Dimensions

d	20 mm	Bore diameter
D	47 mm	Outside diameter
H	15 mm	Height
d_1	29.4 mm	Shoulder diameter
d_2	34.5 mm	Shoulder diameter
D_1	34.6 mm	Shoulder/recess diameter
D_2	40.65 mm	Shoulder/recess diameter
$r_{1,2}$	min. 1 mm	Chamfer dimension
a	40 mm	Distance to pressure point





Abutment dimensions

d_a	min. 27 mm	Diameter of shaft abutment
d_b	min. 27 mm	Diameter of shaft abutment
D_a	max. 42.5 mm	Diameter of housing abutment
D_b	max. 42.5 mm	Diameter of housing abutment
r_a	max. 1 mm	Radius of housing fillet

Calculation data

Basic dynamic load rating	C	22 kN
Basic static load rating	C_0	49 kN
Fatigue load limit	P_u	1.8 kN
Attainable speed for grease lubrication		9 000 r/min
Attainable speed for oil-air lubrication		12 000 r/min
Contact angle	α	62 °
Preload		1 480 N
Frictional moment		0.05 N·m
Axial stiffness for preload A (sets of two brgs back-to-back or face-to-face)		680 N/µm
Maximum axial load carrying capacity	F_a	max. 14.5 kN

Reference grease quantity	G_{ref}	1.4 cm^3

Tolerances and clearances

PRODUCT DETAILS

- Tolerances: table
- Bearing preload
- Design considerations: shafts, housings

PRINCIPLES OF BEARING SELECTION AND APPLICATION

- Chamfer dimensions
- Speed dependent initial grease fill → Initial grease fill

More Information

Product details

- Designs and variants
- Markings on bearings
- General bearing specifications
- Preload, clearance, and stiffness
- Frictional moment
- Loads
- Attainable speeds
- Design considerations
- Mounting
- Designation system

Engineering information

- Principles of bearing selection and application
- General bearing knowledge
- Bearing selection process
- Bearing failure and how to prevent it

Tools

- SimPro Quick
- SimPro Spindle
- Bearing Frequency Calculator
- LubeSelect for SKF greases
- Heater selection tool

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