

6209/HC5C3

Hybrid deep groove ball bearing



Hybrid single row deep groove ball bearings have rings made of bearing steel and rolling elements made of bearing grade silicon nitride (Si₃N₄), which make the bearings electrically insulating. Deep groove ball bearings are the most widely used bearing type, especially in electric motors. The silicon nitride elements not only provide protection from electric current damage but also, when compared to same-sized bearings with steel rolling elements, provide enhanced bearing performance, extended bearing service life, higher speed capability, high wear-resistance, high bearing stiffness, reduced risk of smearing and false (brinelling, and less sensitivity to temperature gradients. These characteristics make them suitable for use in difficult conditions and contaminated environments.

- Protected against electric current damage
- Especially suited for use in difficult conditions and contaminated environments
- Typical benefits of single row deep groove ball bearings

Overview

Dimensions

Bore diameter	45 mm
Outside diameter	85 mm
Width	19 mm

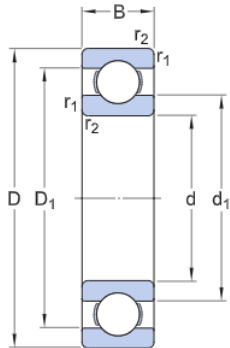
Performance

Basic dynamic load rating	33.2 kN
Basic static load rating	21.6 kN
Limiting speed	13 000 r/min
Reference speed	20 000 r/min

Properties

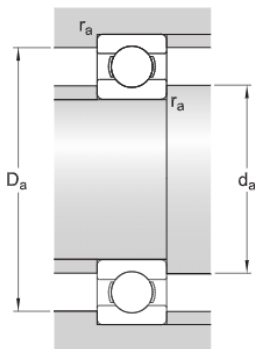
Bore type	Cylindrical
Cage	Sheet metal
Coating	Without
Filling slots	Without
Locating feature, bearing outer ring	None
Lubricant	None
Matched arrangement	No
Material, bearing	Hybrid
Number of rows	1
Radial internal clearance	C3
Relubrication feature	Without
Sealing	Without

Technical Specification



Dimensions

d	45 mm	Bore diameter
D	85 mm	Outside diameter
B	19 mm	Width
d ₁	≈ 57.6 mm	Shoulder diameter inner ring
D ₁	≈ 72.4 mm	Shoulder diameter outer ring
r _{1,2}	min. 1.1 mm	Chamfer dimension



Abutment dimensions

d _a	min. 52 mm	Abutment diameter shaft
D _a	max. 78 mm	Abutment diameter housing
r _a	max. 1 mm	Fillet radius

Calculation data

Basic dynamic load rating	C	33.2 kN
Basic static load rating	C ₀	21.6 kN
Fatigue load limit	P _u	0.67 kN
Reference speed		20 000 r/min
Limiting speed		13 000 r/min
Calculation factor	k _r	0.025
Calculation factor	f ₀	14.2

Mass

Mass bearing

0.37 kg

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