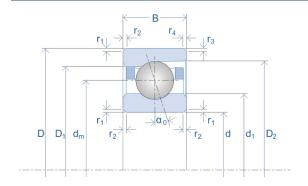


# Data Sheet High Precision Ball Bearings





Part Number	S 6209 E TA
Bearing Size	6209

# $egin{array}{c|cccc} D_a & d_b & & d_a & d_T & D_b \\ \hline Bearing Series & S & & & & \\ \hline \end{array}$

No

### **Bearing Dimensions**

Bore Diameter	d [mm]	45
Outer Diameter	D [mm]	85
Bearing Width	B [mm]	19
Pitch Circle	d <sub>m</sub> [mm]	65.0
Ball Diameter	D <sub>w</sub> [mm]	12.7
OD Inner Ring	d <sub>1</sub> [mm]	57.4
ID Outer Ring	D <sub>1</sub> [mm]	72.5
ID Outer Ring (Open Side)	D <sub>2</sub> [mm]	77.5
Chamfer	r <sub>1,2</sub> [mm]	1.1
Chamfer (Open Side)	r <sub>3,4</sub> [mm]	0.6

# **Bearing Load Ratings**

Dynamic Radial Load Rating	C [N]	43,500
Static Radial Load Rating Steel Balls	C <sub>0</sub> [N]	32,500
Static Radial Load Rating Si <sub>3</sub> N <sub>4</sub> balls	C <sub>0 HY</sub> [N]	22,600

#### **Bearing RPM Ratings**

Speed Value with Oil Lubrication	n <sub>oil</sub> [1/min]	22,500
Speed Value with Grease Lubrication	n <sub>grease</sub> [1/min]	17,000

#### **Geometrical Data**

Hybrid (Si<sub>3</sub>N<sub>4</sub> Balls)

Number of Balls	Z [Qty.]	14
Contact Angle	α <sub>0</sub> [°]	25
Bearing Weight	m [kg]	0.416

#### **Mating Part Dimensions**

Abutment Diameter Inner Ring	d <sub>a</sub> min. [mm]	53.0
Abutment Diameter Outer Ring	D <sub>a</sub> max. [mm]	77.0
Chamfer Associated Component	r <sub>a</sub> max. [mm]	1.0
Chamfer Associated Component (Open Side)	r₀ max. [mm]	0.6

# **Bearing Preload Data**

Light Pre-Load	Fv [N]	370
Light Axial Rigidity	C <sub>ax</sub> [N/µm]	169
Medium Pre-Load	F <sub>v</sub> [N]	1,100
Medium Axial Rigidity	C <sub>ax</sub> [N/µm]	257
Heavy Pre-Load	F <sub>v</sub> [N]	2,200
Heavy Axial Rigidity	C <sub>ax</sub> [N/µm]	346
Minimum Spring Pre-Load	F <sub>f</sub> [N]	1,580

#### Notes:

- 1. Position of the oiling Nozzle  $(d_T)$  for bearings with TA cage/ TXM cage upon request
- 2. The stated load and speed values are given for a spring preloaded single bearing with oil/air or oil mist lubrication. If specific applications differ, please consult correction factors and/or GMN USA engineers.