



|              |                         |
|--------------|-------------------------|
| Part Number  | <b>HY SM 61909 C TA</b> |
| Bearing Size | 61909                   |

|   |     |
|---|-----|
| Bearing Series                                | SM  |
| Hybrid (Si <sub>3</sub> N <sub>4</sub> Balls) | Yes |

**Bearing Dimensions**

|                           |                       |      |
|---------------------------|-----------------------|------|
| Bore Diameter             | d [mm]                | 45   |
| Outer Diameter            | D [mm]                | 68   |
| Bearing Width             | B [mm]                | 12   |
| Pitch Circle              | d <sub>m</sub> [mm]   | 56.5 |
| Ball Diameter             | D <sub>w</sub> [mm]   | 6.35 |
| OD Inner Ring             | d <sub>1</sub> [mm]   | 52.3 |
| ID Outer Ring             | D <sub>1</sub> [mm]   | 60.7 |
| ID Outer Ring (Open Side) | D <sub>2</sub> [mm]   | 62.7 |
| Chamfer                   | r <sub>1,2</sub> [mm] | 0.6  |
| Chamfer (Open Side)       | r <sub>3,4</sub> [mm] | 0.3  |

**Geometrical Data**

|                 |                    |       |
|-----------------|--------------------|-------|
| Number of Balls | Z [Qty.]           | 20    |
| Contact Angle   | α <sub>0</sub> [°] | 17    |
| Bearing Weight  | m [kg]             | 0.128 |

**Mating Part Dimensions**

|  |                          |      |
|--|--------------------------|------|
| Abutment Diameter Inner Ring             | d <sub>a</sub> min. [mm] | 50.0 |
| Abutment Diameter Outer Ring             | D <sub>a</sub> max. [mm] | 63.5 |
| Chamfer Associated Component             | r <sub>a</sub> max. [mm] | 0.6  |
| Chamfer Associated Component (Open Side) | r <sub>b</sub> max. [mm] | 0.15 |

**Bearing Load Ratings**

|  |                       |        |
|--|-----------------------|--------|
| Dynamic Radial Load Rating                                     | C [N]                 | 10,600 |
| Static Radial Load Rating Steel Balls                          | C <sub>0</sub> [N]    | 6,800  |
| Static Radial Load Rating Si <sub>3</sub> N <sub>4</sub> balls | C <sub>0 HY</sub> [N] | 4,800  |

**Bearing Preload Data**

|                         |                        |     |
|-------------------------|------------------------|-----|
| Light Pre-Load          | F <sub>v</sub> [N]     | 55  |
| Light Axial Rigidity    | C <sub>ax</sub> [N/μm] | 42  |
| Medium Pre-Load         | F <sub>v</sub> [N]     | 160 |
| Medium Axial Rigidity   | C <sub>ax</sub> [N/μm] | 64  |
| Heavy Pre-Load          | F <sub>v</sub> [N]     | 320 |
| Heavy Axial Rigidity    | C <sub>ax</sub> [N/μm] | 85  |
| Minimum Spring Pre-Load | F <sub>r</sub> [N]     | 365 |

**Bearing RPM Ratings**

|                                     |                             |        |
|-------------------------------------|-----------------------------|--------|
| Speed Value with Oil Lubrication    | n <sub>oil</sub> [1/min]    | 43,750 |
| Speed Value with Grease Lubrication | n <sub>grease</sub> [1/min] | 32,500 |

**Notes:**

1. Position of the oiling Nozzle (d<sub>r</sub>) 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.