

## PRODUCT DATASHEET

# ES-HG-S04-F25-R100

## Precision Transmission Component

Harmonic Component Sets | High-Torque Hat Component Set

### Product Overview

Precision Transmission Component with rated Torque 87 N·m, instantaneous Maximum Torque 369 N·m and start/Stop Peak Torque 204 N·m.

### Key Specifications

| PARAMETER                    | VALUE | UNIT    |
|------------------------------|-------|---------|
| Rated Torque                 | 87    | N·m     |
| Instantaneous Maximum Torque | 369   | N·m     |
| Start/Stop Peak Torque       | 204   | N·m     |
| Reduction Ratio              | 100   |         |
| Backlash                     | ≤20   | arc sec |
| Maximum Input Speed          | 5600  | r/min   |
| Allowable Average Torque     | 140   | N·m     |
| Frame Size                   | 25    |         |
| Weight                       | 0.46  | kg      |

## Technical Specifications

| PARAMETER                        | SPECIFICATION         | UNIT    | NOTES                                                                                                                                                                                                                                                                            |
|----------------------------------|-----------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PERFORMANCE</b>               |                       |         |                                                                                                                                                                                                                                                                                  |
| Rated Torque                     | 87                    | N·m     | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| Instantaneous Maximum Torque     | 369                   | N·m     | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| Start/Stop Peak Torque           | 204                   | N·m     | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| Backlash                         | ≤20                   | arc sec | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| Allowable Average Torque         | 140                   | N·m     | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| <b>MECHANICAL</b>                |                       |         |                                                                                                                                                                                                                                                                                  |
| Frame Size                       | 25                    |         | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| Weight                           | 0.46                  | kg      | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| Wave Generator Dimension T       | 12.8+0.10 / 16.3+0.10 | mm      | Frame Size: 25; Option Label: Wave generator - A φ11; Reduction Ratio: 100; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 25; Option Index: 1; Option Label: Wave generator - A φ14; Reduction Ratio: 100; Wave Generator Option: wave-generator-307ae5fd0846 |
| Wave Generator Bore U            | φ11H7 / φ14H7         |         | Frame Size: 25; Option Label: Wave generator - A φ11; Reduction Ratio: 100; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 25; Option Index: 1; Option Label: Wave generator - A φ14; Reduction Ratio: 100; Wave Generator Option: wave-generator-307ae5fd0846 |
| Wave Generator Keyway W          | 4JS9/P9 / 5JS9/P9     |         | Frame Size: 25; Option Label: Wave generator - A φ11; Reduction Ratio: 100; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 25; Option Index: 1; Option Label: Wave generator - A φ14; Reduction Ratio: 100; Wave Generator Option: wave-generator-307ae5fd0846 |
| <b>RELIABILITY</b>               |                       |         |                                                                                                                                                                                                                                                                                  |
| Design Life                      | 15000                 | h       | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| <b>ADDITIONAL SPECIFICATIONS</b> |                       |         |                                                                                                                                                                                                                                                                                  |
| Reduction Ratio                  | 100                   |         | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| Maximum Input Speed              | 5600                  | r/min   | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |
| Average Input Speed              | 3500                  | r/min   | Frame Size: 25; Reduction Ratio: 100                                                                                                                                                                                                                                             |



## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                     | VALUE                     |
|-------------------|---------------------------|---------------------------|
| Mechanical View 1 | Diameter of 12 holes      | 12 holes, diameter 4.5    |
|                   | Diameter of left 4 holes  | 4 holes, diameter 3.5     |
|                   | Diameter of right 4 holes |                           |
|                   | Hole angular spacing      | 30 degree angular spacing |
|                   | Left hole angular offset  | 15 degree angular offset  |
|                   | Right hole angular offset |                           |
|                   | Bolt circle diameter      | Bolt circle diameter 102  |

## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                         | VALUE                    |
|-------------------|-------------------------------|--------------------------|
| Mechanical View 2 | Upper axial distance          | 24 +0.4/0                |
|                   | Adjacent upper axial distance | 10                       |
|                   | Upper left local spacing      | 3.3                      |
|                   | Upper local thickness         | 3                        |
|                   | Minimum clearance             | Minimum 1.5              |
|                   | Maximum clearance             | Maximum 2                |
|                   | Middle local spacing          | 5.5                      |
|                   | Maximum outside diameter      | Maximum diameter 56      |
|                   | Minimum clearance diameter    | Minimum diameter 66      |
|                   | Shaft fit diameter            | Diameter 85 h6           |
|                   | Bore fit diameter             | Diameter 110 H7          |
|                   | Shaft fit diameter            | Diameter 88 h7           |
|                   | Shaft diameter                | Diameter 40              |
|                   | Diameter tolerance            | Diameter 110 -0.01/-0.03 |
|                   | Datum D                       |                          |
|                   | Chamfer                       | Chamfer C0.4             |
|                   | Component name                | Wave generator-A         |
|                   | Bottom axial distance         | 14.5 0/-0.1              |

## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                              | VALUE                                                   |
|-------------------|------------------------------------|---------------------------------------------------------|
| Mechanical View 3 | W labeled width                    | W dimension value Not specified                         |
|                   | 4-hole counterbore/depth callout   | 4 holes Ø3.5 with Ø6 counterbore or spotface, depth 3.5 |
|                   | Hole pitch circle diameter         | Ø77                                                     |
|                   | Process holes quantity             | Process holes quantity: 4                               |
|                   | 4 holes diameter                   | 4 holes Ø3.5                                            |
|                   | 16 holes diameter                  | 16 holes Ø4.5                                           |
|                   | U labeled feature                  | U value Not specified                                   |
|                   | Hole pitch circle diameter         | Ø32                                                     |
|                   | Angular spacing 11.25 degrees      | 11.25°                                                  |
|                   | 4 M5 threaded holes                |                                                         |
|                   | Angular spacing 33.75 degrees      | 33.75°                                                  |
|                   | Angular spacing 45 degrees         | 45°                                                     |
|                   |                                    |                                                         |
| Mechanical View 4 | View designation                   | View D                                                  |
|                   | Diameter 22 circular feature       | Diameter 22 mm                                          |
|                   | Diameter 18 circular feature       | Diameter 18 mm                                          |
|                   | Two M2.5 threaded holes with depth | 2 × M2.5 threaded holes, depth 5 mm                     |

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**01** Specifications are subject to change without notice. Verify the current product configuration before final design release.

**02** 2D drawings, CAD files and integration documentation are controlled documents and are supplied separately on request.