

## PRODUCT DATASHEET

# ES-HG-S03-F17-R100

## Precision Transmission Component

Harmonic Component Sets | High-Torque Cup Component Set

### Product Overview

Precision Transmission Component with rated Torque 31 Nm, instantaneous Maximum Torque 143 Nm and start/Stop Peak Torque 70 Nm.

### Key Specifications

| PARAMETER                    | VALUE | UNIT    |
|------------------------------|-------|---------|
| Rated Torque                 | 31    | Nm      |
| Instantaneous Maximum Torque | 143   | Nm      |
| Start/Stop Peak Torque       | 70    | Nm      |
| Reduction Ratio              | 100   |         |
| Backlash                     | ≤20   | arc sec |
| Maximum Input Speed          | 7300  | r/min   |
| Allowable Average Torque     | 51    | Nm      |
| Frame Size                   | 17    |         |
| Weight                       | 0.15  | kg      |

## Technical Specifications

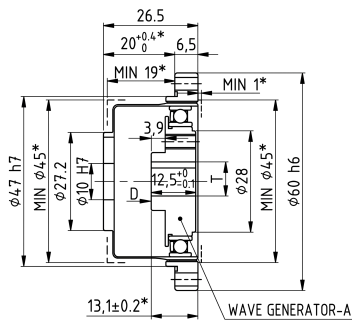
| PARAMETER                        | SPECIFICATION        | UNIT    | NOTES                                                                                                                                                                                                                                                                           |
|----------------------------------|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PERFORMANCE</b>               |                      |         |                                                                                                                                                                                                                                                                                 |
| Rated Torque                     | 31                   | Nm      | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| Instantaneous Maximum Torque     | 143                  | Nm      | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| Start/Stop Peak Torque           | 70                   | Nm      | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| Backlash                         | ≤20                  | arc sec | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| Allowable Average Torque         | 51                   | Nm      | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| <b>MECHANICAL</b>                |                      |         |                                                                                                                                                                                                                                                                                 |
| Frame Size                       | 17                   |         | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| Weight                           | 0.15                 | kg      | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| Wave Generator Dimension T       | 9.4+0.10 / 12.8+0.10 | mm      | Frame Size: 17; Option Label: Wave generator - A φ8; Reduction Ratio: 100; Wave Generator Option: wave-generator-e6e55a341aa3 / Frame Size: 17; Option Index: 1; Option Label: Wave generator - A φ11; Reduction Ratio: 100; Wave Generator Option: wave-generator-fd26f6670d9b |
| Wave Generator Bore U            | φ11H7 / φ8H7         |         | Frame Size: 17; Option Index: 1; Option Label: Wave generator - A φ11; Reduction Ratio: 100; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 17; Option Label: Wave generator - A φ8; Reduction Ratio: 100; Wave Generator Option: wave-generator-e6e55a341aa3 |
| Wave Generator Keyway W          | 4JS9/P9 / 3JS9/P9    |         | Frame Size: 17; Option Index: 1; Option Label: Wave generator - A φ11; Reduction Ratio: 100; Wave Generator Option: wave-generator-fd26f6670d9b / Frame Size: 17; Option Label: Wave generator - A φ8; Reduction Ratio: 100; Wave Generator Option: wave-generator-e6e55a341aa3 |
| <b>RELIABILITY</b>               |                      |         |                                                                                                                                                                                                                                                                                 |
| Design Life                      | 15000                | h       | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| <b>ADDITIONAL SPECIFICATIONS</b> |                      |         |                                                                                                                                                                                                                                                                                 |
| Reduction Ratio                  | 100                  |         | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| Maximum Input Speed              | 7300                 | r/min   | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |
| Average Input Speed              | 3500                 | r/min   | Frame Size: 17; Reduction Ratio: 100                                                                                                                                                                                                                                            |

## Dimensional & Integration Overview

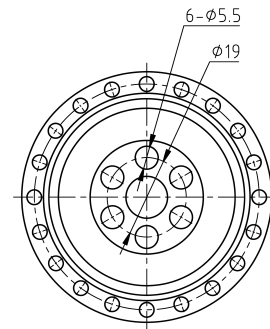
### Mechanical Overview

| PARAMETER                  | VALUE                | UNIT |
|----------------------------|----------------------|------|
| Frame Size                 | 17                   |      |
| Weight                     | 0.15                 | kg   |
| Wave Generator Dimension T | 9.4+0.10 / 12.8+0.10 | mm   |
| Wave Generator Bore U      | φ11H7 / φ8H7         |      |
| Wave Generator Keyway W    | 4JS9/P9 / 3JS9/P9    |      |

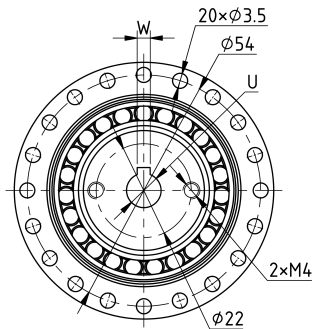
### Dimensional Drawings



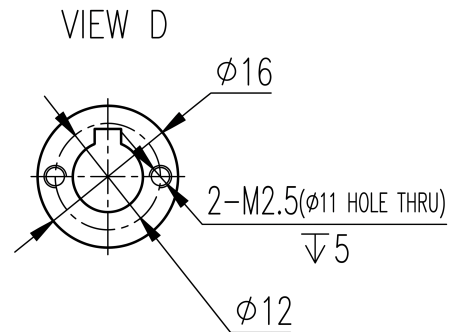
Mechanical View 1



Mechanical View 2



Mechanical View 3



Mechanical View 4

## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                                  | VALUE                  |
|-------------------|----------------------------------------|------------------------|
| Mechanical View 1 | Overall axial length                   | 26.5 mm                |
|                   | Axial length with unilateral tolerance | 20 mm +0.4/0           |
|                   | End axial length                       | 6.5 mm                 |
|                   | Minimum axial distance                 | Minimum 19 mm          |
|                   | Minimum end clearance                  | Minimum 1 mm           |
|                   | Local step width                       | 3.9 mm                 |
|                   | Minimum outside diameter               | Minimum diameter 45 mm |
|                   | Fit outside diameter                   | Diameter 47 mm h7      |
|                   | Diameter dimension                     | Diameter 27.2 mm       |
|                   | Hole diameter fit                      | Diameter 10 mm H7      |
|                   | Datum D                                |                        |
|                   | Axial dimension with tolerance         | 12.5 mm +0/-0.1        |
|                   | Right-side minimum outside diameter    | Minimum diameter 45 mm |
|                   | Diameter dimension                     | Diameter 28 mm         |
|                   | Fit outside diameter                   | Diameter 60 mm h6      |
|                   | Bottom axial dimension                 | 13.1 mm $\pm$ 0.2      |
|                   | Component label                        | WAVE GENERATOR-A       |

## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                                                  | VALUE                                                        |
|-------------------|--------------------------------------------------------|--------------------------------------------------------------|
| Mechanical View 2 | Flange mounting hole quantity and diameter             | 6 holes, diameter 5.5 mm                                     |
|                   | Central hole diameter                                  | Diameter 19 mm                                               |
| Mechanical View 3 | Twenty holes diameter                                  | 20 holes, diameter 3.5 mm                                    |
|                   | Slot width W                                           | W dimension designation, numeric value not specified in crop |
|                   | Diameter 54                                            | Diameter 54 mm                                               |
|                   | U designation                                          | U designation, numeric value not specified in crop           |
|                   | A datum or section identifier                          | A identifier                                                 |
|                   | Two M4 threaded holes                                  | 2 × M4 threaded holes                                        |
|                   | Diameter 22 hole                                       | Diameter 22 mm                                               |
| Mechanical View 4 | View direction                                         | View D                                                       |
|                   | Diameter callout                                       | Diameter 16 mm                                               |
|                   | Threaded hole specification with through-hole diameter | 2 × M2.5, Ø11 hole through                                   |
|                   | Depth-style callout                                    | Depth-style symbol 5 mm                                      |
|                   | Inner diameter callout                                 | Diameter 12 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.