PRODUCT DATASHEET

ES-HG-S27-F20-R80

Precision Transmission Component

Ultra-Thin Harmonic Gearboxes | Thin Cup Gear Unit

Product Overview

Precision Transmission Component with rated Torque 24 N·m, instantaneous Maximum Torque 89 N·m and start/Stop Peak Torque 51 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	24	N·m
Instantaneous Maximum Torque	89	N·m
Start/Stop Peak Torque	51	N·m
Reduction Ratio	80	
Backlash	≤20	arc sec
Maximum Input Speed	6500	r/min
Allowable Average Torque	33	N·m
Frame Size	20	
Weight	0.65	kg

Technical Specifications

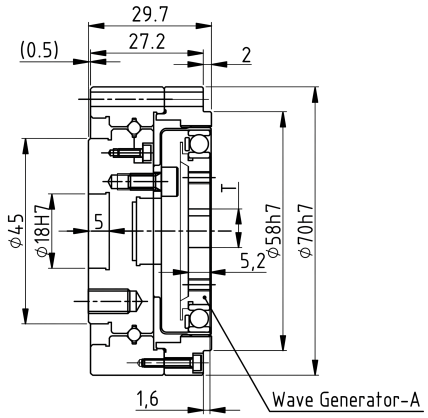
PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	24	N·m	Frame Size: 20; Reduction Ratio: 80
Instantaneous Maximum Torque	89	N·m	Frame Size: 20; Reduction Ratio: 80
Start/Stop Peak Torque	51	N·m	Frame Size: 20; Reduction Ratio: 80
Backlash	≤20	arc sec	Frame Size: 20; Reduction Ratio: 80
Allowable Average Torque	33	N·m	Frame Size: 20; Reduction Ratio: 80
MECHANICAL			
Frame Size	20		Frame Size: 20; Reduction Ratio: 80
Weight	0.65	kg	Frame Size: 20; Reduction Ratio: 80
Wave Generator Dimension T	9.4+0.10	mm	Frame Size: 20; Option Label: Wave generator - A φ8; Reduction Ratio: 80; Wave Generator Option: wave-generator-e6e55a341aa3
Wave Generator Bore U	φ20H7 / φ8H7		Frame Size: 20; Option Index: 1; Option Label: Wave generator - A φ 20; Reduction Ratio: 80; Wave Generator Option: wave-generator-8ff8b634f5df / Frame Size: 20; Option Label: Wave generator - A φ 8; Reduction Ratio: 80; Wave Generator Option: wave-generator-e6e55a341aa3
Wave Generator Keyway W	3JS9/P9		Frame Size: 20; Option Label: Wave generator - A φ8; Reduction Ratio: 80; Wave Generator Option: wave-generator-e6e55a341aa3
RELIABILITY			
Design Life	10000	h	Frame Size: 20; Reduction Ratio: 80
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	80		Frame Size: 20; Reduction Ratio: 80
Maximum Input Speed	6500	r/min	Frame Size: 20; Reduction Ratio: 80
Average Input Speed	3500	r/min	Frame Size: 20; Reduction Ratio: 80

Dimensional & Integration Overview

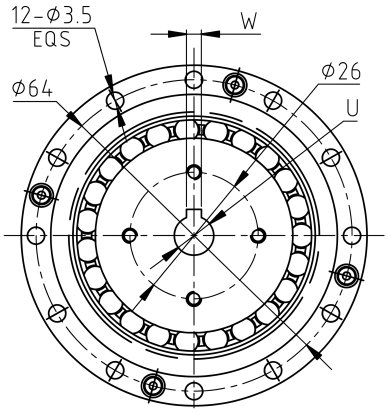
Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	20	
Weight	0.65	kg
Wave Generator Dimension T	9.4+0.10	mm
Wave Generator Bore U	φ20H7 / φ8H7	
Wave Generator Keyway W	3JS9/P9	

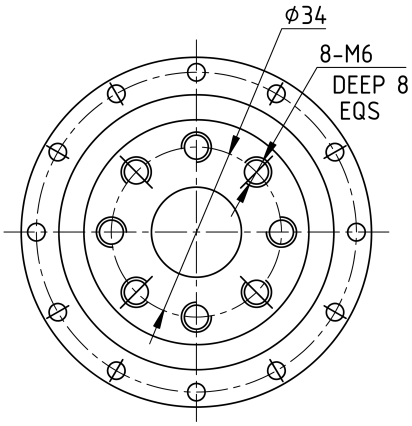
Dimensional Drawings



Mechanical View 1



Mechanical View 2



Mechanical View 3

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Wave generator overall length	29.7 mm
	Wave generator internal section length	27.2 mm
	Left protruding section length	0.5 mm (reference)
	Right protruding section length	2 mm
	Internal bore diameter with tolerance	φ18H7
	Left outer diameter	φ45 mm
	Groove depth or boss height	5 mm
	Middle shaft section diameter with tolerance	φ58h7
	Maximum outer diameter with tolerance	φ70h7
	Axial step or shoulder width	5.2 mm
	Bottom boss or mounting surface width	1.6 mm
	Component label	Wave Generator-A
Mechanical View 2	Mounting hole bolt circle	12 holes, φ3.5, equally spaced
	Outer diameter	φ64
	Center hole diameter	φ26

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 3	Threaded hole bolt circle diameter	Φ34
	Threaded hole specification and quantity	8 × M6 threaded holes
	Threaded hole depth	8 mm deep
	Threaded holes equally spaced	Equally spaced

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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.