PRODUCT DATASHEET

ES-HG-S07-F14-R100

Precision Transmission Component

Hat Harmonic Gearboxes | High-Torque Hat Unit Type I

Product Overview

Precision Transmission Component with rated Torque 10 N·m, instantaneous Maximum Torque 70 N·m and start/Stop Peak Torque 36 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	10	N·m
Instantaneous Maximum Torque	70	N·m
Start/Stop Peak Torque	36	N·m
Reduction Ratio	100	
Maximum Input Speed	8500	r/min
Allowable Average Torque	14	N·m
Backlash	≤20	arc sec
Frame Size	14	
Weight	0.4	kg

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	10	N·m	Frame Size: 14; Reduction Ratio: 100; Size: 14
Instantaneous Maximum Torque	70	N·m	Frame Size: 14; Reduction Ratio: 100; Size: 14
Start/Stop Peak Torque	36	N·m	Frame Size: 14; Reduction Ratio: 100; Size: 14
Backlash	≤20	arc sec	Reduction Ratio: 100; Size: 14; Frame Size: 14
Allowable Average Torque	14	N·m	Frame Size: 14; Reduction Ratio: 100; Size: 14
Starting Torque	2.8 / 0.028	N·m	Frame Size: 14; Reduction Ratio: 100; Size: 14 / Reduction Ratio: 100; Size: 14; Frame Size: 14
Angular Transmission Accuracy	1.5	arcmin	Frame Size: 14; Reduction Ratio: 100; Reduction Ratio Min: 50; Size: 14
Hysteresis Loss	1	arcmin	Frame Size: 14; Reduction Ratio: 100; Reduction Ratio Min: 50; Size: 14
MECHANICAL			
Frame Size	14		Frame Size: 14; Reduction Ratio: 100; Size: 14
Weight	0.4	kg	Frame Size: 14; Reduction Ratio: 100
Wave Generator Dimension T	16.3+0.10 / 9.4+0.10 / 12.8+0.10	mm	Varies by published configuration.
Wave Generator Bore U	φ11H7 / φ14H7 / φ8H7		Varies by published configuration.
Wave Generator Keyway W	5JS9/P9 / 4JS9/P9 / 3JS9/P9		Varies by published configuration.

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
RELIABILITY			
Design Life	15000	h	Frame Size: 14; Reduction Ratio: 100; Size: 14
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	100		Frame Size: 14; Reduction Ratio: 100; Size: 14
Maximum Input Speed	8500	r/min	Frame Size: 14; Reduction Ratio: 100; Size: 14
Average Input Speed	3500	r/min	Frame Size: 14; Reduction Ratio: 100; Size: 14
Wave Generator T	7^+0.1_0 / 9.4^+0.1_0	mm	Reduction Ratio: 100; Size: 14; Frame Size: 14 / Reduction Ratio: 100; Size: 14; Frame Size: 14; Option Index: 1
Wave Generator U	φ6H7 / φ8H7		Reduction Ratio: 100; Size: 14; Frame Size: 14 / Reduction Ratio: 100; Size: 14; Frame Size: 14; Option Index: 1
Wave Generator W	2JS9/P9 / 3JS9/P9		Reduction Ratio: 100; Size: 14; Frame Size: 14 / Reduction Ratio: 100; Size: 14; Frame Size: 14; Option Index: 1
Torsional Rigidity K2	0.61	×10⁴ N·m/rad	Frame Size: 14; Reduction Ratio: 100; Reduction Ratio Min: 50; Size: 14
Torsional Rigidity K1	0.47	×10⁴ N·m/rad	Frame Size: 14; Reduction Ratio: 100; Reduction Ratio Min: 50; Size: 14
Torsional Rigidity K3	0.71	×10⁴ N·m/rad	Frame Size: 14; Reduction Ratio: 100; Reduction Ratio Min: 50; Size: 14
Torsional Rigidity T2	6.9	N·m	Frame Size: 14; Reduction Ratio: 100; Reduction Ratio Min: 50; Size: 14
Torsional Rigidity T1	2	N·m	Frame Size: 14; Reduction Ratio: 100; Reduction Ratio Min: 50; Size: 14

Dimensional & Integration Overview

Mechanical Overview

PARAMETER	VALUE	UNIT
Frame Size	14	
Weight	0.4	kg
Wave Generator Dimension T	16.3+0.10 / 9.4+0.10 / 12.8+0.10	mm
Wave Generator Bore U	φ11H7 / φ14H7 / φ8H7	
Wave Generator Keyway W	5JS9/P9 / 4JS9/P9 / 3JS9/P9	

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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.