

PRODUCT DATASHEET

ES-HG-S06-F20-R160

Precision Transmission Component

Cup Harmonic Gearboxes | High-Torque Cup Unit Type II

Product Overview

Precision Transmission Component with rated Torque 52 N·m, instantaneous Maximum Torque 191 N·m and start/Stop Peak Torque 120 N·m.

Key Specifications

PARAMETER	VALUE	UNIT
Rated Torque	52	N·m
Instantaneous Maximum Torque	191	N·m
Start/Stop Peak Torque	120	N·m
Reduction Ratio	160	
Backlash	≤20 / 20	arc sec
Maximum Input Speed	6500	r/min
Allowable Average Torque	64	N·m
Frame Size	20	
Weight	0.96	kg

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
PERFORMANCE			
Rated Torque	52	Nm	
Instantaneous Maximum Torque	191	Nm	
Start/Stop Peak Torque	120	Nm	
Backlash	$\leq 20 / 20$	arc sec	
Allowable Average Torque	64	Nm	
Angular Transmission Accuracy	1	arc min	
Hysteresis Loss	1	arc min	
Starting Torque	3.6 / 0.036	Nm	
MECHANICAL			
Frame Size	20		
Weight	0.96	kg	
Wave Generator Dimension T	13.8+0.10 / 12.8+0.10 / 9.4+0.10	mm	Varies by published configuration.

Technical Specifications

PARAMETER	SPECIFICATION	UNIT	NOTES
MECHANICAL			
Wave Generator Bore U	$\phi 11H7 / \phi 8H7 / \phi 12H7$		Varies by published configuration.
Wave Generator Keyway W	4JS9/P9 / 3JS9/P9		Varies by published configuration.
RELIABILITY			
Design Life	15000	h	
ADDITIONAL SPECIFICATIONS			
Reduction Ratio	160		
Maximum Input Speed	6500	r/min	
Average Input Speed	3500	r/min	
Torsional Rigidity K1	1.6 / 16000	Nm/rad	
Torsional Rigidity K2	2.5 / 25000	Nm/rad	
Torsional Rigidity K3	2.9 / 29000	Nm/rad	
Torsional Rigidity T2	25	Nm	
Torsional Rigidity T1	7	Nm	

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 1	Maximum outside diameter	Diameter 93
	Fit shaft diameter	Diameter 56 h7
	Groove or O-ring specification callout	O-67 x 2
	Inner bore diameter	Diameter 21
	Local step dimensions	5.5 and 10 local dimensions
	Left-side height dimension	45.5 ± 0.2, note marked by asterisk
	Left-side height dimensions group	41 and 38
	Local height dimension	12.5
	Local dimension	10
	Local clearance or step dimension	0.5
	Fit bore diameter	Diameter 14 H7
	Groove or O-ring specification callout	O-40 x 1
	Cylindrical diameter	Diameter 45
		Diameter 70
	Fit outside diameter	Diameter 72 h7

2D Drawing Dimensions & Callouts

VIEW	FIELD	VALUE
Mechanical View 2	Threaded hole quantity and thread size	8 × M5 threaded holes
	W dimension	W dimension, value Not specified
	Through hole quantity and diameter	8 × Ø5.5 holes
	Bolt circle diameter	Ø82 bolt circle diameter
	U label	U label, value Not specified
Mechanical View 3	Threaded mounting hole quantity and size	8 × M6 threaded holes
	Mounting hole pitch circle diameter	Pitch circle diameter Ø32

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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.