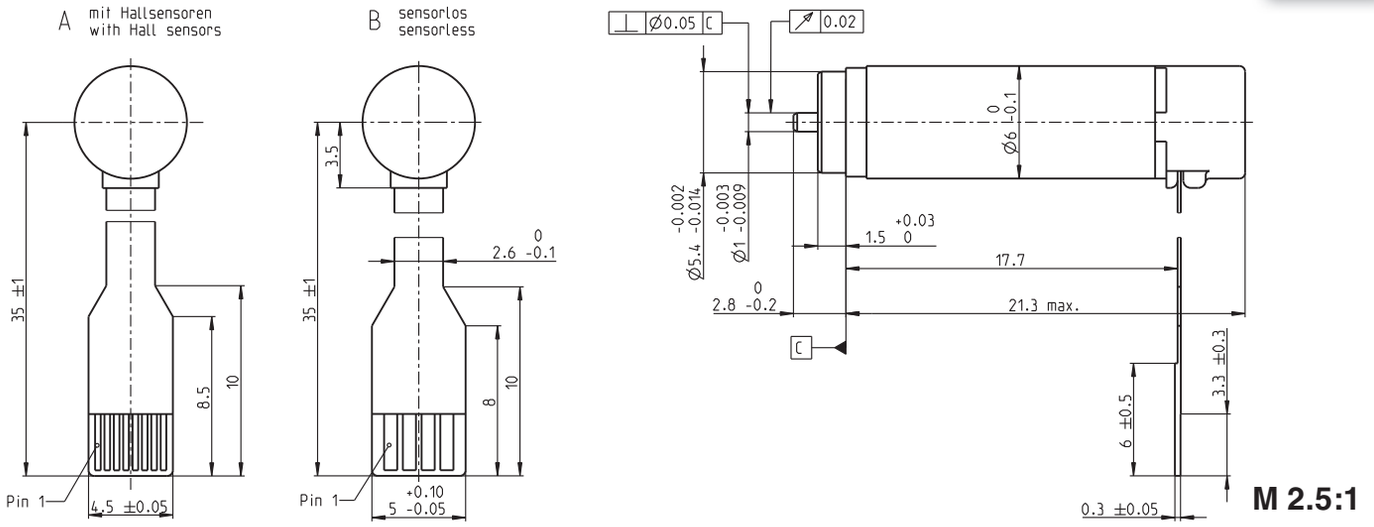
EC 6 ∅6 mm, brushless, 2 Watt

NEW



Stock program
Standard program
Special program (on request)

Part Numbers

A with Hall sensors	455417	**455418**	455419						
B sensorless	455420	455421	455422						

Motor Data (provisional)									
Values at nominal voltage									
1 Nominal voltage	V	3	6	12					
2 No load speed	rpm	65400	55600	56300					
3 No load current	mA	124	49.7	25.1					
4 Nominal speed	rpm	37600	38200	41000					
5 Nominal torque (max. continuous torque)	mNm	0.481	0.475	0.49					
6 Nominal current (max. continuous current)	A	1.25	0.519	0.269					
7 Stall torque	mNm	1.18	1.58	1.87					
8 Starting current	A	2.82	1.58	0.947					
9 Max. efficiency	%	63	68	71					
Characteristics									
10 Terminal resistance phase to phase	Ω	1.07	3.79	12.7					
11 Terminal inductance phase to phase	mH	0.005	0.03	0.118					
12 Torque constant	mNm/A	0.418	0.997	1.98					
13 Speed constant	rpm/V	22800	9570	4830					
14 Speed/torque gradient	rpm/mNm	58200	36400	30900					
15 Mechanical time constant	ms	4.28	2.68	2.27					
16 Rotor inertia	gcm²	0.00703	0.00703	0.00703					

Specifications

Thermal data

17	Thermal resistance housing-ambient	65.8 K/W
18	Thermal resistance winding-housing	13.2 K/W
19	Thermal time constant winding	1.34 s
20	Thermal time constant motor	70.4 s
21	Ambient temperature	-20...+100°C
22	Max. permissible winding temperature	+125°C

Mechanical data (preloaded ball bearings)

23	Max. permissible speed		100 000 rpm
24	Axial play at axial load	< 0.15 N	0 mm
		> 0.15 N	max. 0.06 mm
25	Radial play		preloaded
26	Max. axial load (dynamic)		0.1 N
27	Max. force for press fits (static)		10 N
28	Max. radial load, 2 mm from flange		2 N

Other specifications

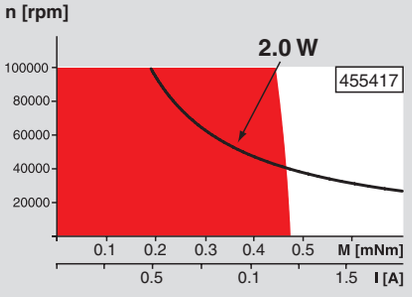
29	Number of pole pairs	1
30	Number of phases	3
31	Weight of motor	3 g

Values listed in the table are nominal.

Connection	**with hall sensors**	**sensorless**
Pin 1	Motor winding 1	Motor winding 1
Pin 2	Motor winding 2	Motor winding 2
Pin 3	Motor winding 3	Motor winding 3
Pin 4	V_{Hall} 3.8...24 VDC	N.C.
Pin 5	GND	
Pin 6	Hall sensor 1	
Pin 7	Hall sensor 2	
Pin 8	Hall sensor 3	
Connector	**Part number**	**Part number**
Molex	52745-0897	52207-0433
Molex		52089-0419
Tyco		84953-4
FCI	SFV8R-2STE1LF	

Pin for design with Hall sensors:
FPC, 8 pole, pitch 0.5 mm, top contact style
Wiring diagram for Hall sensors see page 33

Operating Range



Comments

Continuous operation
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.

Short term operation
The motor may be briefly overloaded (recurring).

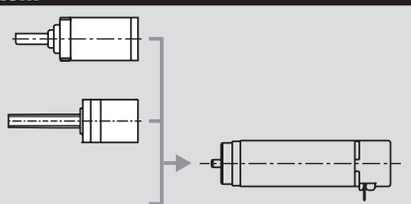
Assigned power rating

maxon Modular System

Overview on page 20–25

Planetary Gearhead
∅6 mm
0.002 - 0.03 Nm
Page 242

Spindle Drive
∅6 mm
Page 293



Recommended Electronics:

ESCON 36/3 EC	Page 342
ESCON Mod. 50/4 EC-S	343
DEC Module 24/2	346
Note	**24**