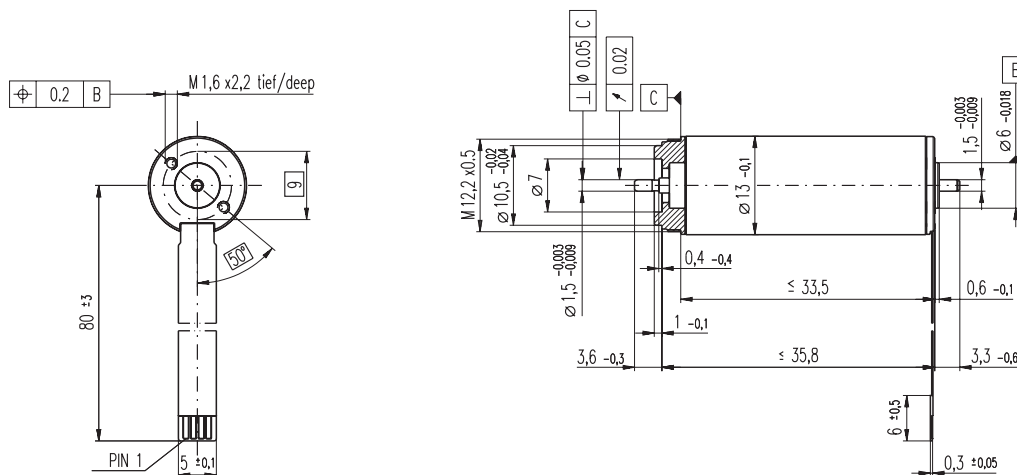


# EC 13 $\varnothing$ 13 mm, brushless, 12 Watt



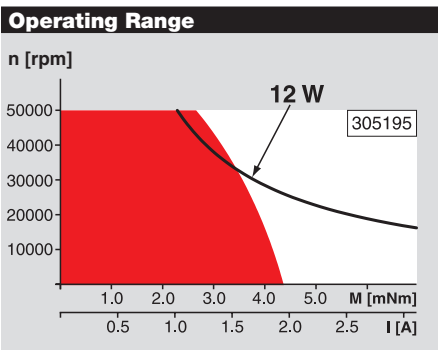
M 1:1

- Stock program
- Standard program
- Special program (on request)

Order Number							
305195	305196	305197	305198	305199	305200		

Motor Data (provisional)										
Values at nominal voltage										
1	Nominal voltage	V	6.0	9.0	12.0	18.0	24.0	36.0		
2	No load speed	rpm	25500	25600	25500	26300	25500	28100		
3	No load current	mA	229	153	114	79.2	57.2	43.3		
4	Nominal speed	rpm	20100	20600	20100	21300	20200	23100		
5	Nominal torque (max. continuous torque)	mNm	4.73	5.2	4.73	5.11	4.79	4.98		
6	Nominal current (max. continuous current)	A	2.36	1.71	1.18	0.867	0.595	0.454		
7	Stall torque	mNm	23.2	27.7	23.2	27.7	23.7	28.7		
8	Starting current	A	10.5	8.40	5.27	4.32	2.69	2.39		
9	Max. efficiency	%	73	75	73	75	73	75		
Characteristics										
10	Terminal resistance phase to phase	$\Omega$	0.569	1.07	2.28	4.17	8.93	15.0		
11	Terminal inductance phase to phase	mH	0.0103	0.0233	0.0413	0.0879	0.165	0.308		
12	Torque constant	mNm / A	2.20	3.30	4.40	6.42	8.80	12.0		
13	Speed constant	rpm / V	4340	2890	2170	1490	1090	795		
14	Speed / torque gradient	rpm / mNm	1120	940	1120	966	1100	996		
15	Mechanical time constant	ms	3.82	3.19	3.82	3.29	3.74	3.39		
16	Rotor inertia	gcm <sup>2</sup>	0.325	0.325	0.325	0.325	0.325	0.325		

Specifications		
<b>Thermal data</b>		
17	Thermal resistance housing-ambient	23.9 K / W
18	Thermal resistance winding-housing	1.26 K / W
19	Thermal time constant winding	0.6 s
20	Thermal time constant motor	263 s
21	Ambient temperature	-40 ... +100°C
22	Max. permissible winding temperature	+155°C
<b>Mechanical data (preloaded ball bearings)</b>		
23	Max. permissible speed	50000 rpm
24	Axial play at axial load < 1 N	0 mm
	> 1 N	max. 0.05 mm
25	Radial play	preloaded
26	Max. axial load (dynamic)	1 N
27	Max. force for press fits (static) (static, shaft supported)	40 N
28	Max. radial loading, 5 mm from flange	250 N
		4 N
<b>Other specifications</b>		
29	Number of pole pairs	1
30	Number of phases	3
31	Weight of motor	25 g



**Comments**

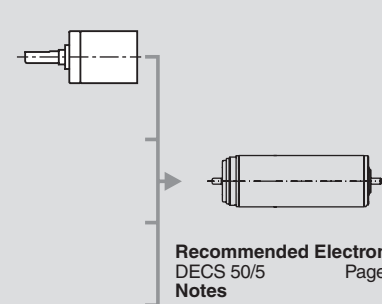
**Continuous operation**  
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.  
= Thermal limit.

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

— **Assigned power rating**

**maxon Modular System** Overview on page 16 - 21

**Planetary Gearhead**  
 $\varnothing$ 13 mm  
 0.2 - 0.35 Nm  
 Page 218



**Recommended Electronics:**  
 DECS 50/5 Page 284  
 Notes 20

**Connection**  
 Pin 1 Motor winding 1  
 Pin 2 Motor winding 2  
 Pin 3 Motor winding 3  
 Pin 4 N.C.

Values listed in the table are nominal.

Connector	Article number
TYCO	84953-4
MOLEX	52207-0485
MOLEX	52089-0419

**Option**  
 Hall sensors on request  
 Encoder MR on request