

MC1223 Series

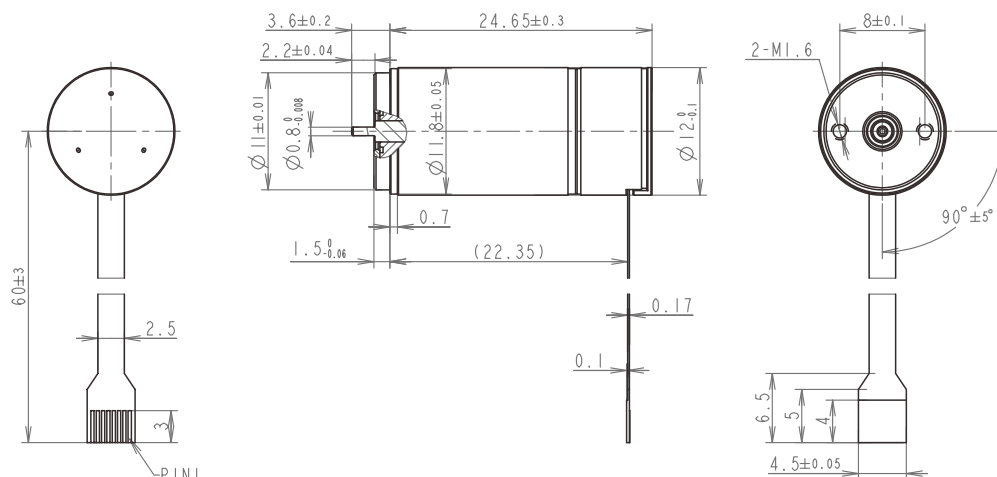
Φ12mm Brushless Coreless Motor

Key Features

- Two magnetic pole
- 25400rpm
- 1.8mNm
- 3.3mNm/A



Dimensional Drawing



Motor Data (Rated)

Rated voltage (V)	12	12
No-Load Speed (rpm)	33000	19000
No-Load Current (A)	0.13	0.08
Rated speed (rpm)	25400	15300
Rated torque (mNm)	1.8	0.98
Rated current (A)	0.67	0.26
Stall torque (mNm)	8.6	5.3
Stall current (A)	2.8	1.1
Max. efficiency (%)	61.2	52.1

Motor Constant (Rated)

Phase-to-Phase Resistance (Ω)	4.2	11.75
Phase-to-Phase inductance (mH)	0.071	0.198
Torque constant (mNm/A)	3.3	5.6
Speed constant (rpm/V)	2857	1695
Speed/torque gradient (rpm/mNm)	3819	3557
Mechanical time constant (ms)	4.56	4.28
Rotor inertia (gcm ²)	0.126	0.126

Thermal Data

Thermal resistance housing-ambient (K/W)		
Thermal resistance winding-housing (K/W)		
Thermal time constant winding (s)		
Thermal time constant motor (s)		
Ambient temperature (°C)	-20~+100	-20~+100
Max. winding temperature (°C)	125	125

Mechanical Data (Ball Bearing)

Max. allowable speed (rpm)	40 000
Max. axial play (mm)	< 0.15 N 0 > 0.15 N 0.06 (max)
Radial play	preloaded
Max. axial load dynamic(N)	2
Max. force for press fits (static) (N)	10
Max. radial load (2 mm from flange) (N)	5

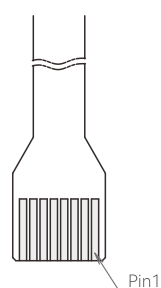
Note: Specifications can be customized per customer requirements.

Terminal Type

Molex 52745-1297	SL-FPC0.5-8P-H1.0
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Terminal Definition



pin 1 Motor Winding 1	pin 1 Motor Winding 1
pin 2 Motor Winding 1	pin 2 Motor Winding 2
pin 3 Motor Winding 2	pin 3 Motor Winding 3
pin 4 Motor Winding 2	pin 4 VHall (3.3-5.5 VDC)
pin 5 Motor Winding 3	pin 5 Grounding
pin 6 Motor Winding 3	pin 6 CISN I
pin 7 Grounding	pin 7 CLK I
pin 8 Grounding	pin 8 DIO I
pin 9 VHall (3.3-5.5 VDC)	
pin 10 Hall sensor 1	
pin 11 Hall sensor 2	
pin 12 Hall sensor 3	