

# MC0824 Series

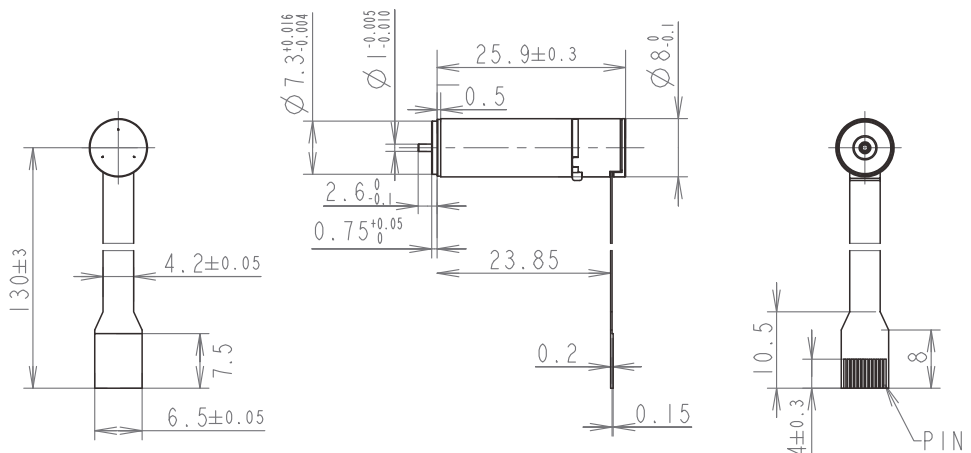
**Φ8mm** Brushless Coreless Motor

## Key Features

- Two magnetic pole
- 25500rpm
- 0.85mNm
- 2.22mNm/A



## Dimensional Drawing



## Motor Data (Rated)

|                     |       |
|---------------------|-------|
| Rated voltage (V)   | 12    |
| No-Load Speed (rpm) | 38500 |
| No-Load Current (A) | 0.07  |
| Rated speed (rpm)   | 25500 |
| Rated torque (mNm)  | 0.85  |
| Rated current (A)   | 0.5   |
| Stall torque (mNm)  | 3.5   |
| Stall current (A)   | 1.65  |
| Max. efficiency (%) | 67    |

## Motor Constant (Rated)

|                                   |       |
|-----------------------------------|-------|
| Phase-to-Phase Resistance (Ω)     | 8.4   |
| Phase-to-Phase inductance (mH)    | 0.05  |
| Torque constant (mNm/A)           | 2.22  |
| Speed constant (rpm/V)            | 3155  |
| Speed/torque gradient (rpm/mNm)   | 11000 |
| Mechanical time constant (ms)     | 2.87  |
| Rotor inertia (gcm <sup>2</sup> ) | 0.024 |

## Thermal Data

|                                          |          |
|------------------------------------------|----------|
| Thermal resistance housing-ambient (K/W) | 56.6     |
| Thermal resistance winding-housing (K/W) | 11.5     |
| Thermal time constant winding (s)        | 3.7      |
| Thermal time constant motor (s)          | 120      |
| Ambient temperature (°C)                 | -20~+100 |
| Max. winding temperature (°C)            | 125      |

## Mechanical Data (Ball Bearing)

|                                         |                                   |
|-----------------------------------------|-----------------------------------|
| Max. allowable speed (rpm)              | 40 000                            |
| Max. axial play (mm)                    | < 0.15 N 0<br>> 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                                 |

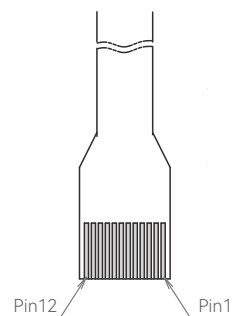
Note: Specifications can be customized per customer requirements.

## Terminal Type

Molex 52745-1297

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## Terminal Definition



|        |                     |
|--------|---------------------|
| pin 1  | Motor Winding 3     |
| pin 2  | Motor Winding 2     |
| pin 3  | Motor Winding 1     |
| pin 4  | Grounding           |
| pin 5  | VHall (3.3-5.5 VDC) |
| pin 6  | Hall sensor 3       |
| pin 7  | Hall sensor 2       |
| pin 8  | Hall sensor 1       |
| pin 9  | None                |
| pin 10 | None                |
| pin 11 | None                |
| pin 12 | None                |