

## PRODUCT DATASHEET

# ES-DC-SL06-M001

## Slotted Series

Slotted Series | ES-DC-SL06 57 mm Slotted Brushless DC Motor Series

### Product Overview

Slotted Series with rated Torque 0.119 Nm, rated Speed 3000 rpm and continuous Rated Output Power 37.4 W.

### Key Specifications

| PARAMETER                     | VALUE              | UNIT |
|-------------------------------|--------------------|------|
| Rated Torque                  | 0.119              | N·m  |
| Rated Speed                   | 3000               | rpm  |
| Continuous Rated Output Power | 37.4               | W    |
| Rated Voltage                 | 24                 | V    |
| Continuous Rated Current      | 2.2                | A    |
| Instantaneous Maximum Current | 6.6                | A    |
| Body Length                   | 50                 | mm   |
| Dielectric strength           | 500VAC/1KHz/1mA/1s |      |
| Duty Cycle                    | S1                 |      |

## Technical Specifications

| PARAMETER                     | SPECIFICATION      | UNIT   |
|-------------------------------|--------------------|--------|
| PERFORMANCE                   |                    |        |
| Rated Torque                  | 0.119              | Nm     |
| Rated Speed                   | 3000               | rpm    |
| Continuous Rated Output Power | 37.4               | W      |
| No-Load Rotational Speed      | 4000               | rpm    |
| Motor efficiency              | 78                 | %      |
| ELECTRICAL                    |                    |        |
| Rated Voltage                 | 24                 | V      |
| Continuous Rated Current      | 2.2                | A      |
| Instantaneous Maximum Current | 6.6                | A      |
| Dielectric strength           | 500VAC/1KHz/1mA/1s |        |
| Insulation Resistance         | 100 MOhm 20C       |        |
| Duty Cycle                    | S1                 |        |
| Rotational Back-EMF Constant  | 5.66               | V/krpm |
| No-load Current               | 0.25               | A      |

## Technical Specifications

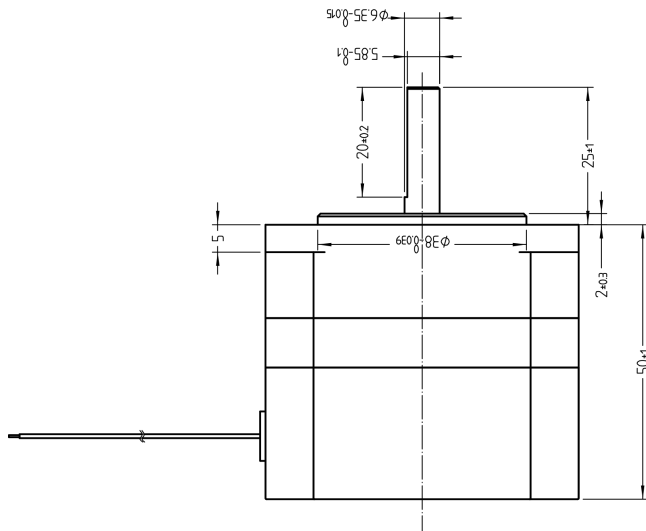
| PARAMETER                             | SPECIFICATION | UNIT               |
|---------------------------------------|---------------|--------------------|
| ELECTRICAL                            |               |                    |
| Line resistance                       | 0.958         | $\Omega$           |
| Line inductance                       | 0.742         | mH                 |
| THERMAL                               |               |                    |
| Housing-to-Ambient Thermal Resistance | 0.53          | K/W                |
| Maximum Winding Temperature           | 77.4          | $^{\circ}\text{C}$ |
| MECHANICAL                            |               |                    |
| Body Length                           | 50            | mm                 |
| Housing Type                          | No housing    |                    |
| Frame size                            | 57            | mm                 |
| Housing shape                         | Square        |                    |
| Commutation angle                     | 120           | $^{\circ}$         |
| Motor Weight                          | 0.42          | g                  |
| ENVIRONMENTAL                         |               |                    |
| Noise                                 | $\leq 50$     | dB                 |
| Ambient temperature                   | 29            | $^{\circ}\text{C}$ |

## Dimensional & Integration Overview

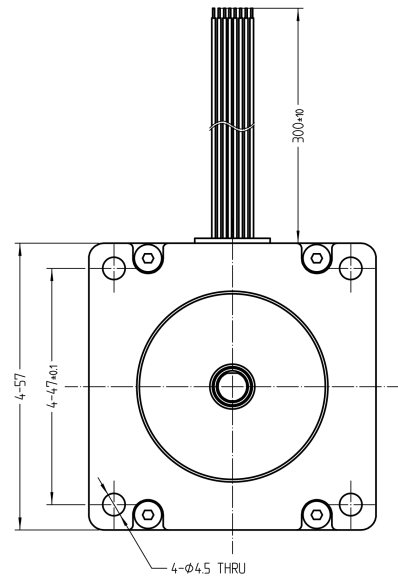
### Mechanical Overview

| PARAMETER         | VALUE      | UNIT |
|-------------------|------------|------|
| Body Length       | 50         | mm   |
| Housing Type      | No housing |      |
| Frame size        | 57         | mm   |
| Housing shape     | Square     |      |
| Commutation angle | 120        | °    |
| Motor Weight      | 0.42       | g    |

### Dimensional Drawings



Mechanical View 1



Mechanical View 2

## 2D Drawing Dimensions & Callouts

| VIEW              | FIELD                              | VALUE                |
|-------------------|------------------------------------|----------------------|
| Mechanical View 1 | Shaft end diameter (upper section) | $\Phi 6.35$ 0/-0.015 |
|                   | Shaft end diameter (lower section) | $\Phi 5.85$ 0/-0.1   |
|                   | Shaft extension length             | 20 $\pm$ 0.2         |
|                   | Mounting face height               | 25 $\pm$ 1           |
|                   | Left boss width                    | 5                    |
|                   | Main body outer diameter           | $\Phi 38$ +0.039/0   |
|                   | Mounting boss thickness            | 2 $\pm$ 0.3          |
|                   | Total body length                  | 50 $\pm$ 1           |
| Mechanical View 2 | Shaft length                       | 300 $\pm$ 10         |
|                   | Mounting hole diameter             | 4- $\Phi 4.5$ THRU   |
|                   | Mounting hole PCD                  | 4-47 $\pm$ 0.1       |
|                   | Mounting face dimension            | 4-57                 |

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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.