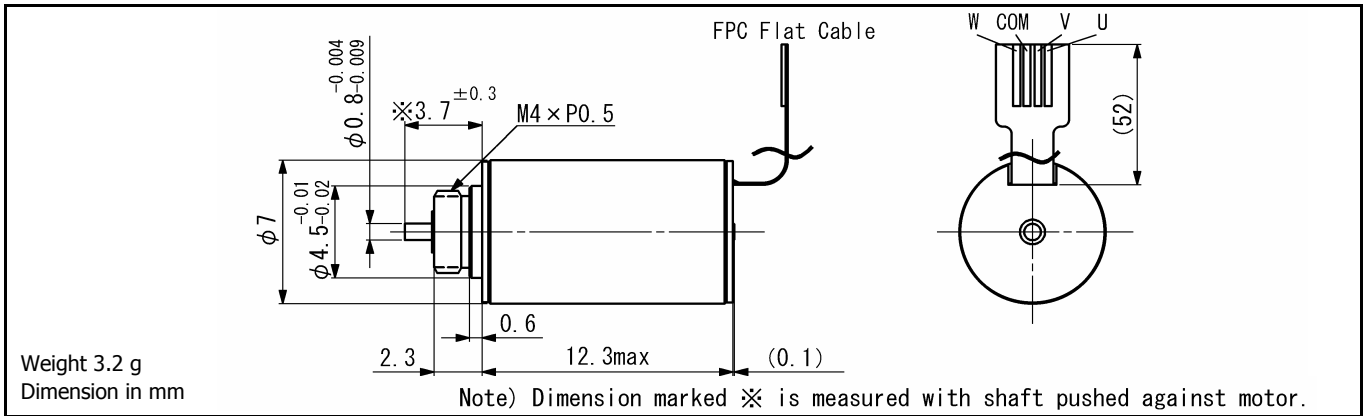


# SBL07-12

Electronically commutated sensorless motor, slotless stator design



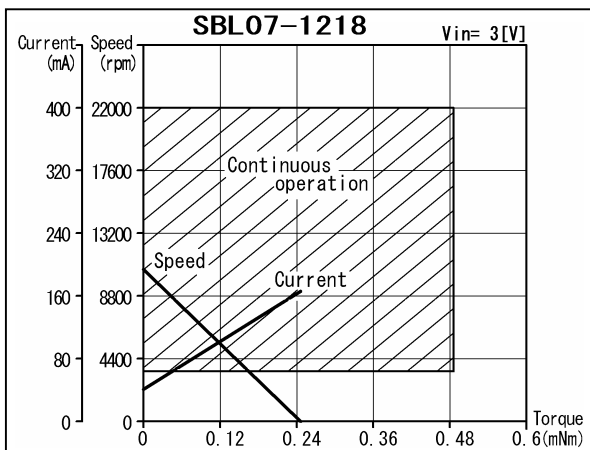
Sensorless drive circuit SSD07

Planetary gearhead SPG07

Ordering number				SBL07-1218
1 Nominal voltage				3 V
2 Terminal resistance				18 Ω
3 Output power				0.07 W
4 Efficiency				25 %
5 No-load speed				10650 rpm
6 No-load current				41 mA
7 Stall torque				0.25 mNm
8 Friction torque				0.1 mNm
9 Back-EMF constant				0.21 mV/rpm
10 Torque constant				2.03 mNm/A
11 Slope of N-T curve				41977 rpm/mNm
12 Coil inductance				0.13 mH
13 Mechanical time constant (starting oscillating time neglected)				5.2 ms
14 Rotor inertia				0.012 gcm <sup>2</sup>

### Continuous operation

15 Speed range				3500...22000 rpm
16 Max. torque				0.49 mNm



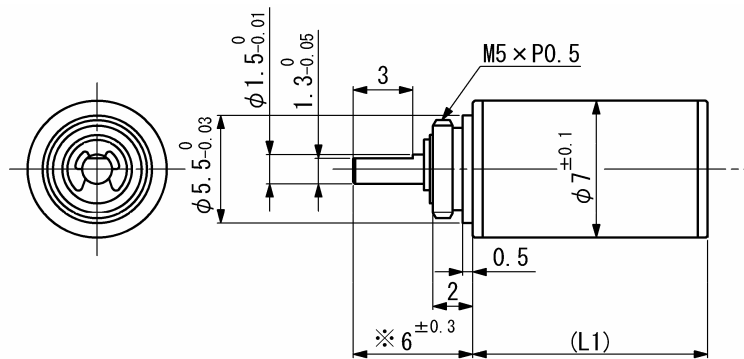
### General specifications

17 Operating temperature	-20...+80	°C
18 Max. coil temperature	+90	°C
19 Thermal resistances	$R_{th1} = 4.4, R_{th2} = 32$	K/W
20 Bearings type	Sintered sleeves	
21 Max. shaft radial load	0.27 (3.7 mm)	N
22 Max. shaft axial load	0.1	N
23 Max. axial load at standstill	20	N
24 Shaft radial play	0.015	mm
25 Shaft axial play	0.23	mm

**Options:** Shaft length, special coils.

# SPG07

## Planetary gearhead



Dimension in mm

Note) Dimension marked ※ is measured with shaft pushed against gearhead.

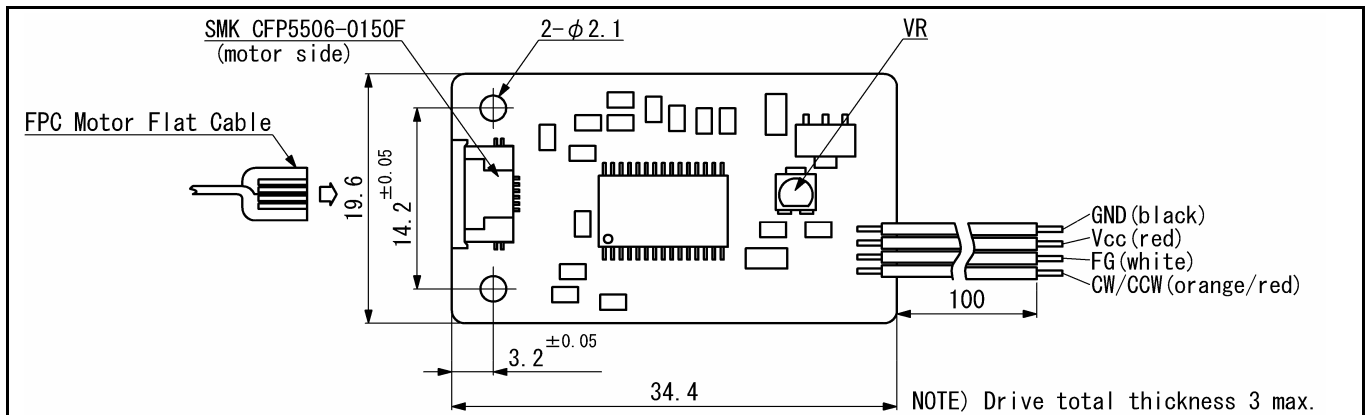
For combination with motors: SCL07-17, SBL07-12

General specifications	SPG07	
Housing material	Metal	
Geartrain material	Steel	
Recommended max. input speed	12000	rpm
Operating temperature range	-10...+60	°C
Backlash at no-load per stage	≤ 1	°
Bearings on output shaft	Sintered sleeve bearings	
Max. shaft radial load (4.5 mm from flange)	1	N
Max. shaft axial load	0.5	N
Max. shaft press fit force	10	N
Shaft radial play	≤ 0.03	mm
Shaft axial play	≤ 0.3	mm

Ratio (nominal)	Stage	Gearhead length, L1 [mm]	Gearhead weight [g]	Max. allowable torque [mNm]		Length with motor [mm]				Efficiency [%]	Direction of rotation	
				Continuous	Intermittent	SCL07-17	SBL07-12					
4.7 : 1	1	7.4	2	10	20	24.9	19.4				85	=
22 : 1	2	9.6	2.5	10	20	27.1	21.6				72	=
105 : 1	3	11.8	3	10	20	29.3	23.8				61	=
494 : 1	4	14.1	3.5	10	20	31.6	26.1				52	=

# SSD07

## Sensorless brushless motor drive circuit



For DC brushless motor serie **SBL07-12**

### Description

SSD07 is a 3-phase sensorless drive circuit designed to operate brushless motor SBL07-12 exclusively. The operating voltage can be adjusted by VR trimmer and motor shaft direction can be reversed by connecting CW/CCW input to Vcc, if not connected the motor runs CW. FG (Frequency Generator) output provides a pulse per motor revolution. Internal thermal protection circuit included.

### Specifications

SSD07				
	Min.	Typ.	Max.	
Voltage supply	2.7		6.0	V
Output voltage			4.9	V
Output current			0.8	A
Operating temperature range	-20...+75			°C
Weight	1.9			g