



# **ASPINA**

Engineered to Inspire

**Motor Catalog**

# Total support of your "Motion Requirements"

In compliance with requirements in various industries, applications, feature and functions, ASPINA offers optimal Motor Solution in terms of supplying system module inclusive controller, driver and mechanical design. In addition, ASPINA complies with the OEM and EMS requirement with consistent scheme of Development-Production taking an advantage of experienced total manufacturing technology.

## What we serve for



### Automation

Equipment contributing to improved productivity, labor saving, and human safety



### Life environment

Equipment for the living environment such as improved water and air and comfortable interiors



### Automotive

Automotive air-conditioning equipment



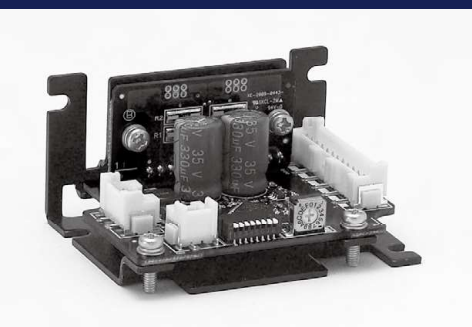
### Healthcare & social welfare

Respiratory equipment, assistive technology for people with disabilities



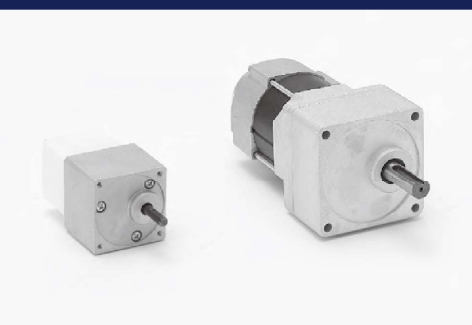
### Motor

Stepping Motor  
Brushless DC Motor  
In-vehicle Brushless DC Motor



### Driver & Controller

Motor control technology  
System control technology



### Mechanical module

Gear box / Gear Assembly  
Fan  
Brake / Clutch etc.



# ASPINA

Engineered to Inspire

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# Brushless DC Motor - Lineup

## Standard Brushless DC Motor : SDR Series

SERIES	SIZE [mm]	MODEL	LENGTH [mm]	RATED SPEED	PAGE	TORQUE [mN·m]						
						0	50	100	200	300	400	600
Inner rotor	φ36	SDR-3434-001	66.1	10,500	p.48-49	[Torque bar]						
Inner rotor	φ36	SDR-3434-002	66.1	10,500	p.48-49	[Torque bar]						
Inner rotor	φ36	SDR-3434-004	66.1	10,500	p.48-49	[Torque bar]						
Inner rotor	□42	SDR-42310-001	45.5	3,000	p.50-51	[Torque bar]						
Inner rotor	□42	SDR-42310-002	45.5	3,000	p.50-51	[Torque bar]						
Inner rotor	□60	SDR-6038-001	55.2	3,100	p.52-53	[Torque bar]						
Inner rotor	□60	SDR-6038-002	55.2	3,100	p.52-53	[Torque bar]						

SERIES	SIZE [mm]	MODEL	LENGTH [mm]	RATED SPEED	PAGE	TORQUE [mN·m]											
						0	5	10	15	20	25	30	35	40	50	60	
Outer rotor	φ14	SDR-14312-001	15.4	4,500	p.54-55	[Torque bar]											
Outer rotor	φ20	SDR-20312-001	12.8	8,700	p.54-55	[Torque bar]											
Outer rotor	φ24	SDR-24312-001	13.5	930	p.56-57	[Torque bar]											
Outer rotor	φ24	SDR-24312-002	13.5	1,900	p.56-57	[Torque bar]											
Outer rotor	φ24	SDR-24312-003	13.5	3,700	p.56-57	[Torque bar]											
Outer rotor	φ29	SDR-29312-001	14.5	2,200	p.58-59	[Torque bar]											
Outer rotor	φ29	SDR-29312-002	14.5	3,500	p.58-59	[Torque bar]											
Outer rotor	φ29	SDR-29312-003	14.5	5,350	p.58-59	[Torque bar]											
Outer rotor	φ38	SDR-38312-001	25.0	670	p.60-61	[Torque bar]											
Outer rotor	φ38	SDR-38312-002	25.0	1,150	p.60-61	[Torque bar]											
Outer rotor	φ38	SDR-38312-003	25.0	1,980	p.60-61	[Torque bar]											
Outer rotor	φ43	SDR-4316-001	14.0	1,760	p.62-63	[Torque bar]											
Outer rotor	φ43	SDR-4316-002	14.0	3,400	p.62-63	[Torque bar]											
Outer rotor	φ43	SDR-4316-101	23.6	5,470	p.62-63	[Torque bar]											

SERIES	SIZE [mm]	MODEL	LENGTH [mm]	RATED SPEED	PAGE	TORQUE [mN·m]									
						0	50	100	150	200	250	300	350	400	450
Outer rotor	φ62	SDR-55AS	28.1	600-950	p.64-65	[Torque bar]									
Outer rotor	φ62	SDR-55AM	31.1	700-810	p.64-65	[Torque bar]									
Outer rotor	φ62	SDR-55AL	36.1	850-1010	p.64-65	[Torque bar]									

## Outer Rotor Brushless DC

SERIES	SIZE [mm]	MODEL	LENGTH [mm]	RATED SPEED	PAGE	TORQUE [mN·m]											
						0	10	20	30	40	50	60	70	80	90	100	200
Outer rotor	φ35	DR-35314	46.0	3,200	p.66	[Torque bar]											
Outer rotor	φ55	DR-55310	32.74	3,000	p.67	[Torque bar]											
Outer rotor	φ63	DR-6236	43.0	1,800	p.67	[Torque bar]											
Outer rotor	φ75	DR-7538	34.05	3,100	p.68-69	[Torque bar]											
Outer rotor	φ76	DR-7638	43.0	1,800	p.68-69	[Torque bar]											
Outer rotor	φ82	DR-82316	27.0	2,000	p.68-69	[Torque bar]											
Outer rotor	φ87	DR-8738	60.0	1,800	p.68-69	[Torque bar]											
Outer rotor	φ82	DR-8238	60.0	1,400	p.68-69	[Torque bar]											

## Inner Rotor Brushless DC

SERIES	SIZE [mm]	MODEL	LENGTH [mm]	RATED SPEED	PAGE	TORQUE [mN·m]									
						0	50	100	200	300	400	600	800	1,000	1,500
Inner rotor	φ68	DR-6638	36.6	4,950	p.70-71	[Torque bar]									
Inner rotor	φ68		36.6	1,500	p.70-71	[Torque bar]									
Inner rotor	φ79	DR-738	35.8	6,000	p.70-71	[Torque bar]									
Inner rotor	φ79	DR-7738	39.1	6,000	p.70-71	[Torque bar]									
Inner rotor	φ88.2	DR-8538 (Low)	39.2	6,300	p.72-73	[Torque bar]									
Inner rotor	φ88.2	DR-8538-6	35.8	6,500	p.72-73	[Torque bar]									
Inner rotor	φ88.2	DR-8538-8	39.2	6,500	p.72-73	[Torque bar]									
Inner rotor	φ88.2	DR-8538-12	45.8	5,330	p.72-73	[Torque bar]									
Inner rotor	φ88.2	DRA-8538	55.0	1,500	p.74-75	[Torque bar]									
Inner rotor	φ93	DR-8838	39.0	1,800	p.74-75	[Torque bar]									
Inner rotor	φ97.4	DR-9538	57.6	850	p.74-75	[Torque bar]									
Inner rotor	φ97.4	DR-9538 (Thin)	51.6	2,000	p.74-75	[Torque bar]									
Inner rotor	□54	LA052-040	69.6	3,000	p.76-77	[Torque bar]									
Inner rotor	□54	LA052-080	69.6	3,000	p.76-77	[Torque bar]									
Inner rotor	□54	LA052-110	89.6	3,000	p.76-77	[Torque bar]									

Stepping Motor

BLDC Motor

Motor Driver

Other Motor



# 2 Phase Hybrid Stepping Motor

## 36C SERIES

φ 36mm

0.9°

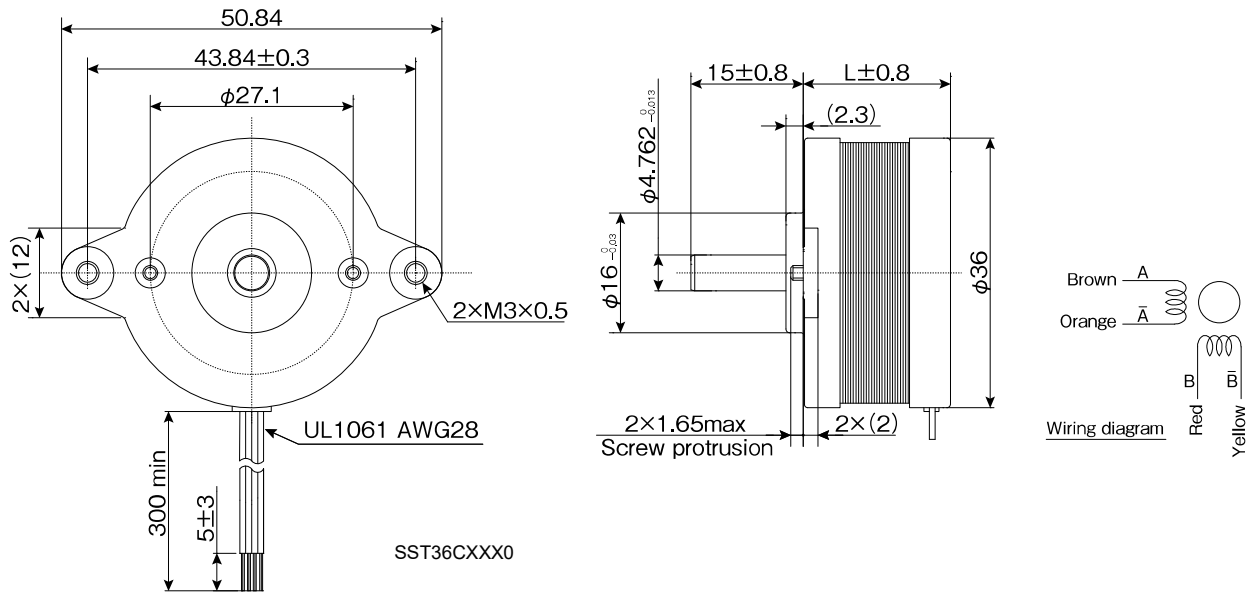
Bipolar

RoHS

### CHARACTERISTICS

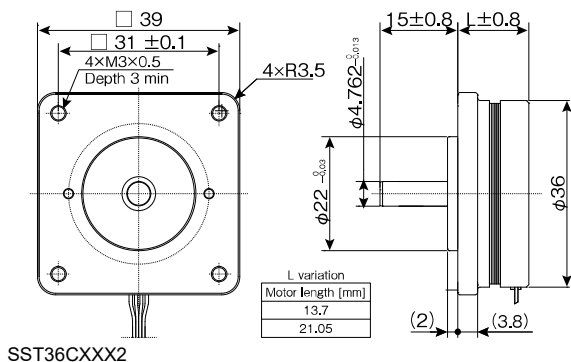
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
SST36C0030	0.9	5.0	0.3	16.80	8.50	41.2	7.3	50	12.35
SST36C0050	0.9	3.2	0.5	6.40	3.16	41.2	7.3	50	12.35
SST36C0060	0.9	2.6	0.6	4.30	2.23	41.2	7.3	50	12.35
SST36C0080	0.9	2.0	0.8	2.53	1.24	41.2	7.3	50	12.35
SST36C1030	0.9	8.2	0.3	27.20	20.70	100	19.6	90	19.7
SST36C1050	0.9	5.2	0.45	11.50	9.00	100	19.6	90	19.7
SST36C1060	0.9	4.1	0.6	6.90	5.35	100	19.6	90	19.7
SST36C1080	0.9	3.3	0.8	4.10	3.16	100	19.6	90	19.7

### DIMENSIONS [EXAMPLE]

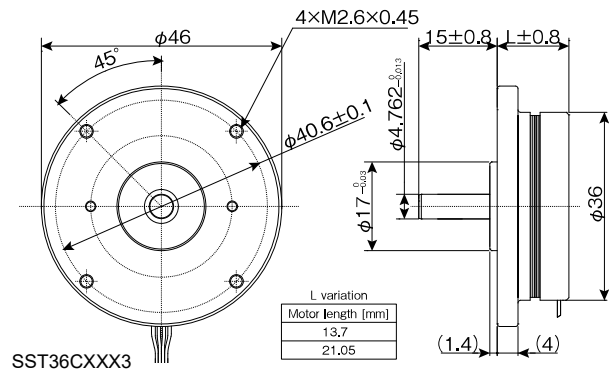


### MOUNTING OPTION

#### Square Type



#### Round Type

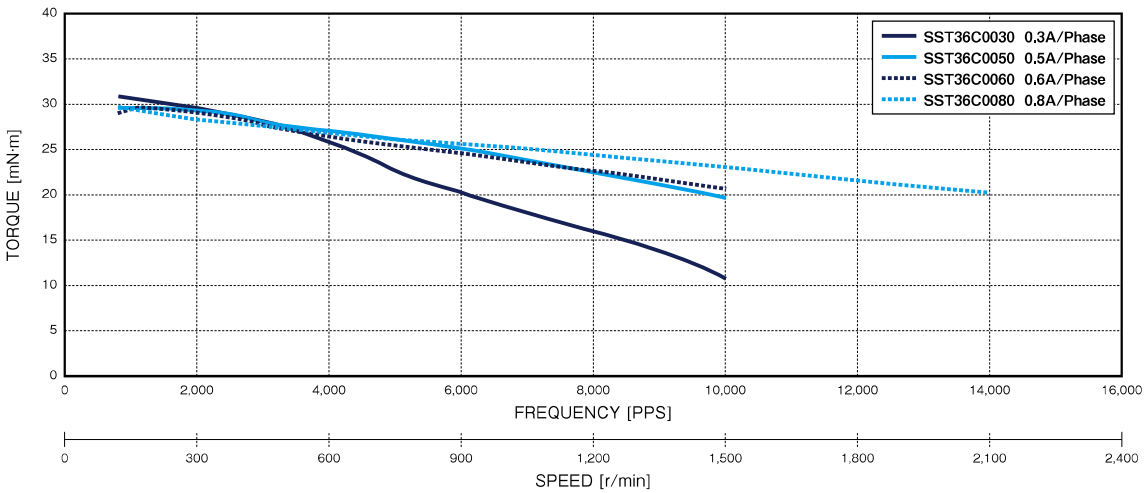


## TORQUE RANGE

STEP ANGLE	SIZE		WINDINGS	MODEL	TORQUE [mN·m] *FREQUENCY at 1,000pps															
					0	50	100	200	300	400	600	800	1,000	1,500	2,000					
0.9°	φ36mm	NEMA16	Bipolar	36C0																
				36C1																

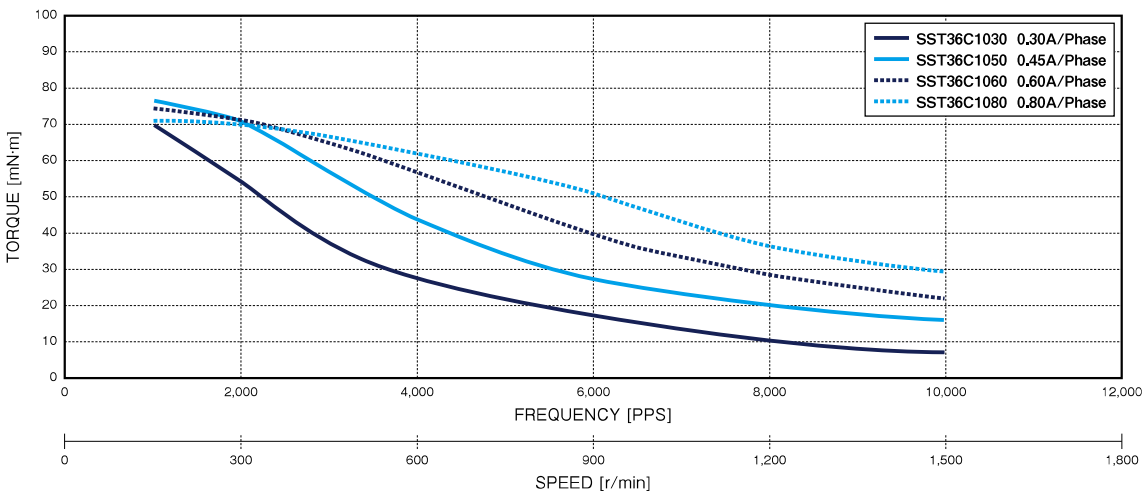
## PULL OUT TORQUE CURVE

SST36C0XXX



DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
 EXCITING MODE = 2 Phase      MOUNTING : With rubber damper

SST36C1XXX



DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
 EXCITING MODE = 2 Phase      MOUNTING : With rubber damper

**i** Available shaft, lead wires, winding, encoder and other customization. Feel free to contact sales office or sales agent.



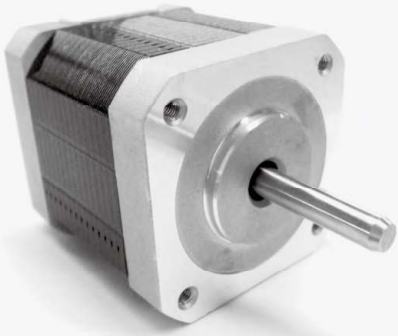
Operate the motor keeping the motor surface temperature at 100 Deg. C or lower.

Stepping Motor

BLDC Motor

Motor Driver

Other Motor



# 2 Phase Hybrid Stepping Motor

## 42C SERIES

□42mm

0.9°

Unipolar

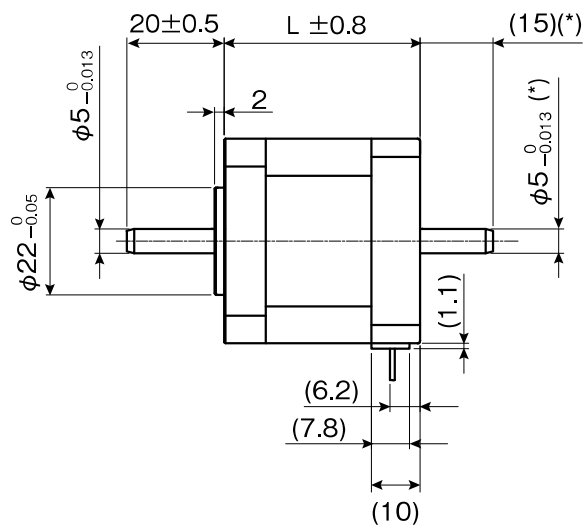
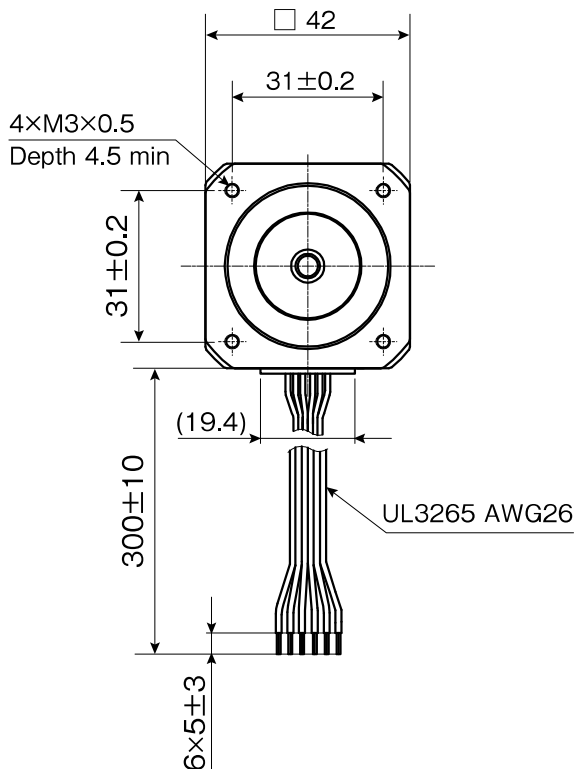
RoHS

### CHARACTERISTICS

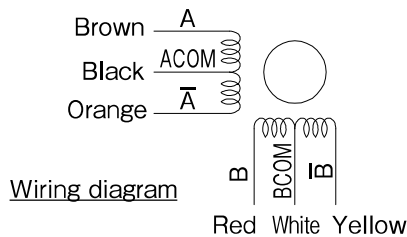
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	kg	mm
SST42C103X	0.9	11.2	0.3	37.4	34.8	177	33	0.23	34
SST42C106X	0.9	6.3	0.6	10.5	8.6	184	33	0.23	34
SST42C110X	0.9	4.4	1.0	4.4	3.9	196	33	0.23	34
SST42C204X	0.9	12.0	0.4	30.0	34.5	312	56	0.29	40
SST42C208X	0.9	6.2	0.8	7.7	9.2	324	56	0.29	40
SST42C212X	0.9	4.1	1.2	3.4	4.5	324	56	0.29	40
SST42C304X	0.9	12.6	0.4	31.5	32.0	334	72	0.36	47.5
SST42C308X	0.9	6.4	0.8	8.0	9.7	358	72	0.36	47.5
SST42C312X	0.9	4.1	1.2	3.4	4.0	346	72	0.36	47.5

↑ Last Digit (for Unipolar) 0:Single Shaft 1:Double Shaft

### DIMENSIONS [EXAMPLE]

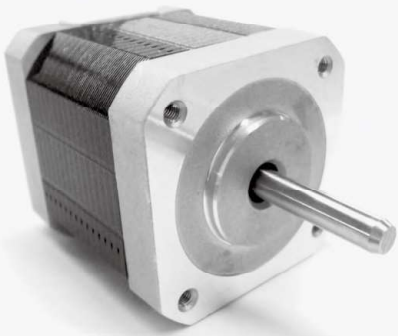


\* Dimensions apply to double shaft models.









# 2 Phase Hybrid Stepping Motor

## 42C SERIES

□42mm

0.9°

Bipolar

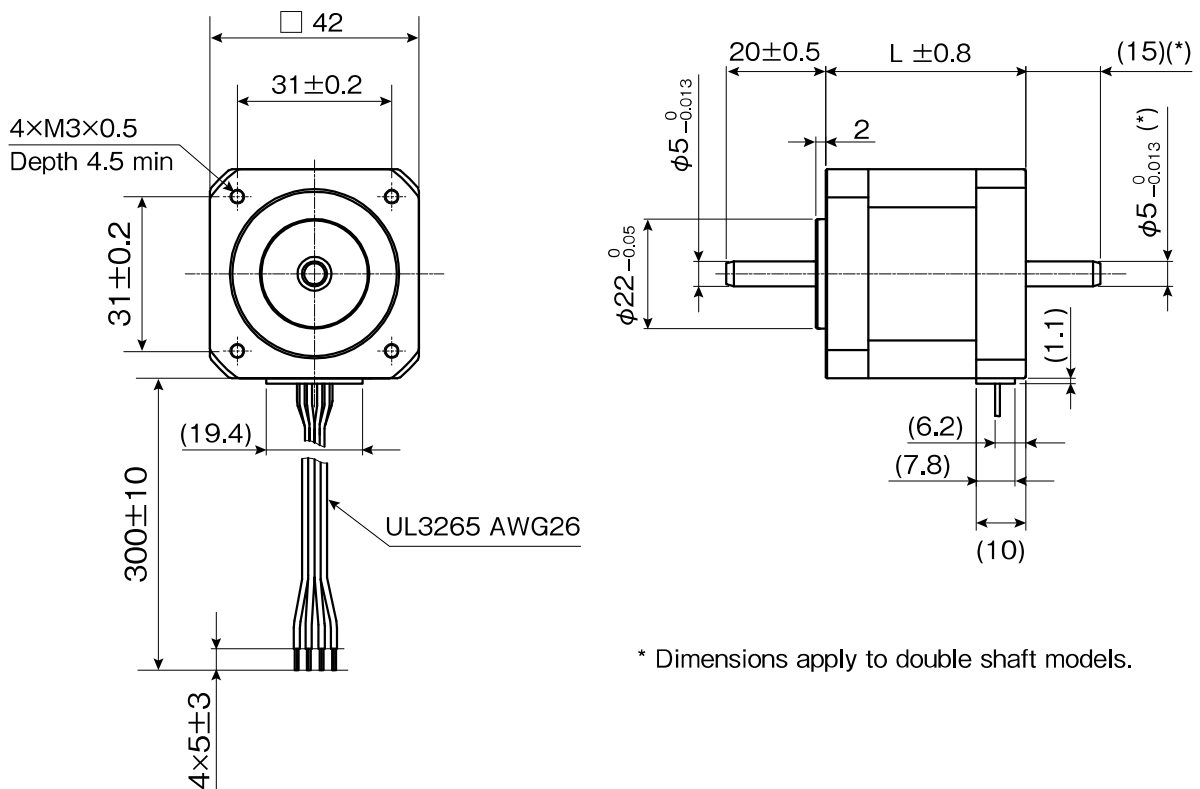
RoHS

### CHARACTERISTICS

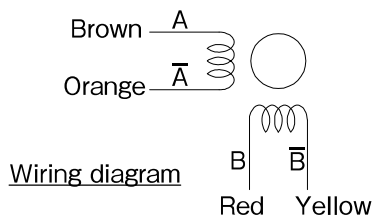
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	kg	mm
SST42C103X	0.9	5.6	0.3	18.7	34.8	177	33	0.23	34
SST42C106X	0.9	3.2	0.6	5.4	8.6	184	33	0.23	34
SST42C110X	0.9	1.2	1.0	2.2	3.9	196	33	0.23	34
SST42C204X	0.9	6.0	0.4	15.0	34.5	312	56	0.29	40
SST42C208X	0.9	3.0	0.8	3.8	9.2	324	56	0.29	40
SST42C212X	0.9	2.0	1.2	1.7	4.5	324	56	0.29	40
SST42C304X	0.9	6.3	0.4	15.7	32.0	334	72	0.36	47.5
SST42C308X	0.9	3.2	0.8	4.0	9.7	358	72	0.36	47.5
SST42C312X	0.9	2.0	1.2	1.7	4.0	346	72	0.36	47.5

↑ Last Digit (for Bipolar) 5:Single Shaft 6:Double Shaft

### DIMENSIONS [EXAMPLE]



\* Dimensions apply to double shaft models.





# 2 Phase Hybrid Stepping Motor

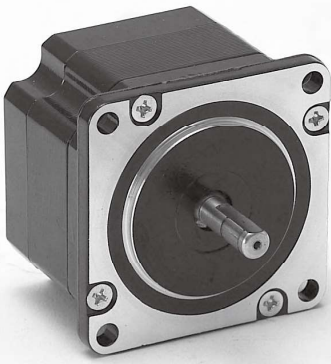
## 56C SERIES

□ 56mm

0.9°

Unipolar

RoHS

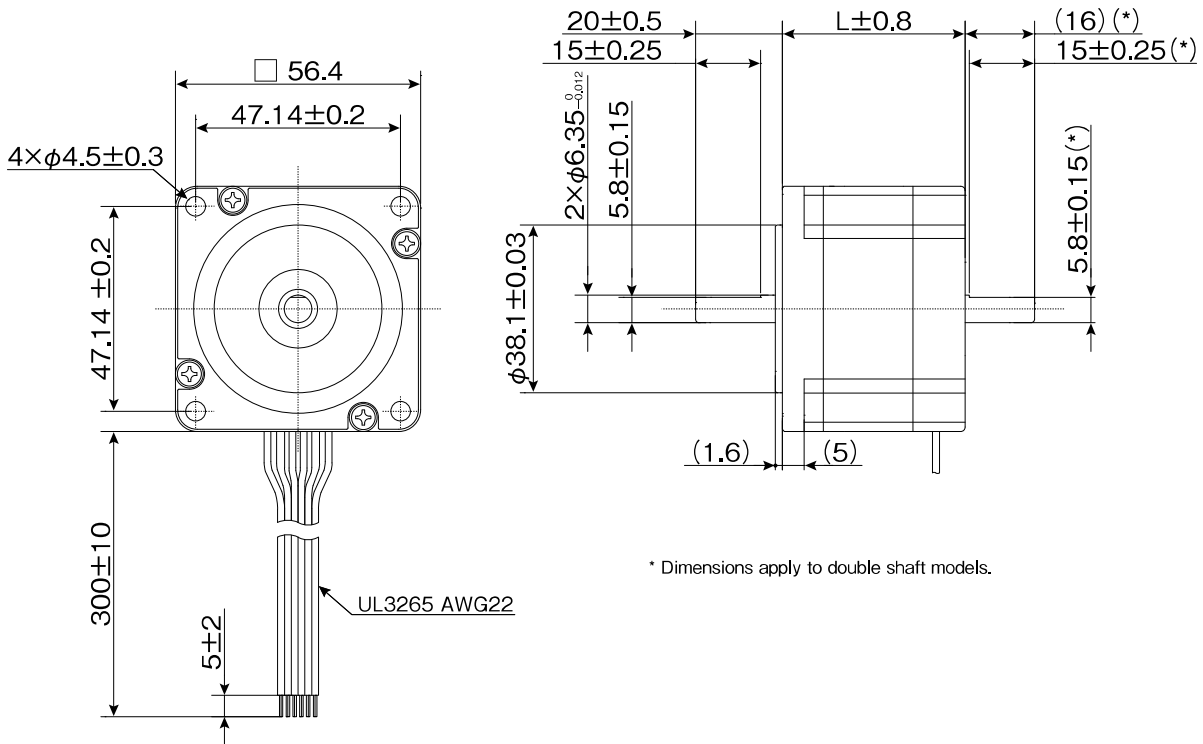


### CHARACTERISTICS

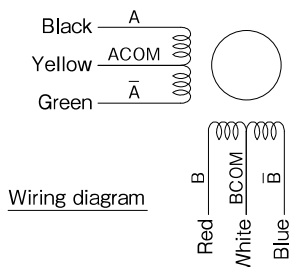
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	kg	mm
SST56C110X	0.9	5.3	1.0	5.3	7.0	425	120	0.45	39.5
SST56C120X	0.9	2.6	2.0	1.3	1.8	460	120	0.45	39.5
SST56C130X	0.9	1.53	3.0	0.51	0.7	460	120	0.45	39.5
SST56C310X	0.9	5.8	1.0	5.8	13.0	1,029	306	0.71	54.5
SST56C320X	0.9	3.2	2.0	1.6	3.5	1,029	306	0.71	54.5
SST56C330X	0.9	2.25	3.0	0.75	1.8	1,029	306	0.71	54.5
SST56C510X	0.9	8.5	1.0	8.5	18.0	1,569	470	1.10	76
SST56C520X	0.9	4.8	2.0	2.4	5.0	1,569	470	1.10	76
SST56C530X	0.9	3.3	3.0	1.1	2.5	1,569	470	1.10	76

↑ Last Digit (for Unipolar) 0:Single Shaft 1:Double Shaft

### DIMENSIONS [EXAMPLE]



\* Dimensions apply to double shaft models.







# 2 Phase Hybrid Stepping Motor

## 28D SERIES

□ 28mm

1.8°

Unipolar

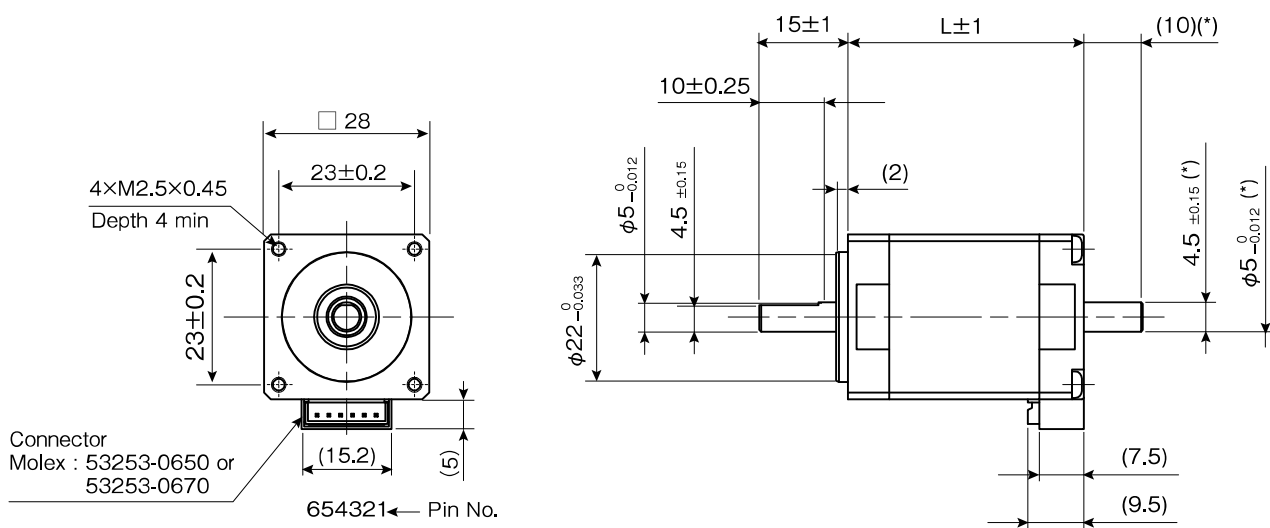
RoHS

### CHARACTERISTICS

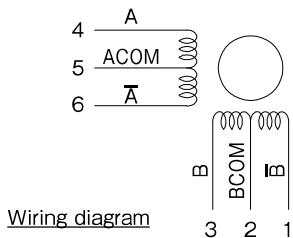
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	kg	mm
SST28D110X	1.8	2.76	0.95	2.90	1.25	68.6	8	0.110	32
SST28D210X	1.8	3.23	0.95	3.40	1.20	94.1	12	0.145	39.7
SST28D310X	1.8	4.28	0.95	4.50	1.70	135	17	0.195	51.6

↑ Last Digit (for Unipolar) 0:Single Shaft 1:Double Shaft

### DIMENSIONS [EXAMPLE]



\* Dimensions apply to double shaft models.



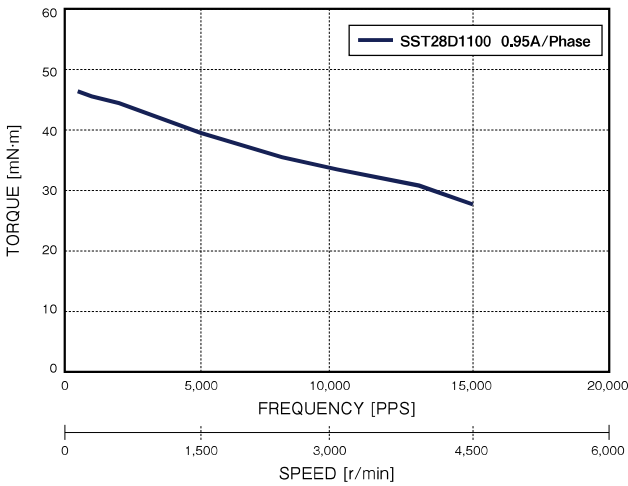


## TORQUE RANGE

STEP ANGLE	SIZE		WINDINGS	MODEL	TORQUE [mN·m] *FREQUENCY at 1,000pps																
					0	50	100	200	300	400	600	800	1,000	1,500	2,000						
1.8°	28mm	NEMA11	Unipolar	28D1	■																
				28D2	■																
				28D3	■	■															

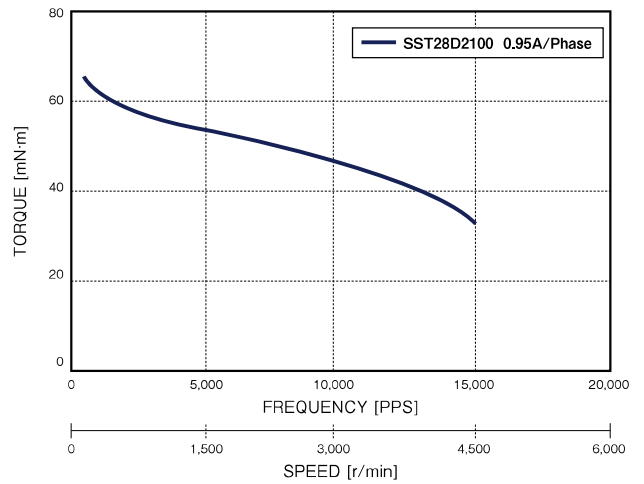
## PULL OUT TORQUE CURVE

SST28D1XXX



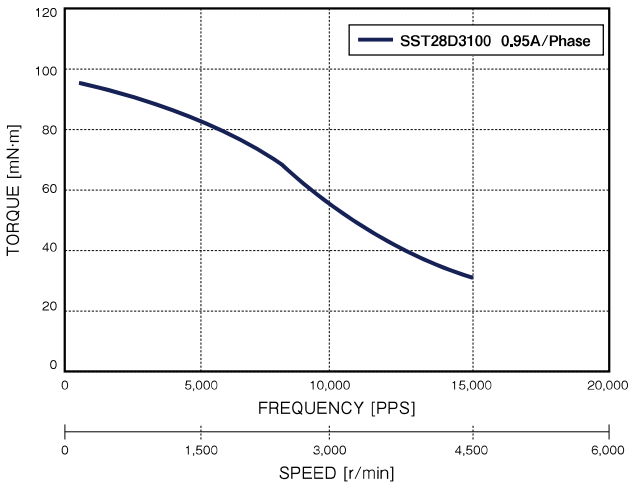
DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

SST28D2XXX



DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

SST28D3XXX



DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase



Available shaft, lead wires, winding, encoder and other customization. Feel free to contact sales office or sales agent.



Operate the motor keeping the motor surface temperature at 100 Deg. C or lower.

Stepping Motor

BLDC Motor

Motor Driver

Other Motor



# 2 Phase Hybrid Stepping Motor

## 28D SERIES

□ 28mm

1.8°

Bipolar

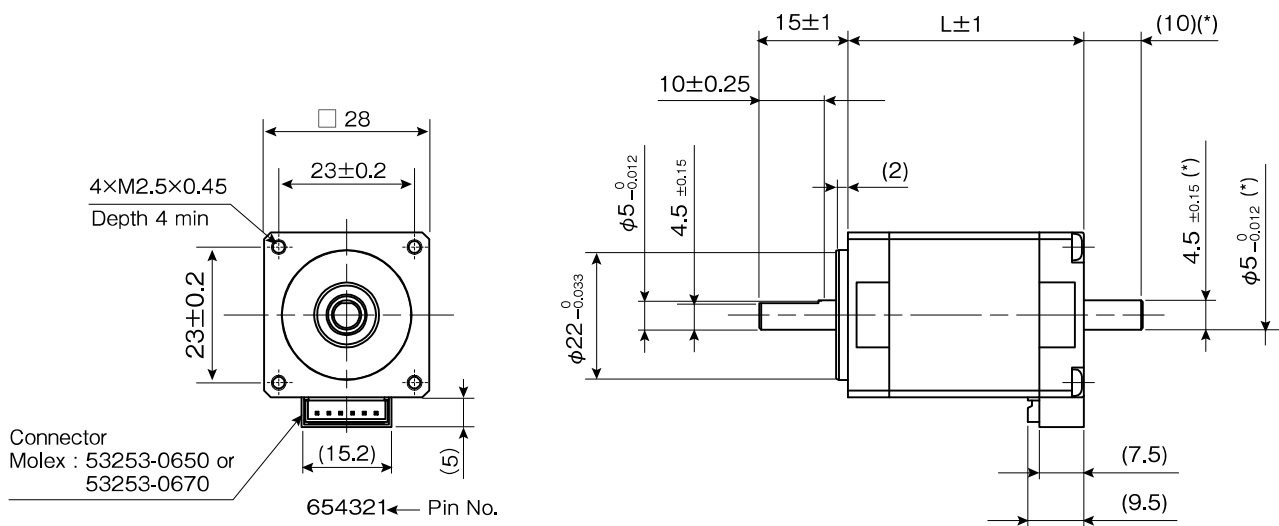
RoHS

### CHARACTERISTICS

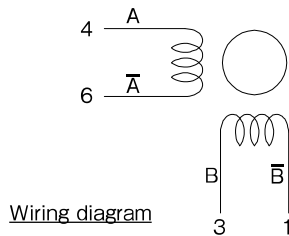
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	kg	mm
SST28D110X	1.8	1.89	1.3	1.45	1.25	92.2	8	0.110	32
SST28D210X	1.8	2.21	1.3	1.70	1.20	123	12	0.145	39.7
SST28D310X	1.8	2.93	1.3	2.25	1.70	183	17	0.195	51.6

↑ Last Digit (for Bipolar) 5:Single Shaft 6:Double Shaft

### DIMENSIONS [EXAMPLE]



\* Dimensions apply to double shaft models.

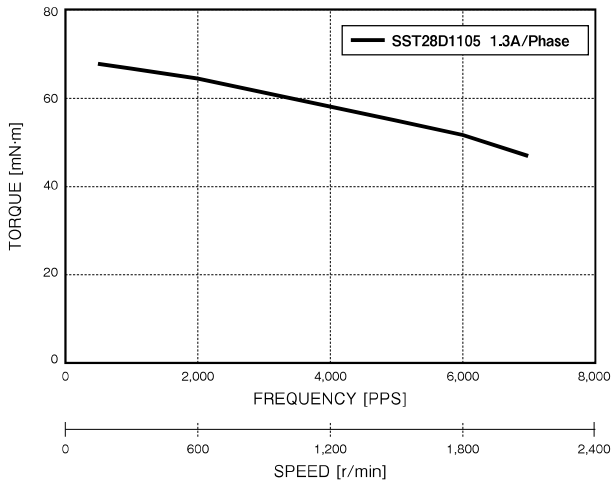


## TORQUE RANGE

STEP ANGLE	SIZE		WINDINGS	MODEL	TORQUE [mN·m] *FREQUENCY at 1,000pps												
					0	50	100	200	300	400	600	800	1,000	1,500	2,000		
1.8°	28mm	NEMA11	Bipolar	28D1	[Torque range bars]												
				28D2	[Torque range bars]												
				28D3	[Torque range bars]												

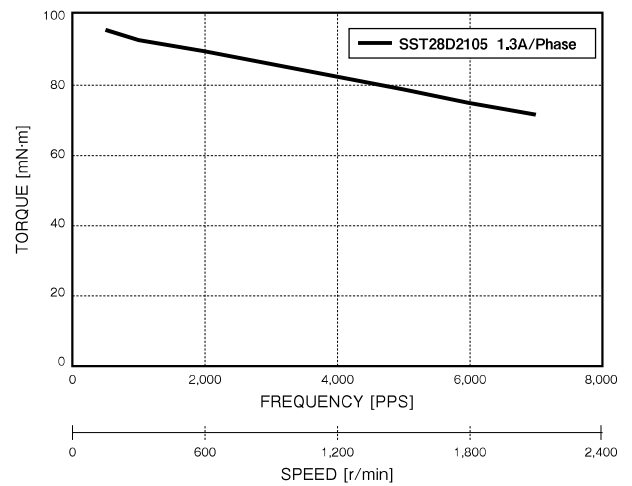
## PULL OUT TORQUE CURVE

SST28D1XXX



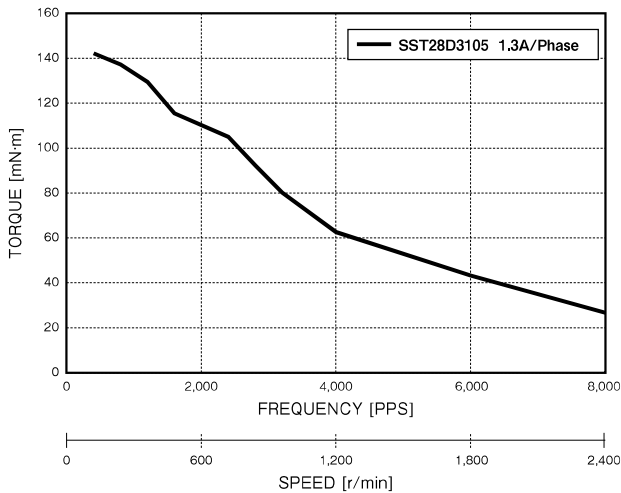
DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

SST28D2XXX



DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

SST28D3XXX



DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

**i** Available shaft, lead wires, winding, encoder and other customization. Feel free to contact sales office or sales agent.



Operate the motor keeping the motor surface temperature at 100 Deg. C or lower.

Stepping Motor

BLDC Motor

Motor Driver

Other Motor



# 2 Phase Hybrid Stepping Motor

## 35D SERIES

□35mm

1.8°

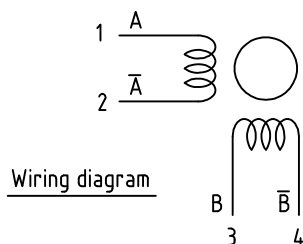
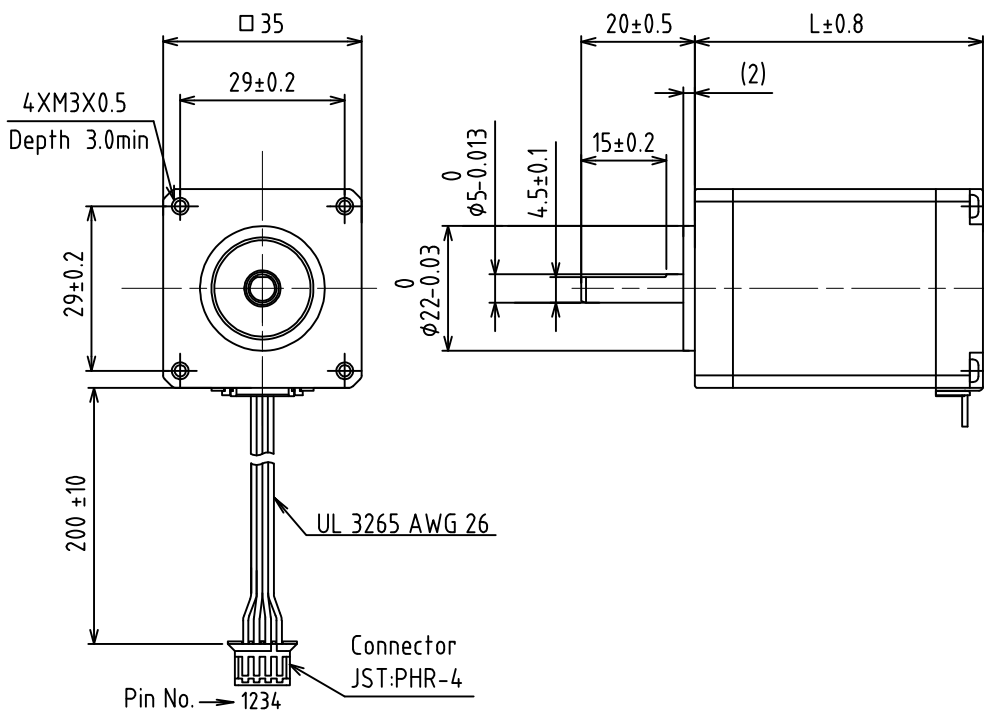
Bipolar

RoHS

### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
SST35D4165	1.8	3.60	1.6	2.25	3.90	515	41	280	50.5
SST35D4185	1.8	3.15	1.8	1.75	2.40	465	41	280	50.5
SST35D4205	1.8	3.00	2.0	1.50	1.70	450	41	280	50.5
SST35D4225	1.8	2.75	2.2	1.25	1.15	415	41	280	50.5

### DIMENSIONS [EXAMPLE]









# 2 Phase Hybrid Stepping Motor

## 42D SERIES

□42mm

1.8°

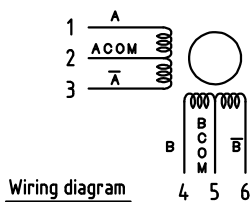
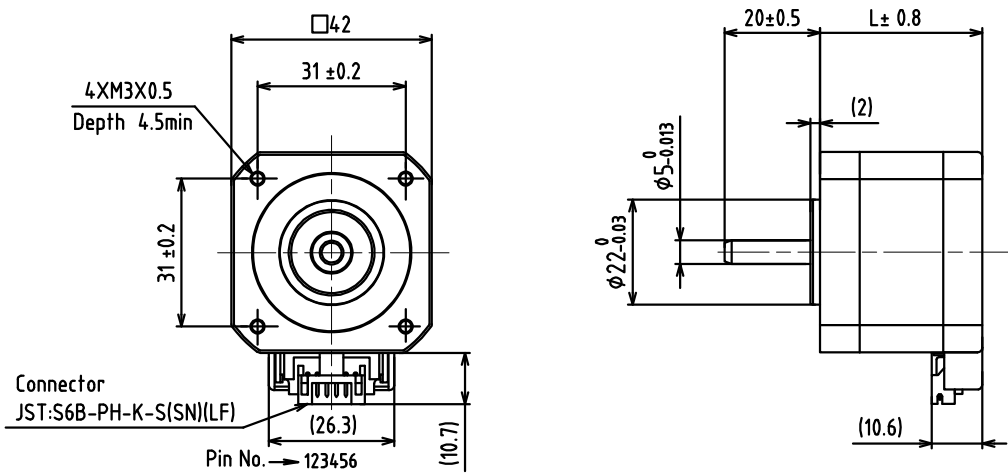
Unipolar

RoHS

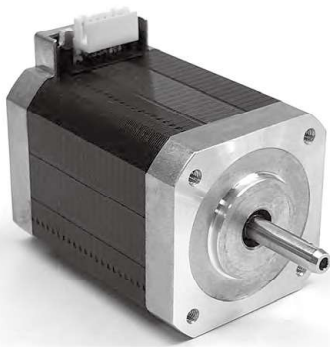
### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
STA-42D0000	1.8	6.55	0.5	13.10	10.5	154	21	170	27.5
STA-42D0001	1.8	4.74	0.6	7.70	6.8	149	21	170	27.5
STA-42D0002	1.8	3.60	0.8	4.50	4.1	150	21	170	27.5
STA-42D0003	1.8	3.20	1.0	3.20	3.0	159	21	170	27.5
STA-42D1000	1.8	5.04	0.6	8.40	7.7	195	29	190	30
STA-42D1001	1.8	4.00	0.8	5.00	4.6	200	29	190	30
STA-42D1002	1.8	3.60	1.0	3.60	3.3	210	29	190	30
STA-42D1003	1.8	2.76	1.2	2.30	2.2	200	29	190	30
STA-42D2000	1.8	3.92	0.8	4.90	5.0	270	44	230	34
STA-42D2001	1.8	3.60	1.0	3.60	3.7	290	44	230	34
STA-42D2002	1.8	3.24	1.2	2.70	2.8	300	44	230	34
STA-42D2003	1.8	2.66	1.4	1.90	1.9	290	44	230	34
STA-42D3000	1.8	4.40	1.0	4.40	5.4	420	65	290	40
STA-42D3001	1.8	3.96	1.2	3.30	4.1	440	65	290	40
STA-42D3002	1.8	3.29	1.4	2.35	2.9	420	65	290	40
STA-42D3003	1.8	2.64	1.6	1.65	1.8	380	65	290	40

### DIMENSIONS [EXAMPLE]







# 2 Phase Hybrid Stepping Motor

## 42D SERIES

□42mm

1.8°

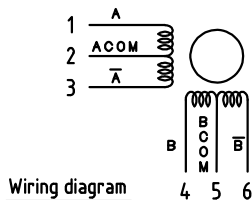
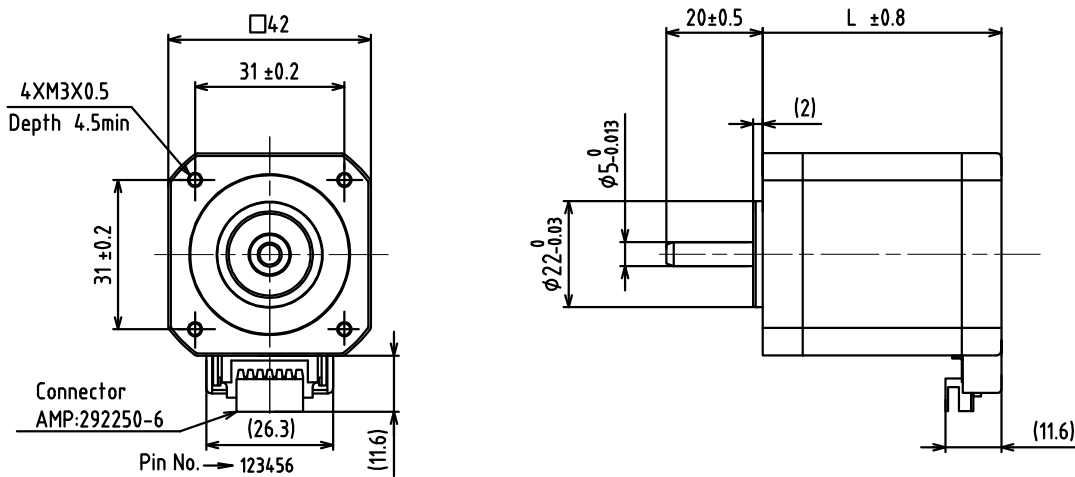
Unipolar

RoHS

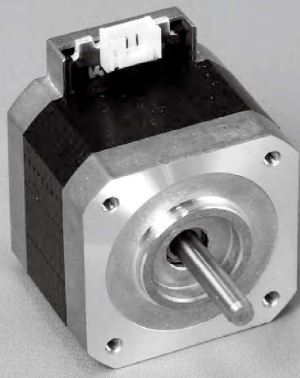
### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
STA-42D4000	1.8	5.04	1.2	4.20	5.5	630	87	390	49.5
STA-42D4001	1.8	4.34	1.4	3.10	3.8	610	87	390	49.5
STA-42D4002	1.8	3.57	1.7	2.10	2.4	585	87	390	49.5
STA-42D4003	1.8	3.50	2.0	1.75	1.8	585	87	390	49.5
STA-42D5003	1.8	6.00	1.2	5.00	6.5	773	111	490	58
STA-42D5004	1.8	4.64	1.6	2.90	3.7	783	111	490	58
STA-42D5005	1.8	4.50	1.8	2.50	2.8	757	111	490	58
STA-42D5006	1.8	3.99	2.1	1.90	1.7	697	111	490	58

### DIMENSIONS [EXAMPLE]







# 2 Phase Hybrid Stepping Motor

## 42D SERIES

□42mm

1.8°

Bipolar

RoHS

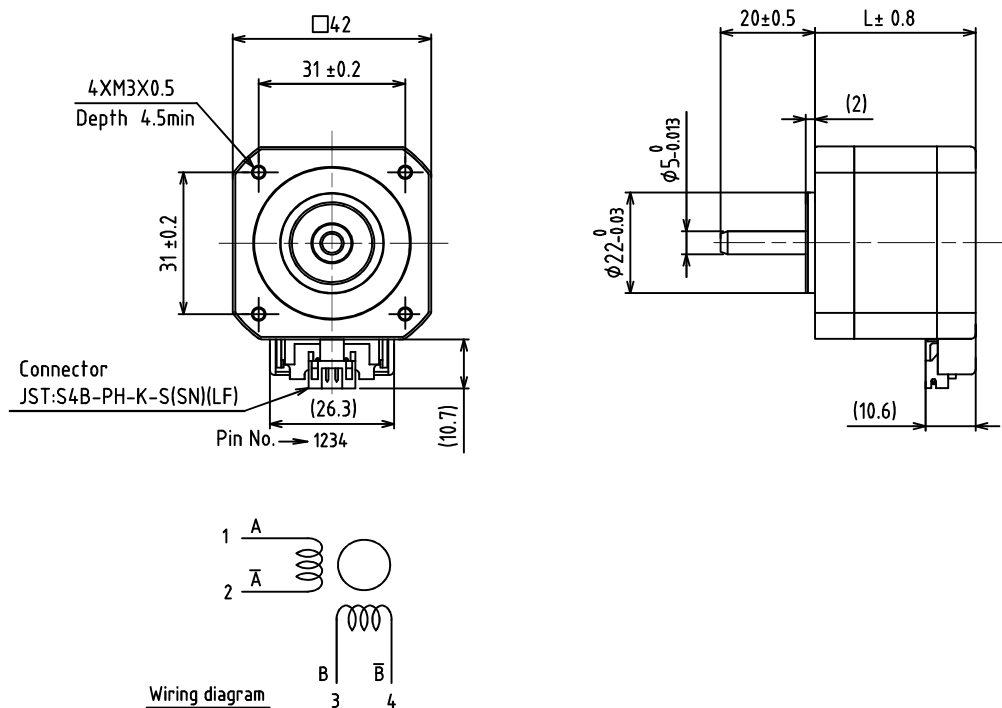
STA-42D series can achieve larger torque than existing motors in same dimension.

### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
STA-42D0004	1.8	4.27	0.7	6.10	10.5	200	21	170	27.5
STA-42D0005	1.8	3.42	0.9	3.80	6.8	205	21	170	27.5
STA-42D0006	1.8	2.53	1.1	2.30	4.1	195	21	170	27.5
STA-42D0007	1.8	2.21	1.3	1.70	3.0	195	21	170	27.5
STA-42D1004	1.8	3.83	0.9	4.25	7.7	270	29	190	30
STA-42D1005	1.8	2.75	1.1	2.50	4.6	255	29	190	30
STA-42D1006	1.8	2.66	1.4	1.90	3.3	270	29	190	30
STA-42D1007	1.8	1.96	1.7	1.15	2.2	265	29	190	30
STA-42D2004	1.8	2.88	1.2	2.40	5.0	390	44	230	34
STA-42D2005	1.8	2.45	1.4	1.75	3.7	385	44	230	34
STA-42D2006	1.8	2.30	1.7	1.35	2.8	400	44	230	34
STA-42D2007	1.8	2.09	1.9	1.10	1.9	380	44	230	34
STA-42D3004	1.8	3.43	1.4	2.45	5.4	540	65	290	40
STA-42D3005	1.8	3.04	1.6	1.90	4.1	565	65	290	40
STA-42D3006	1.8	2.57	1.9	1.35	2.9	525	65	290	40
STA-42D3007	1.8	2.20	2.2	1.00	1.8	490	65	290	40

↑ Last Digit 4-7 : for Bipolar

### DIMENSIONS [EXAMPLE]









# 2 Phase Hybrid Stepping Motor

## 42D SERIES

□42 mm

1.8°

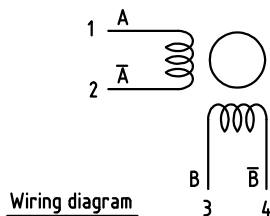
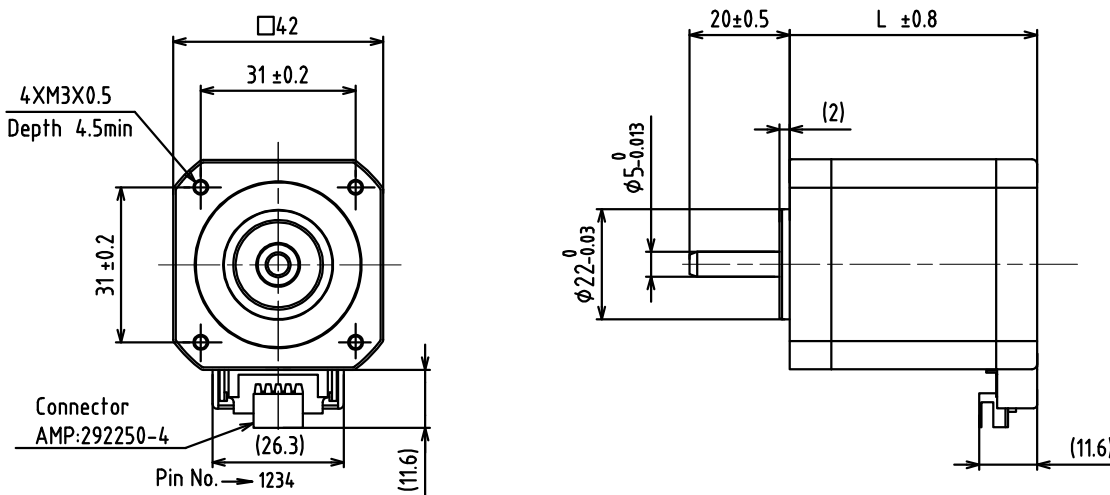
Bipolar

RoHS

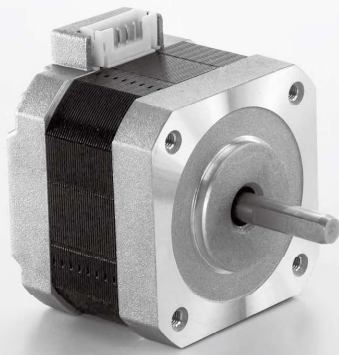
### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
STA-42D4004	1.8	3.40	1.7	2.00	5.5	823	87	390	49.5
STA-42D4005	1.8	3.14	1.9	1.65	3.8	778	87	390	49.5
STA-42D4006	1.8	2.73	2.1	1.30	2.4	700	87	390	49.5
STA-42D4007	1.8	2.65	2.3	1.15	1.8	658	87	390	49.5
STA-42D5007	1.8	4.25	1.7	2.50	6.5	1,025	111	490	58
STA-42D5008	1.8	3.19	2.2	1.45	3.7	1,015	111	490	58
STA-42D5009	1.8	3.13	2.5	1.25	2.8	1,000	111	490	58
STA-42D5010	1.8	2.66	2.8	0.95	1.7	880	111	490	58

### DIMENSIONS [EXAMPLE]







## 2 Phase Hybrid Stepping Motor

### 43D SERIES

□ 42mm

1.8°

Unipolar

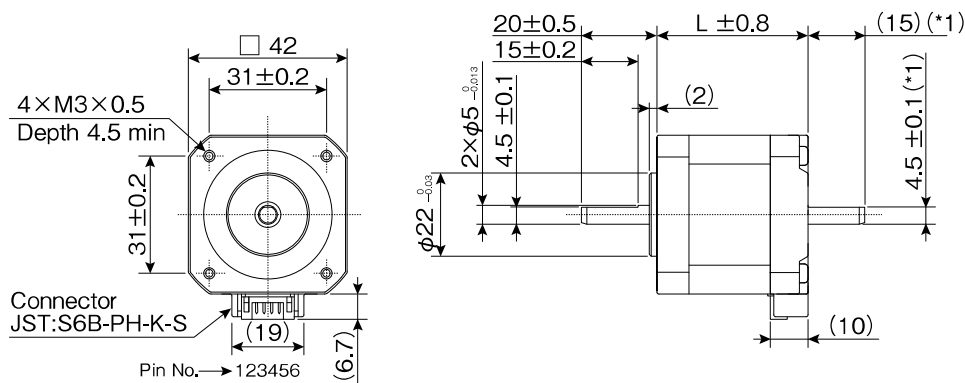
RoHS

#### CHARACTERISTICS

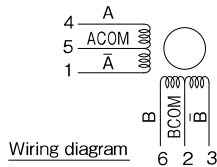
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
SST43D104X	1.8	9.6	0.4	24.0	16.0	215	33	230	34
SST43D106X	1.8	6.9	0.6	11.5	8.1	226	33	230	34
SST43D108X	1.8	5.1	0.8	6.4	4.9	233	33	230	34
SST43D110X	1.8	4.2	1.0	4.2	3.3	238	33	230	34
SST43D112X	1.8	3.2	1.2	2.7	2.3	237	33	230	34
SST43D115X	1.8	2.7	1.5	1.8	1.5	235	33	230	34
SST43D204X	1.8	12.0	0.4	30.0	24.0	314	56	290	40
SST43D206X	1.8	7.2	0.6	12.0	11.8	322	56	290	40
SST43D208X	1.8	5.5	0.8	6.9	7.1	321	56	290	40
SST43D210X	1.8	4.8	1.0	4.8	4.8	338	56	290	40
SST43D212X	1.8	4.0	1.2	3.3	3.6	341	56	290	40
SST43D214X	1.8	3.2	1.4	2.3	2.5	329	56	290	40
SST43D216X	1.8	3.0	1.6	1.9	1.8	313	56	290	40

↑ Last Digit (for Unipolar) 0:Single Shaft 1:Double Shaft

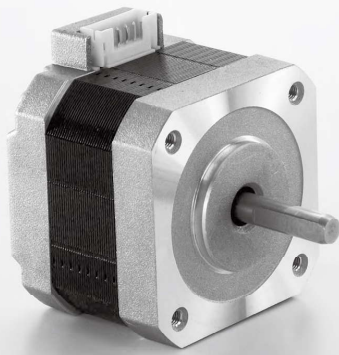
#### DIMENSIONS [EXAMPLE]



\*1 Dimensions apply to double shaft models.







# 2 Phase Hybrid Stepping Motor

## 43D SERIES

□ 42mm

1.8°

Bipolar

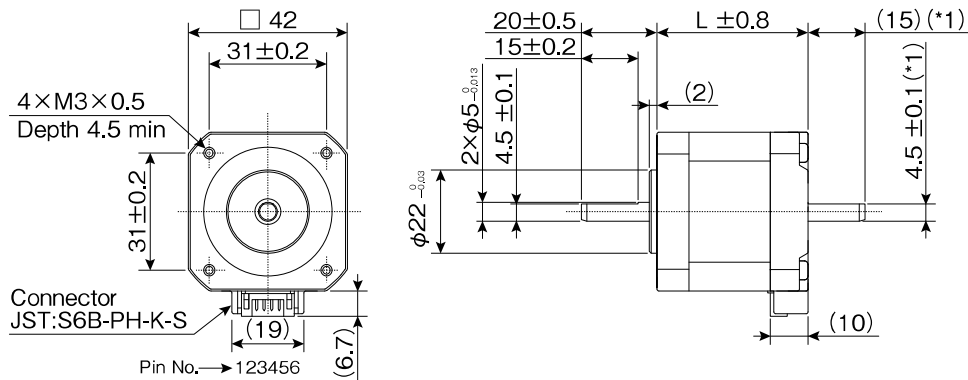
RoHS

### CHARACTERISTICS

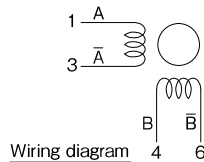
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
SST43D104X	1.8	6.8	0.57	12.00	16.0	294	33	230	34
SST43D106X	1.8	4.9	0.85	5.75	8.1	304	33	230	34
SST43D108X	1.8	3.6	1.13	3.20	4.9	312	33	230	34
SST43D110X	1.8	3.0	1.41	2.10	3.3	319	33	230	34
SST43D112X	1.8	2.3	1.70	1.35	2.3	322	33	230	34
SST43D115X	1.8	1.9	2.12	0.90	1.5	309	33	230	34
SST43D204X	1.8	8.6	0.57	15.00	24.0	420	56	290	40
SST43D206X	1.8	5.1	0.85	6.00	11.8	432	56	290	40
SST43D208X	1.8	3.9	1.13	3.45	7.1	422	56	290	40
SST43D210X	1.8	3.4	1.41	2.40	4.8	441	56	290	40
SST43D212X	1.8	2.8	1.70	1.65	3.6	456	56	290	40
SST43D214X	1.8	2.3	1.98	1.15	2.5	441	56	290	40
SST43D216X	1.8	2.1	2.26	0.95	1.8	424	56	290	40

↑ Last Digit (for Bipolar) 5:Single Shaft 6:Double Shaft

### DIMENSIONS [EXAMPLE]

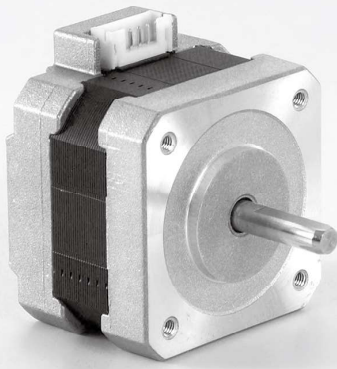


\*1 Dimensions apply to double shaft models.









# 2 Phase Hybrid Stepping Motor

## 45D SERIES

□42mm

High Holding Torque Model

1.8°

Unipolar

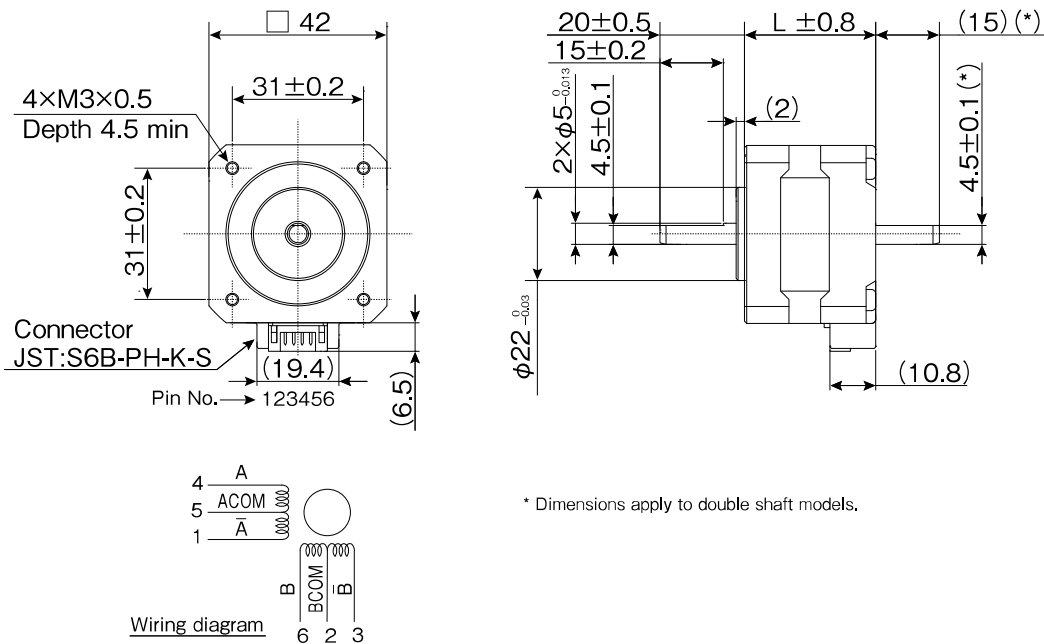
RoHS

### CHARACTERISTICS

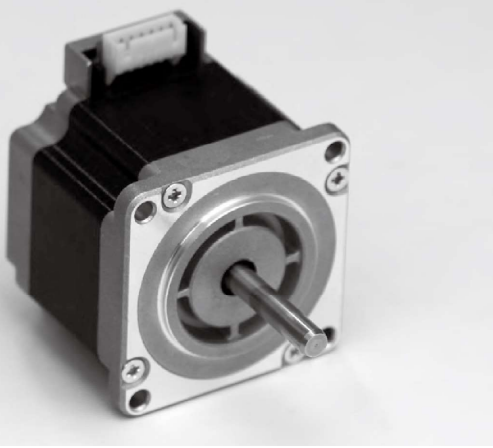
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	g	mm
SST45D003X	1.8	13.2	0.3	44	23.6	221	45	200	32
SST45D005X	1.8	7.3	0.5	14.5	8.6	221	45	200	32
SST45D007X	1.8	4.8	0.7	6.8	4.6	221	45	200	32
SST45D010X	1.8	3.3	1.0	3.3	2.3	226	45	200	32
SST45D012X	1.8	2.9	1.2	2.4	1.8	237	45	200	32
SST45D015X	1.8	2.1	1.5	1.4	1.0	226	45	200	32
SST45D103X	1.8	14.7	0.3	49	28	265	56	230	35
SST45D105X	1.8	8.3	0.5	16.6	10.5	265	56	230	35
SST45D107X	1.8	5.5	0.7	7.8	5.5	268	56	230	35
SST45D110X	1.8	3.6	1.0	3.6	2.7	265	56	230	35
SST45D112X	1.8	3.3	1.2	2.8	2.1	284	56	230	35
SST45D115X	1.8	2.4	1.5	1.6	1.2	265	56	230	35
SST45D203X	1.8	18.9	0.3	63	41.5	361	82	310	42.5
SST45D205X	1.8	10.8	0.5	21.5	15.5	361	82	310	42.5
SST45D207X	1.8	7.1	0.7	10.2	8.0	361	82	310	42.5
SST45D210X	1.8	4.6	1.0	4.6	4.0	378	82	310	42.5
SST45D212X	1.8	4.2	1.2	3.5	3.2	392	82	310	42.5
SST45D215X	1.8	3	1.5	2.0	1.8	382	82	310	42.5

↑ Last Digit (for Unipolar) 0:Single Shaft 1:Double Shaft

### DIMENSIONS [EXAMPLE]







# 2 Phase Hybrid Stepping Motor

## 56D SERIES

□ 56mm

1.8°

Unipolar

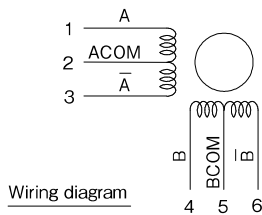
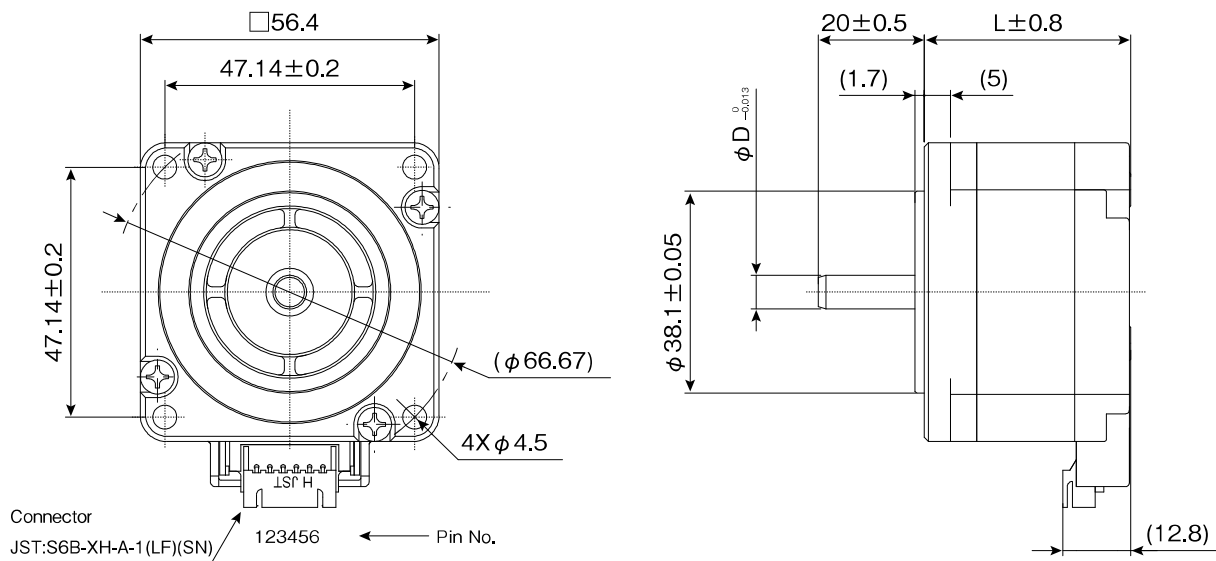
RoHS

### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mN·m	g·cm <sup>2</sup>	kg	mm
STA-56D1001	1.8	1.5	3.0	0.50	580	125	0.42	38.5
STA-56D1003	1.8	2.0	2.0	0.98	570	125	0.42	38.5
STA-56D1005	1.8	4.2	1.0	4.20	560	125	0.42	38.5
STA-56D3001	1.8	2.0	3.0	0.66	1,010	225	0.57	48.0
STA-56D3003	1.8	2.5	2.0	1.26	1,030	225	0.57	48.0
STA-56D3005	1.8	5.5	1.0	5.50	1,010	225	0.57	48.0
STA-56D5001	1.8	3.3	3.0	1.10	1,960	460	0.99	73.5
STA-56D5003	1.8	4.0	2.0	2.00	1,940	460	0.99	73.5
STA-56D5005	1.8	8.9	1.0	8.90	1,910	460	0.99	73.5

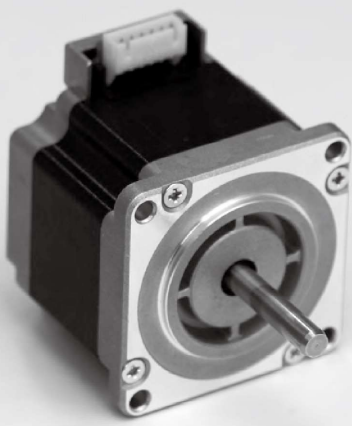
↑ Last Digit 1-5 : for Unipolar

### DIMENSIONS [EXAMPLE]



SHAFT Dia. (φ D)	
MODEL	φ D [mm]
STA-56D1XXX	φ 6.35
STA-56D3XXX	φ 6.35
STA-56D5XXX	φ 8





# 2 Phase Hybrid Stepping Motor

## 56D SERIES

□ 56mm

1.8°

Bipolar

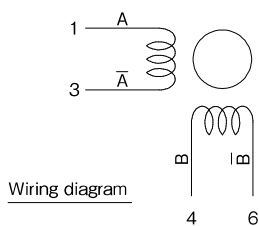
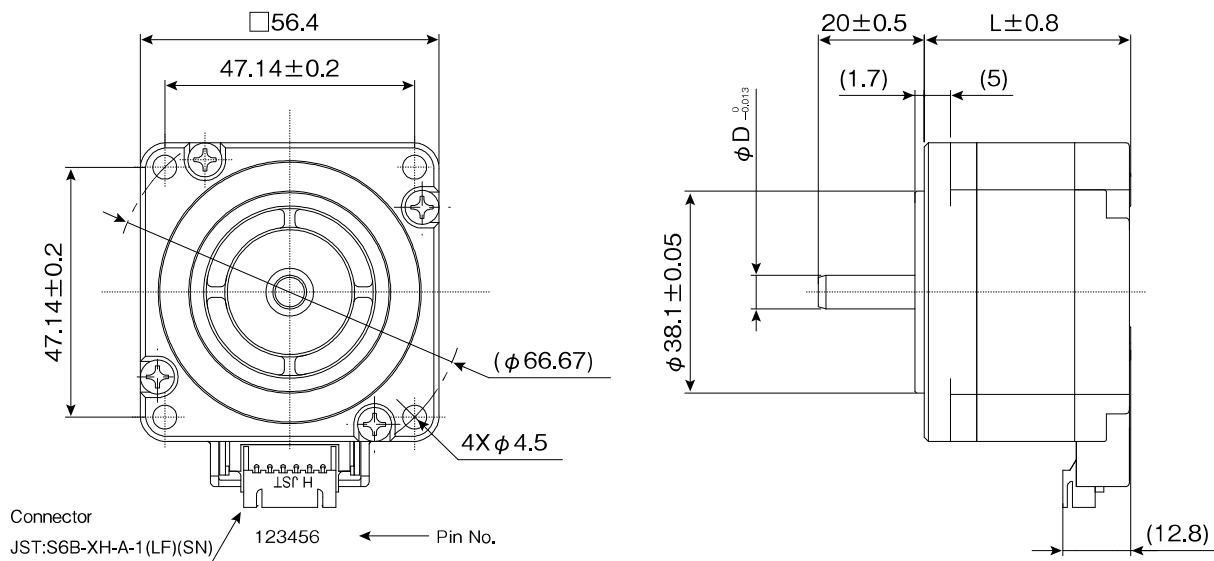
RoHS

### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mN·m	g·cm <sup>2</sup>	kg	mm
STA-56D1006	1.8	1.1	4.2	0.25	770	125	0.42	38.5
STA-56D1008	1.8	1.4	2.8	0.49	780	125	0.42	38.5
STA-56D1010	1.8	2.9	1.4	2.10	770	125	0.42	38.5
STA-56D3006	1.8	1.4	4.2	0.33	1,280	225	0.57	48.0
STA-56D3008	1.8	1.8	2.8	0.63	1,300	225	0.57	48.0
STA-56D3010	1.8	3.9	1.4	2.75	1,280	225	0.57	48.0
STA-56D5006	1.8	2.3	4.2	0.55	2,520	460	0.99	73.5
STA-56D5008	1.8	2.8	2.8	1.00	2,560	460	0.99	73.5
STA-56D5010	1.8	6.2	1.4	4.45	2,520	460	0.99	73.5

↑ Last Digit 6-10 : for Bipolar

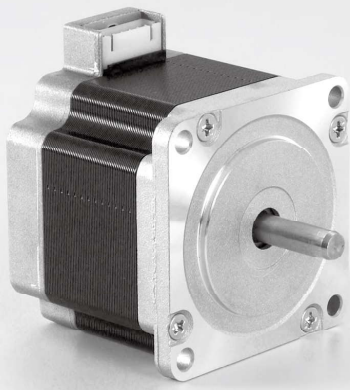
### DIMENSIONS [EXAMPLE]



SHAFT Dia. (φ D)	
MODEL	φ D [mm]
STA-56D1XXX	φ 6.35
STA-56D3XXX	φ 6.35
STA-56D5XXX	φ 8







# 2 Phase Hybrid Stepping Motor

## 59D SERIES

□ 56mm

1.8°

Unipolar

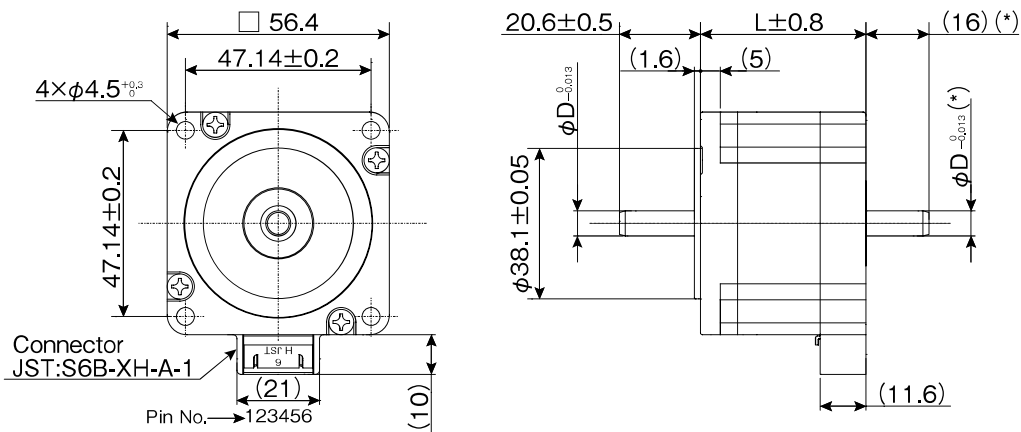
RoHS

### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	kg	mm
SST59D110X	1.8	4.7	1.0	4.70	7.5	667	145	0.51	42
SST59D115X	1.8	3.2	1.5	2.10	3.4	667	145	0.51	42
SST59D120X	1.8	2.6	2.0	1.30	2.0	680	145	0.51	42
SST59D125X	1.8	2.1	2.5	0.85	1.3	692	145	0.51	42
SST59D130X	1.8	1.9	3.0	0.62	0.9	667	145	0.51	42
SST59D210X	1.8	5.5	1.0	5.50	9.2	925	210	0.62	48.5
SST59D215X	1.8	3.6	1.5	2.40	4.1	925	210	0.62	48.5
SST59D220X	1.8	2.8	2.0	1.40	2.4	936	210	0.62	48.5
SST59D225X	1.8	2.4	2.5	0.95	1.6	947	210	0.62	48.5
SST59D230X	1.8	2.0	3.0	0.67	1.1	925	210	0.62	48.5
SST59D310X	1.8	6.3	1.0	6.30	11.1	1,088	245	0.71	54.5
SST59D315X	1.8	4.2	1.5	2.80	5.1	1,088	245	0.71	54.5
SST59D320X	1.8	3.4	2.0	1.70	3.0	1,106	245	0.71	54.5
SST59D325X	1.8	2.8	2.5	1.10	2.0	1,126	245	0.71	54.5
SST59D330X	1.8	2.5	3.0	0.82	1.3	1,088	245	0.71	54.5
SST59D510X	1.8	9.6	1.0	9.60	19	1,847	470	1.11	77.5
SST59D515X	1.8	6.3	1.5	4.20	8.4	1,847	470	1.11	77.5
SST59D520X	1.8	5.0	2.0	2.50	4.9	1,876	470	1.11	77.5
SST59D525X	1.8	4.3	2.5	1.70	3.3	1,906	470	1.11	77.5
SST59D530X	1.8	3.6	3.0	1.20	2.2	1,847	470	1.11	77.5

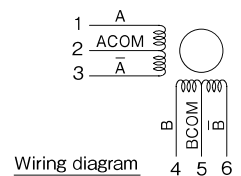
↖ Last Digit (for Unipolar) 0:Single Shaft 1:Double Shaft

### DIMENSIONS [EXAMPLE]

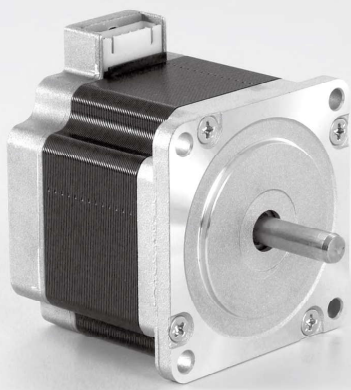


\* Dimensions apply to double shaft models.

SHAFT Dia. (φD)	
MODEL	φD [mm]
SST59D1XXX	φ6.35
SST59D2XXX	φ6.35
SST59D3XXX	φ6.35
SST59D5XXX	φ8







# 2 Phase Hybrid Stepping Motor

## 59D SERIES

□ 56mm

1.8°

Bipolar

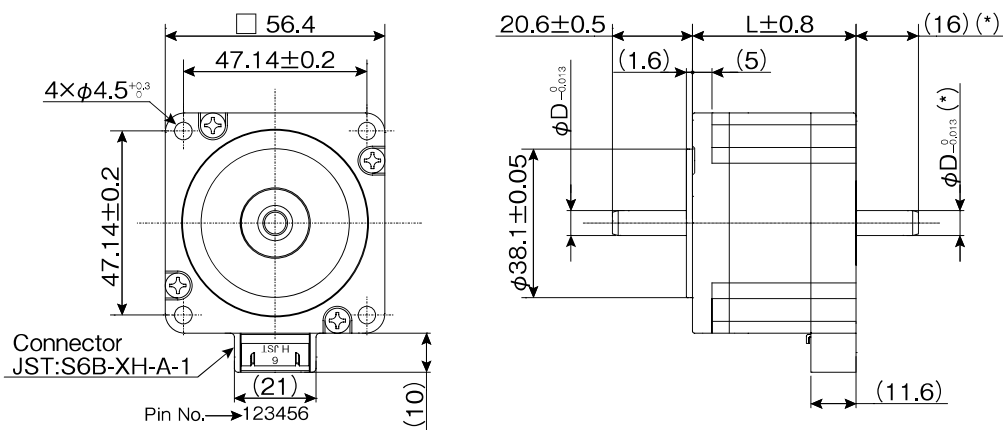
RoHS

### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	kg	mm
SST59D110X	1.8	3.3	1.4	2.35	7.5	870	145	0.51	42
SST59D115X	1.8	2.2	2.1	1.05	3.4	870	145	0.51	42
SST59D120X	1.8	1.8	2.8	0.65	2.0	880	145	0.51	42
SST59D125X	1.8	1.5	3.5	0.43	1.3	890	145	0.51	42
SST59D130X	1.8	1.3	4.2	0.31	0.9	870	145	0.51	42
SST59D210X	1.8	3.9	1.4	2.75	9.2	1,200	210	0.62	48.5
SST59D215X	1.8	2.5	2.1	1.20	4.1	1,200	210	0.62	48.5
SST59D220X	1.8	2.0	2.8	0.70	2.4	1,220	210	0.62	48.5
SST59D225X	1.8	1.7	3.5	0.48	1.6	1,240	210	0.62	48.5
SST59D230X	1.8	1.4	4.2	0.34	1.1	1,200	210	0.62	48.5
SST59D310X	1.8	4.4	1.4	3.15	11.1	1,410	245	0.71	54.5
SST59D315X	1.8	2.9	2.1	1.40	5.1	1,410	245	0.71	54.5
SST59D320X	1.8	2.4	2.8	0.85	3.0	1,440	245	0.71	54.5
SST59D325X	1.8	1.9	3.5	0.55	2.0	1,460	245	0.71	54.5
SST59D330X	1.8	1.7	4.2	0.41	1.3	1,410	245	0.71	54.5
SST59D510X	1.8	6.7	1.4	4.80	19	2,400	470	1.11	77.5
SST59D515X	1.8	4.4	2.1	2.10	8.4	2,400	470	1.11	77.5
SST59D520X	1.8	3.5	2.8	1.25	4.9	2,440	470	1.11	77.5
SST59D525X	1.8	3.0	3.5	0.85	3.3	2,580	470	1.11	77.5
SST59D530X	1.8	2.5	4.2	0.60	2.2	2,400	470	1.11	77.5

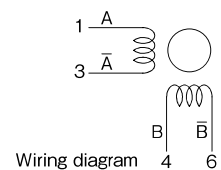
↑ Last Digit (for Bipolar) 5:Single Shaft 6:Double Shaft

### DIMENSIONS [EXAMPLE]



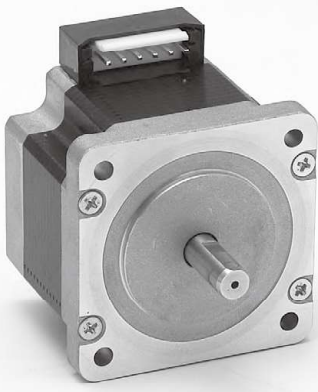
\* Dimensions apply to double shaft models.

SHAFT Dia. (φD)	
MODEL	φD [mm]
SST59D1XXX	φ6.35
SST59D2XXX	φ6.35
SST59D3XXX	φ6.35
SST59D5XXX	φ8









# 2 Phase Hybrid Stepping Motor

## 60D SERIES

□ 60mm

1.8°

Unipolar

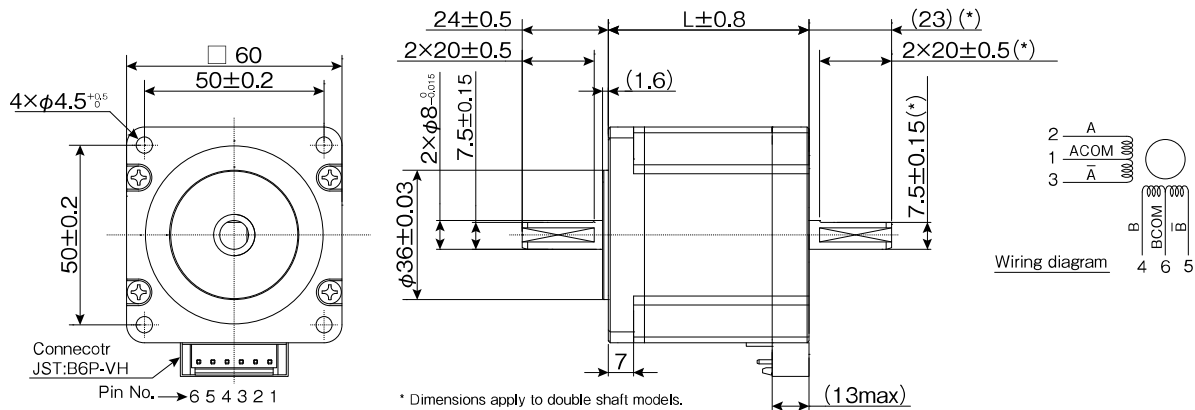
RoHS

### CHARACTERISTICS

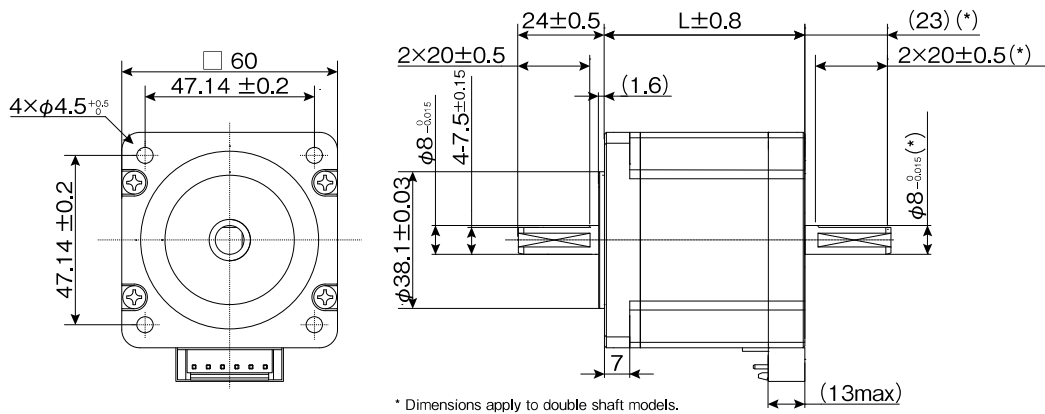
MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.								
SST60D110X	1.8	5.9	1.0	5.92	9.2	850	280	0.62	46.3
SST60D120X	1.8	3.0	2.0	1.50	2.5	880	280	0.62	46.3
SST60D130X	1.8	2.3	3.0	0.77	1.1	920	280	0.62	46.3
SST60D310X	1.8	7.3	1.0	7.33	14.5	1,320	440	0.88	55.8
SST60D320X	1.8	3.8	2.0	1.90	3.9	1,340	440	0.88	55.8
SST60D330X	1.8	2.8	3.0	0.94	1.8	1,350	440	0.88	55.8
SST60D410X	1.8	9.2	1.0	9.20	17.4	1,790	590	1.02	67.8
SST60D420X	1.8	4.8	2.0	2.40	4.9	1,850	590	1.02	67.8
SST60D430X	1.8	3.6	3.0	1.19	2.2	1,910	590	1.02	67.8
SST60D510X	1.8	12.6	1.0	12.6	29.0	2,560	920	1.40	87.8
SST60D520X	1.8	6.4	2.0	3.20	8.0	2,690	920	1.40	87.8
SST60D530X	1.8	4.7	3.0	1.55	3.7	2,800	920	1.40	87.8

↑ Last Digit (for Unipolar) 0:Single Shaft 1:Double Shaft

### DIMENSIONS [EXAMPLE]



### MOUNTING OPTION









## 2 Phase Hybrid Stepping Motor

### 86D SERIES

□ 86mm

1.8°

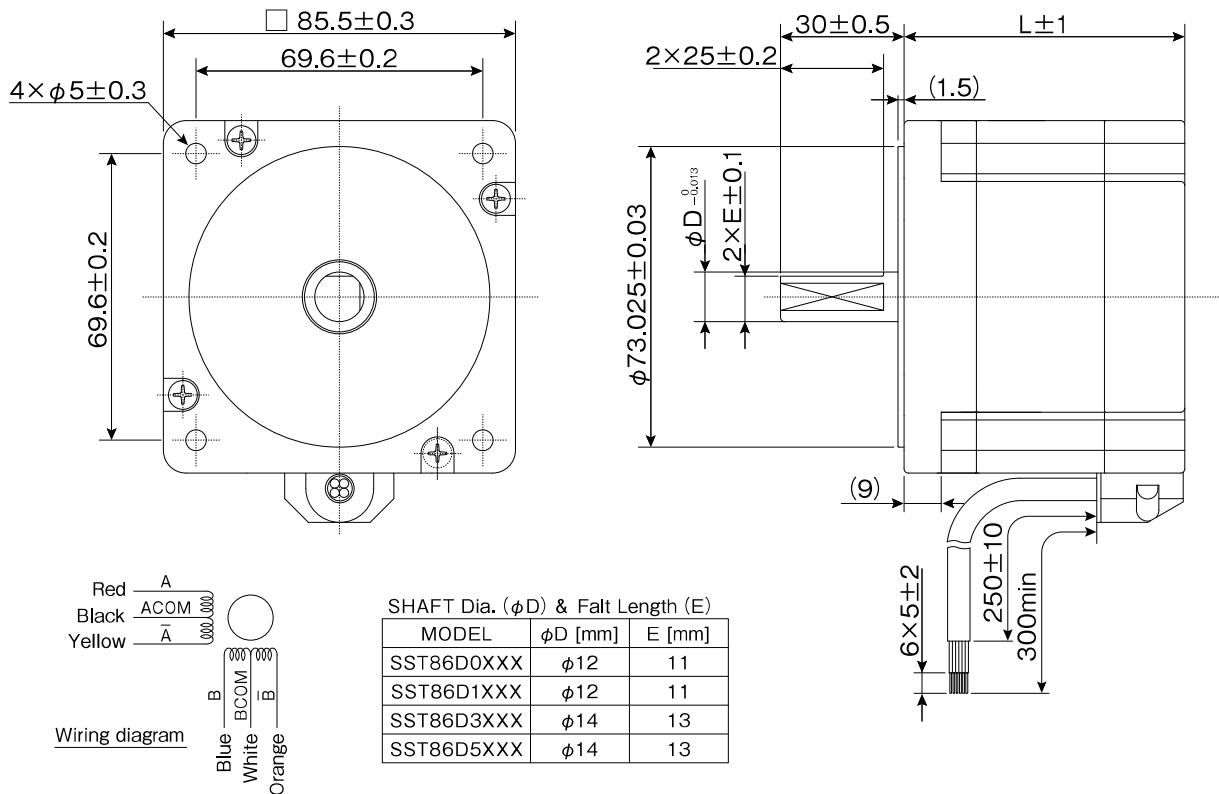
Unipolar

RoHS

#### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/φ	Ω/φ	mH/φ	mN·m	g·cm <sup>2</sup>	kg	mm
SST86D0200	1.8	4.20	2.0	2.10	5.50	1,940	1,170	1.71	62.5
SST86D0300	1.8	3.00	3.0	1.00	2.50	1,940	1,170	1.71	62.5
SST86D0450	1.8	1.98	4.5	0.44	1.10	1,940	1,170	1.71	62.5
SST86D1200	1.8	4.80	2.0	2.40	7.50	2,860	1,630	2.00	68.1
SST86D1300	1.8	3.30	3.0	1.10	3.40	2,860	1,630	2.00	68.1
SST86D1450	1.8	2.21	4.5	0.49	1.50	2,860	1,630	2.00	68.1
SST86D3200	1.8	7.60	2.0	3.80	15.5	6,180	3,200	2.90	101.5
SST86D3300	1.8	5.25	3.0	1.75	7.00	6,180	3,200	2.90	101.5
SST86D3450	1.8	3.33	4.5	0.74	3.30	6,180	3,200	2.90	101.5
SST86D5200	1.8	10.4	2.0	5.20	23.0	9,280	4,800	4.00	132
SST86D5300	1.8	6.90	3.0	2.30	10.5	9,280	4,800	4.00	132
SST86D5450	1.8	4.05	4.5	0.90	4.10	8,360	4,800	4.00	132

#### DIMENSIONS [EXAMPLE]

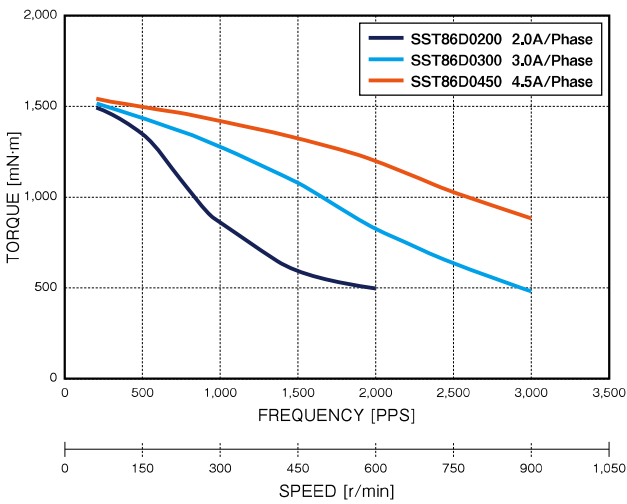


## TORQUE RANGE

STEP ANGLE	SIZE		WINDINGS	MODEL	HOLDING TORQUE [mN·m]																	
					1,500	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000								
1.8°	86mm	NEMA34	Unipolar	86D0	■																	
				86D1		■																
				86D3							■											
				86D5												■						

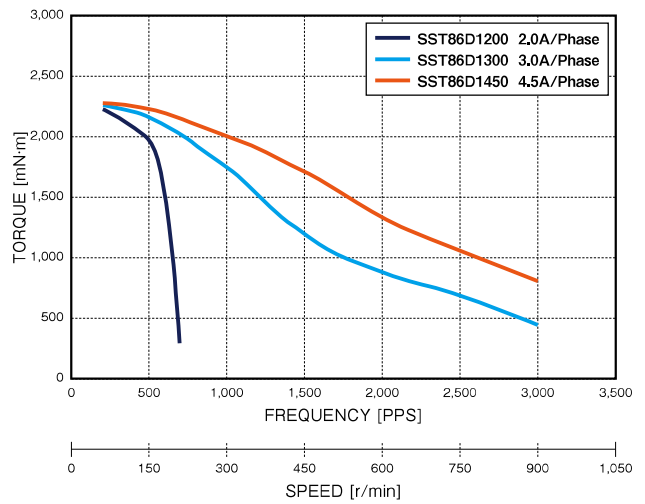
## PULL OUT TORQUE CURVE

SST86D0XXX



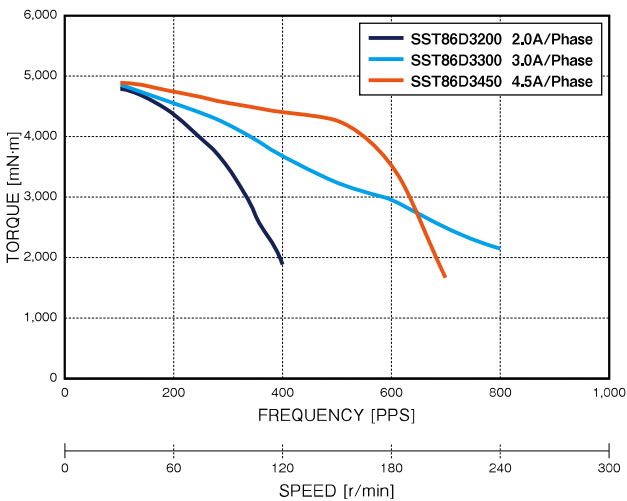
DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

SST86D1XXX



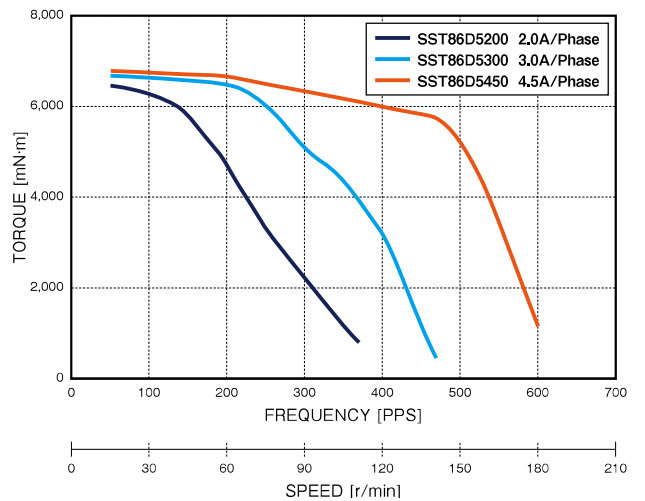
DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

SST86D3XXX



DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

SST86D5XXX



DRIVER : Chopper      SUPPLY VOLTAGE : DC24V  
EXCITING MODE = 2 Phase

**i** Available shaft, lead wires, winding, encoder and other customization. Feel free to contact sales office or sales agent.



Operate the motor keeping the motor surface temperature at 100 Deg. C or lower.



## 2 Phase Hybrid Stepping Motor

### 86D SERIES

□ 86mm

1.8°

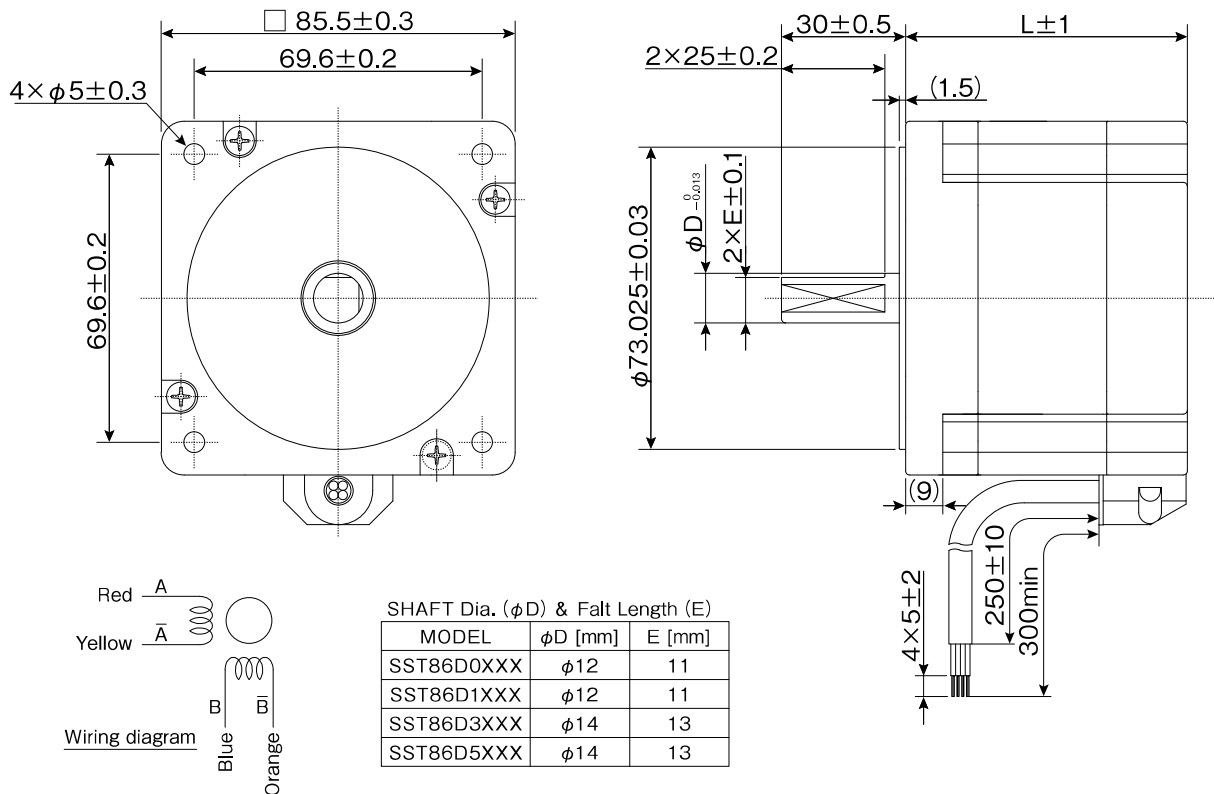
Bipolar

RoHS

#### CHARACTERISTICS

MODEL	STEP ANGLE	VOLTAGE	CURRENT	RESISTANCE	INDUCTANCE	HOLDING TORQUE	ROTOR INERTIA	MASS	LENGTH
	Deg.	V	A/ $\phi$	$\Omega/\phi$	mH/ $\phi$	mN·m	g·cm <sup>2</sup>	kg	mm
SST86D0205	1.8	3.8	2.0	1.90	9.50	2,660	1,170	1.71	62.5
SST86D0405	1.8	2.2	4.0	0.55	2.50	2,660	1,170	1.71	62.5
SST86D0605	1.8	1.5	6.0	0.24	1.10	2,660	1,170	1.71	62.5
SST86D1205	1.8	4.2	2.0	2.10	13.0	3,880	1,630	2.00	68.1
SST86D1405	1.8	2.4	4.0	0.60	3.40	3,880	1,630	2.00	68.1
SST86D1605	1.8	1.6	6.0	0.27	1.50	3,880	1,630	2.00	68.1
SST86D3205	1.8	7.0	2.0	3.50	28.0	7,290	3,200	2.90	101.5
SST86D3405	1.8	3.6	4.0	0.90	7.10	7,290	3,200	2.90	101.5
SST86D3605	1.8	2.4	6.0	0.40	3.30	7,290	3,200	2.90	101.5
SST86D5205	1.8	9.0	2.0	4.50	41.0	10,600	4,800	4.00	132
SST86D5405	1.8	4.8	4.0	1.20	10.5	10,600	4,800	4.00	132
SST86D5605	1.8	2.9	6.0	0.48	4.10	10,600	4,800	4.00	132

#### DIMENSIONS [EXAMPLE]







# Standard Brushless DC Series

## SDR-3434 SERIES φ 36mm 30W

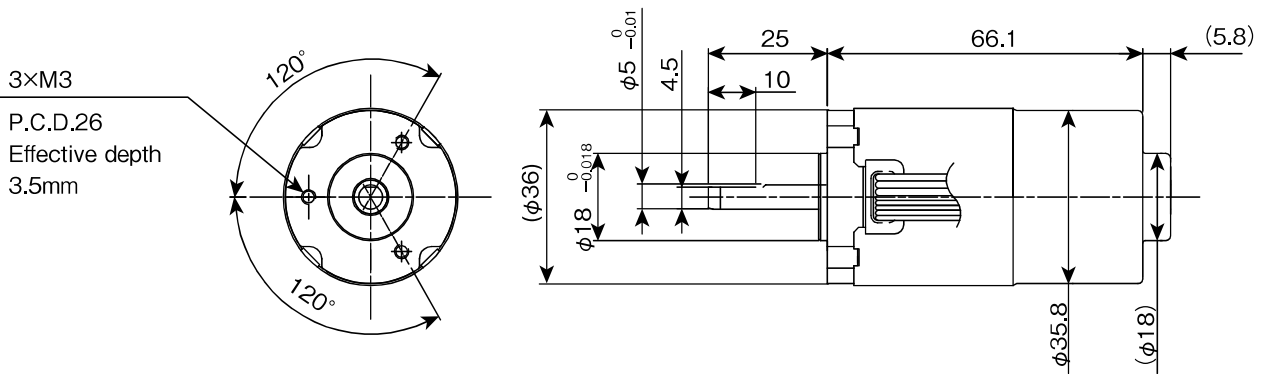


### CHARACTERISTICS

Model	SDR-3434-001	SDR-3434-002	SDR-3434-004
Rated voltage	DC 24 V	DC 48 V	DC 310 V
Rated current	2.0 A	0.95 A	0.17 A
Rated torque	30 mN·m		
Rated speed	10,500 r/min		
Rated output	30 W		
Instantaneous peak torque	90 mN·m		
Permissible thrust load	9.8 N		
Permissible radial load	9.8 N		
Rotor inertia	7.0 g·cm <sup>2</sup>		
Hall IC voltage	5 V		
Signal output	OPEN COLLECTOR		
Sink current	10 mA		
Mass	250 g		
Operating ambient temperature	0 °C~50 °C		
Operating ambient humidity	20 %~80 %		

Condition : continuous duty with 150×150×16 aluminium heat sink.

### DIMENSIONS [EXAMPLE]









## Standard Brushless DC Series

### SDR-42310 SERIES

□ 42mm 30W

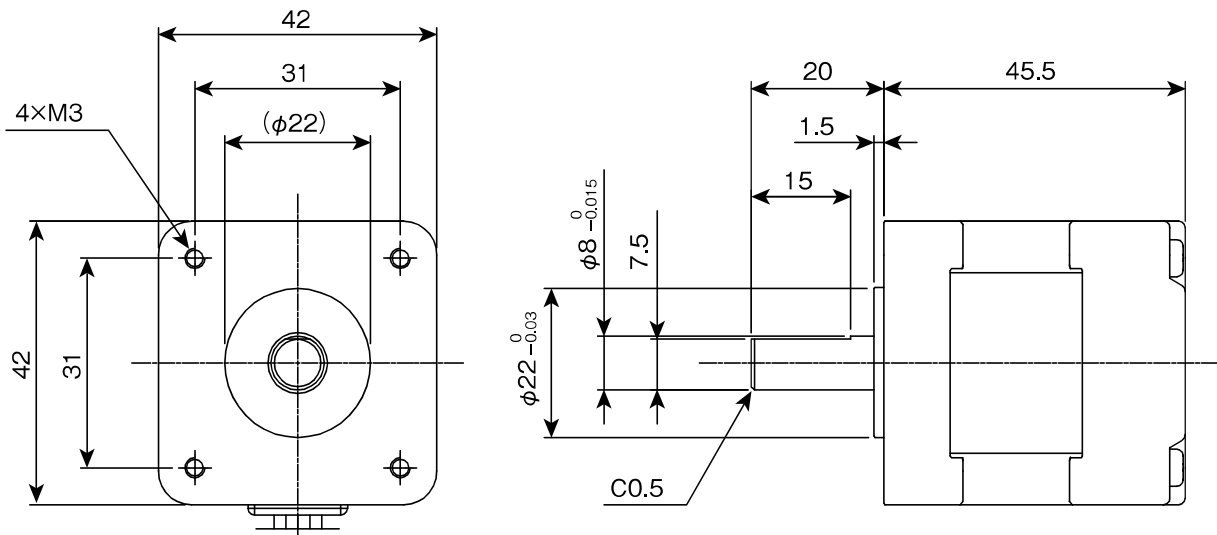


#### CHARACTERISTICS

Model	SDR-42310-001	SDR-42310-002
Rated voltage	DC 24 V	DC 48 V
Rated current	2.0 A	1.0 A
Rated torque	98 mN·m	
Rated speed	3,000 r/min	
Rated output	30 W	
Instantaneous peak torque	294 mN·m	
Permissible thrust load	1.5 N	
Permissible radial load	50 N	
Rotor inertia	31.7 g·cm <sup>2</sup>	
Hall IC voltage	5 V	
Signal output	OPEN COLLECTOR	
Sink current	10 mA	
Mass	310 g	
Operating ambient temperature	0 °C~50 °C	
Operating ambient humidity	20 %~80 %	

Condition : continuous duty with 200×200×16 t6 aluminium heat sink.

#### DIMENSIONS [EXAMPLE]







## Standard Brushless DC Series

### SDR-6038 SERIES

□ 60mm 60W

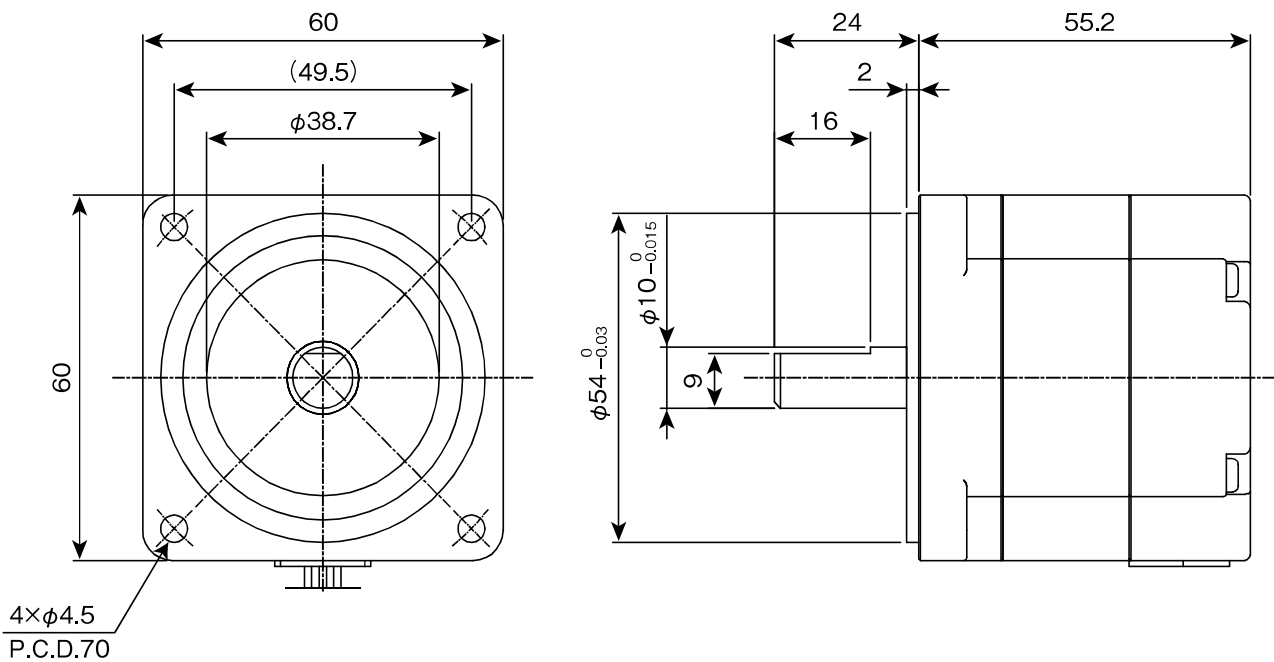


#### CHARACTERISTICS

Model	SDR-6038-001	SDR-6038-002
Rated voltage	DC 24 V	DC 48 V
Rated current	4.1 A	1.9 A
Rated torque	196 mN·m	
Rated speed	3,100 r/min	
Rated output	60 W	
Instantaneous peak torque	588 mN·m	
Permissible thrust load	3.2 N	
Permissible radial load	70 N	
Rotor inertia	120.4 g·cm <sup>2</sup>	
Hall IC voltage	5 V	
Signal output	OPEN COLLECTOR	
Sink current	10 mA	
Mass	665 g	
Operating ambient temperature	0 °C~50 °C	
Operating ambient humidity	20 %~80 %	

Condition : continuous duty with 200×200×16 t6 aluminium heat sink.

#### DIMENSIONS [EXAMPLE]

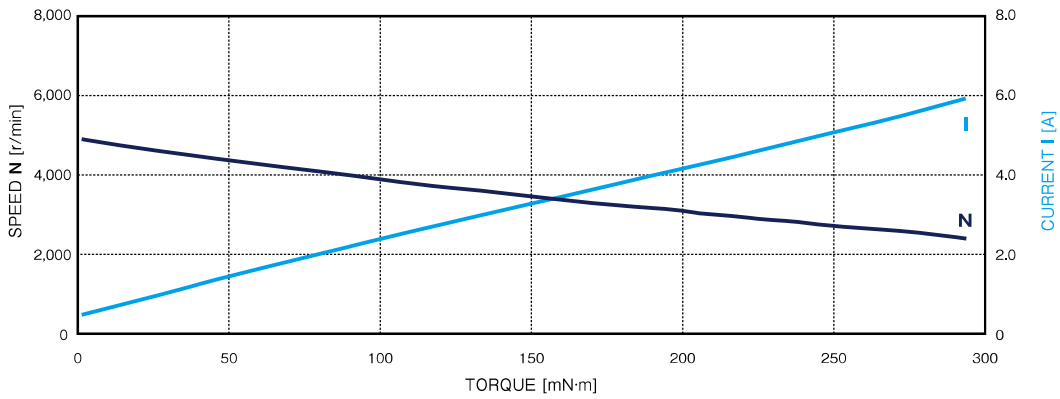


## TORQUE RANGE

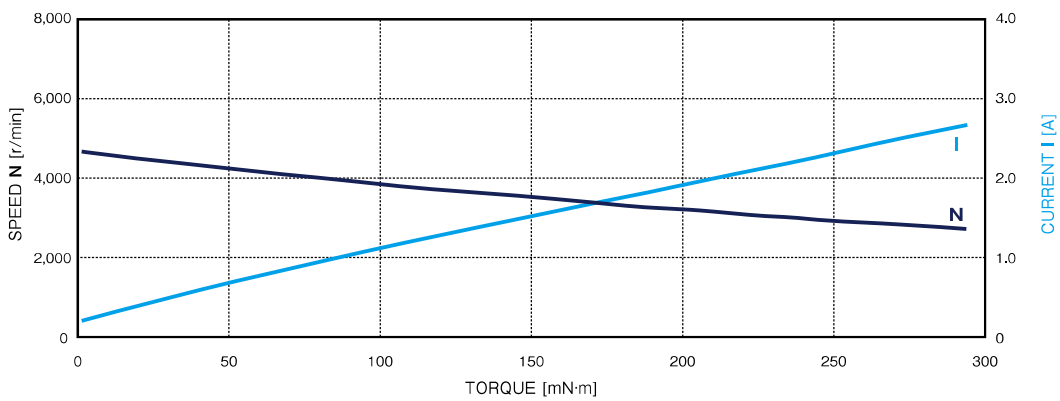
SERIES	MAJOR DIAMETER	MODEL	RATED SPEED	TORQUE [mN·m]															
				0	50	100	200	300	400	600	800								
Inner rotor	□60mm	SDR-6038-001	3,100																
		SDR-6038-002	3,100																

## Speed and Torque Characteristics

SDR-6038-001 DC24V



SDR-6038-002 DC48V



**i** Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.

Stepping Motor

BLDC Motor

Motor Driver

Other Motor



## Standard Brushless DC Series

### SDR-14312 SERIES

φ14mm 0.2W

### SDR-20312 SERIES

φ20mm 1.8W

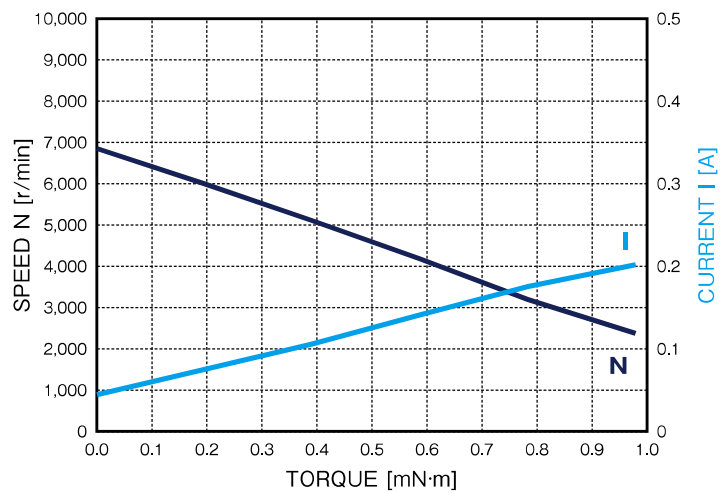


#### SDR-14312 SERIES

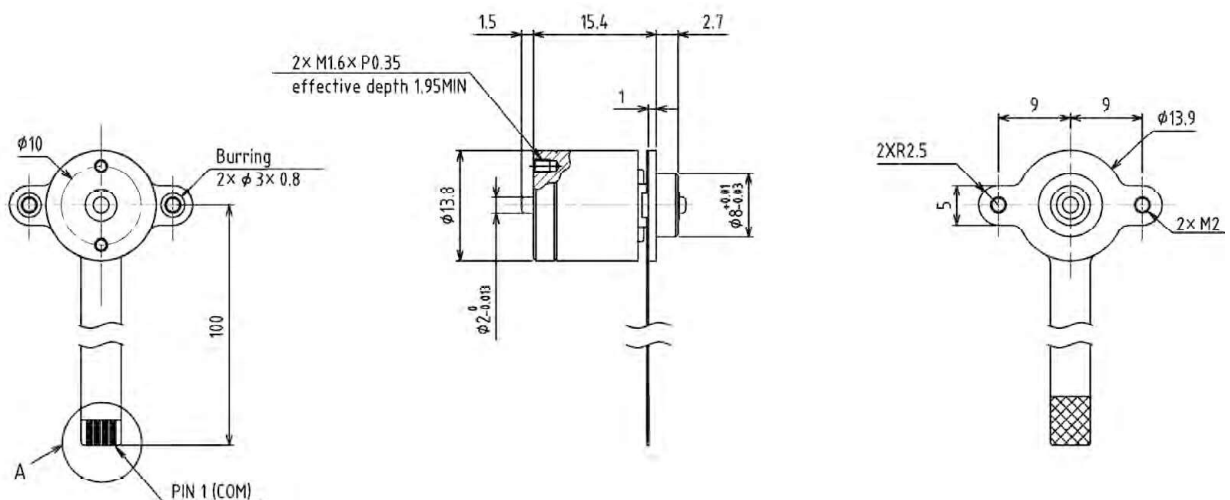
##### CHARACTERISTICS

Model	SDR-14312-001
Rated voltage	DC 5 V
Rated current	0.11 A
Rated torque	0.5 mN·m
Rated speed	4,500 r/min
Rated output	0.2 W
Permissible thrust load	0.1 N
Permissible radial load	0.1 N
Rotor inertia	2.7 g·cm <sup>2</sup>
Hall IC voltage	None
Signal output	None
Sink current	None
Mass	14 g
Operating ambient temperature	0 °C~50 °C
Operating ambient humidity	20 %~80 %

##### Speed and Torque Characteristics



##### DIMENSIONS [EXAMPLE]









# Standard Brushless DC Series

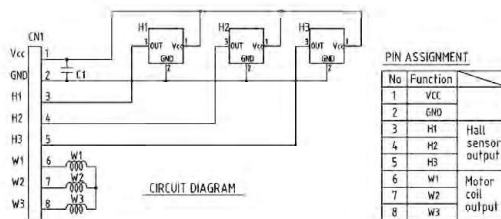
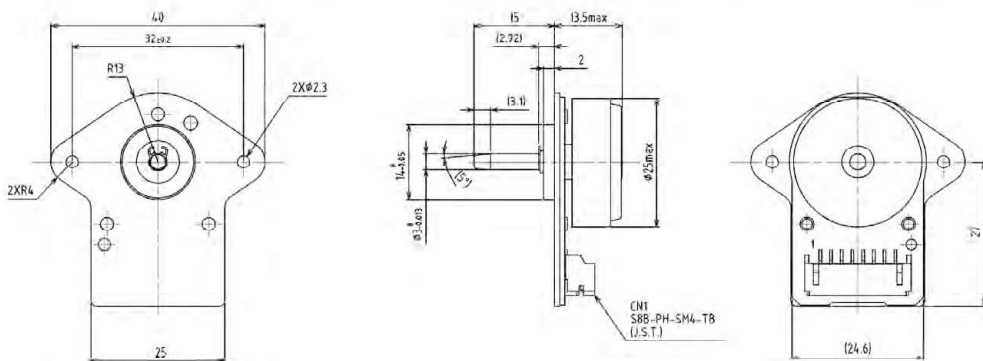
## SDR-24312 SERIES $\phi 24\text{mm}$ 0.5W~2.0W



### CHARACTERISTICS

Model	SDR-24312-001	SDR-24312-002	SDR-24312-003
Rated voltage	DC 12 V		
Rated current	0.17 A	0.23 A	0.38 A
Rated torque	4.9 mN·m	4.9 mN·m	4.9 mN·m
Rated speed	930 r/min	1,900 r/min	3,700 r/min
Rated output	0.5 W	1.0 W	1.9 W
Permissible thrust load	1 N		
Permissible radial load	1 N		
Rotor inertia	8,2 g·cm <sup>2</sup>		
Hall IC voltage	5 V		
Signal output	OPEN COLLECTOR		
Sink current	10 mA		
Mass	30 g		
Operating ambient temperature	0 °C~50 °C		
Operating ambient humidity	20 %~80 %		

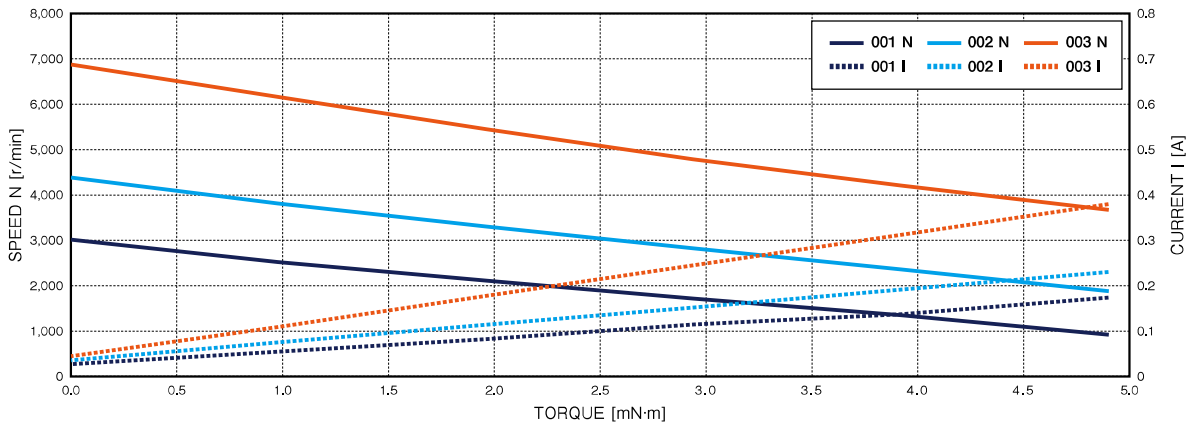
### DIMENSIONS [EXAMPLE]



## TORQUE RANGE

SERIES	MAJOR DIAMETER	MODEL	RATED SPEED	TORQUE [mN·m]												
				0	5	10	15	20	25	30	35	40	50	60		
Outer rotor	φ24	SDR-24312-001	930	0	5	10	15	20	25	30	35	40	50	60		
Outer rotor	φ24	SDR-24312-002	1,900	0	5	10	15	20	25	30	35	40	50	60		
Outer rotor	φ24	SDR-24312-003	3,700	0	5	10	15	20	25	30	35	40	50	60		

## Speed and Torque Characteristics



Stepping Motor

BLDC Motor

Motor Driver

Other Motor



Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.



# Standard Brushless DC Series

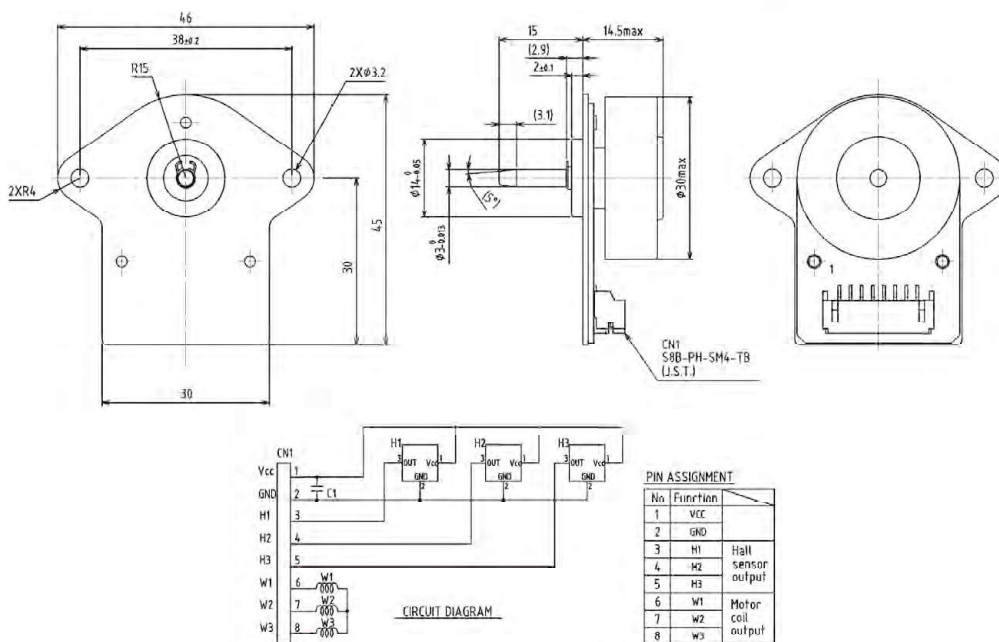
## SDR-29312 SERIES $\phi$ 29mm 2.0W~5.5W



### CHARACTERISTICS

Model	SDR-29312-001	SDR-29312-002	SDR-29312-003
Rated voltage	DC 24 V		
Rated current	0.21 A	0.28 A	0.37 A
Rated torque	9.8 mN·m	9.8 mN·m	9.8 mN·m
Rated speed	2,200 r/min	3,500 r/min	5,350 r/min
Rated output	2.1 W	3.4 W	5.2 W
Permissible thrust load	1 N		
Permissible radial load	1 N		
Rotor inertia	21.8 g·cm <sup>2</sup>		
Hall IC voltage	5 V		
Signal output	OPEN COLLECTOR		
Sink current	10 mA		
Mass	50 g		
Operating ambient temperature	0 °C~50 °C		
Operating ambient humidity	20 %~80 %		

### DIMENSIONS [EXAMPLE]







# Standard Brushless DC Series

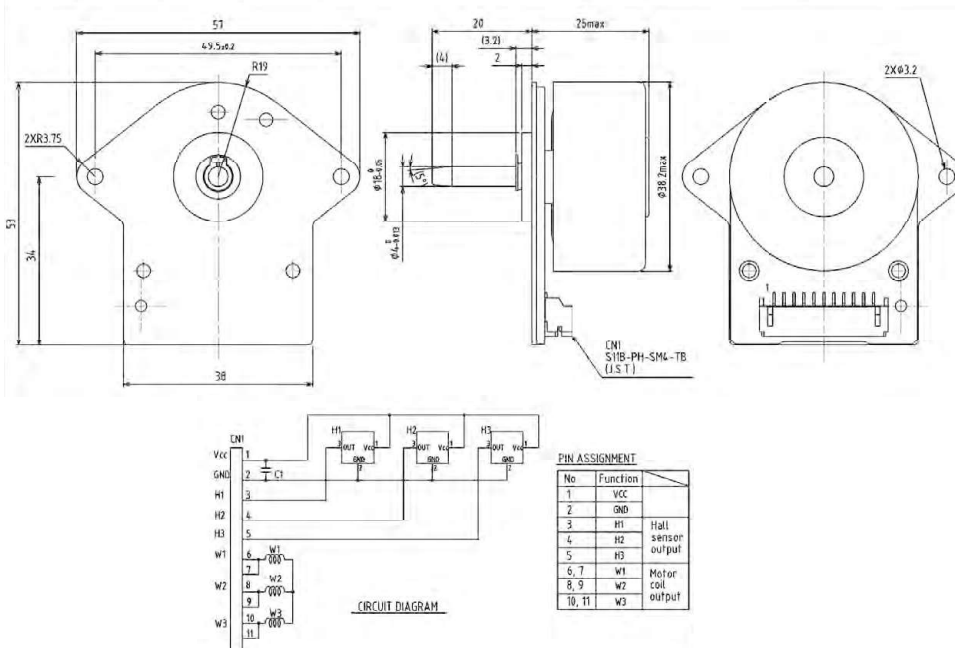
## SDR-38312 SERIES $\phi 38\text{mm}$ 2.5W~8.0W



### CHARACTERISTICS

Model	SDR-38312-001	SDR-38312-002	SDR-38312-003
Rated voltage	DC 24 V		
Rated current	0.24 A	0.34 A	0.50 A
Rated torque	39.2 mN·m	39.2 mN·m	39.2 mN·m
Rated speed	670 r/min	1,150 r/min	1,980 r/min
Rated output	2.7 W	4.7 W	8.1 W
Permissible thrust load	3.8 N		
Permissible radial load	5.5 N		
Rotor inertia	127.8 g·cm <sup>2</sup>		
Hall IC voltage	5 V		
Signal output	OPEN COLLECTOR		
Sink current	10 mA		
Mass	120 g		
Operating ambient temperature	0 °C~50 °C		
Operating ambient humidity	20 %~80 %		

### DIMENSIONS [EXAMPLE]









# Standard Brushless DC Series

## SDR-4316-0 SERIES

φ43mm 4.0W~9.0W

## SDR-4316-1 SERIES

φ43mm 33W

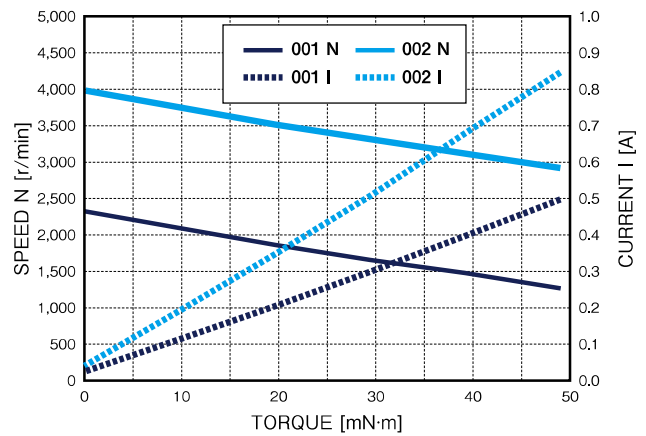


### SDR-4316-0 SERIES

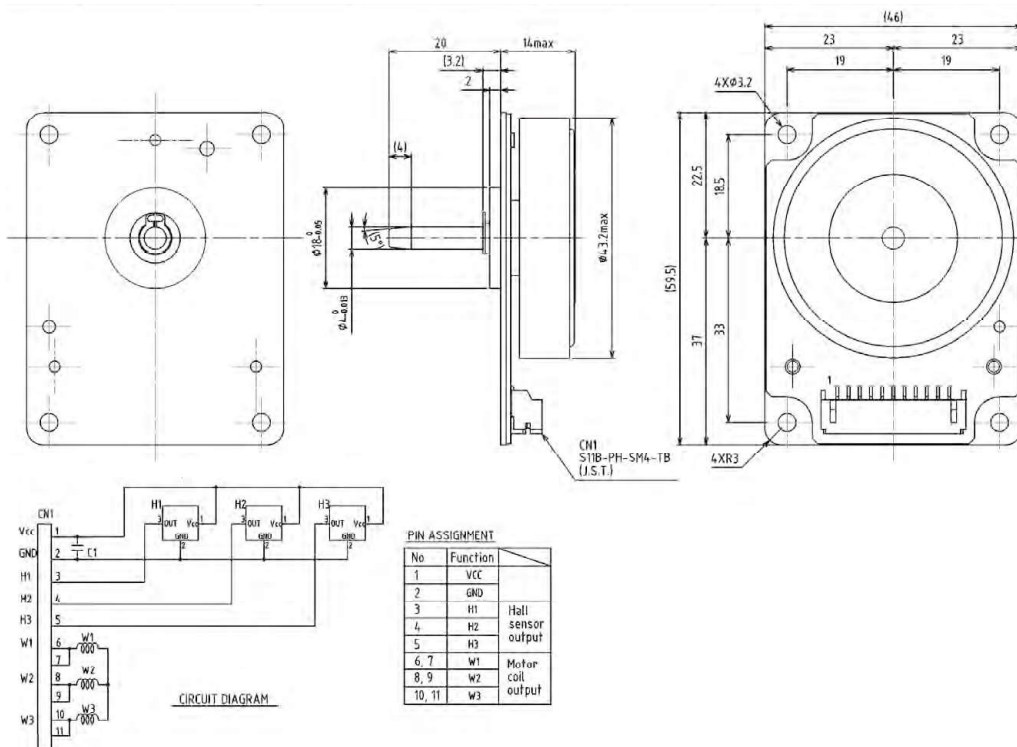
#### CHARACTERISTICS

Model	SDR-4316-001	SDR-4316-002
Rated voltage	DC 24 V	
Rated current	0.25 A	0.43 A
Rated torque	24.5 mN·m	24.5 mN·m
Rated speed	1,760 r/min	3,400 r/min
Rated output	4.5 W	8.7 W
Permissible thrust load	3.8 N	
Permissible radial load	2.4 N	
Rotor inertia	88.7 g·cm <sup>2</sup>	
Hall IC voltage	5 V	
Signal output	OPEN COLLECTOR	
Sink current	10 mA	
Mass	90 g	
Operating ambient temperature	0 °C~50 °C	
Operating ambient humidity	20 %~80 %	

#### Speed and Torque Characteristics



#### DIMENSIONS [EXAMPLE]









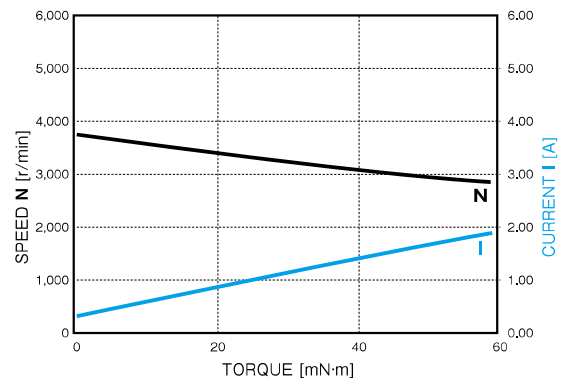
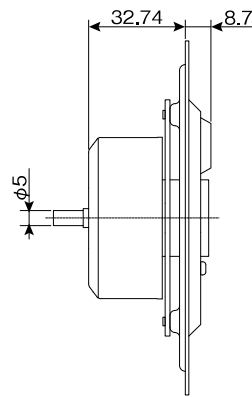
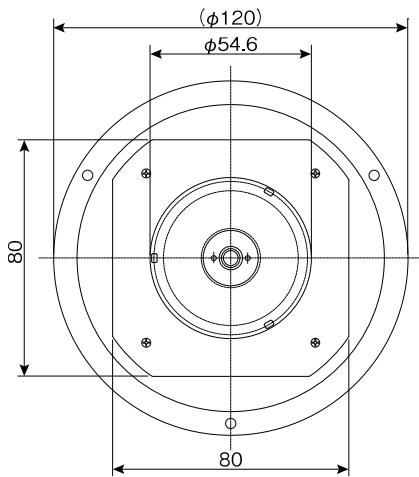
**RoHS**

**TORQUE RANGE**

SERIES	MAJOR DIAMETER	MODEL	LENGTH [mm]	RATED SPEED	TORQUE [mN·m]										
					0	10	20	30	40	50	60	70	80	90	100
Outer rotor	φ55mm	DR-55310	32.74	3,000											
Outer rotor	φ63mm	DR-6236	43.0	1,800											

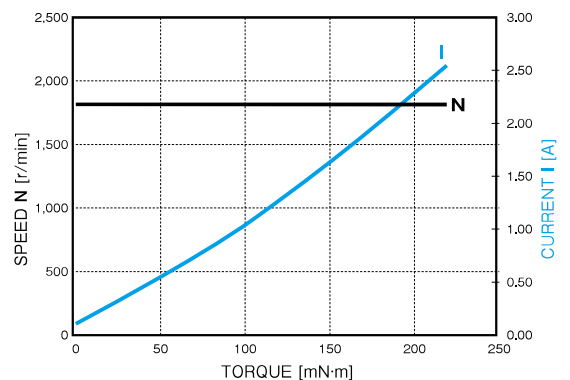
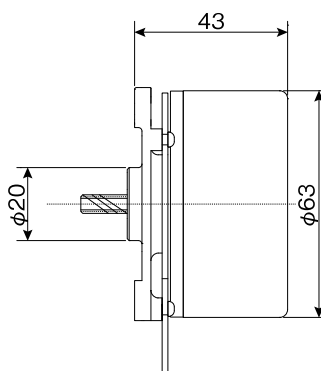
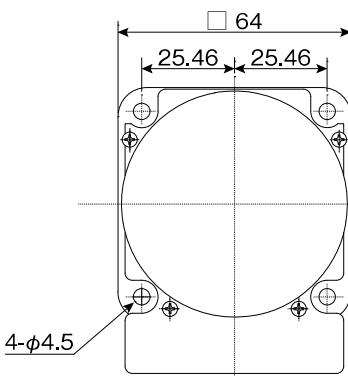
**DR-55310**

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
DC 14 V	40 mN·m	3,000 r/min	1.4 A



**DR-6236**

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
DC 24 V	160 mN·m	1,800 r/min	2.1 A



**i** Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.

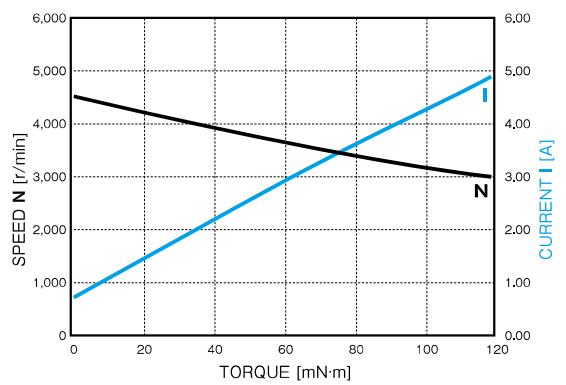
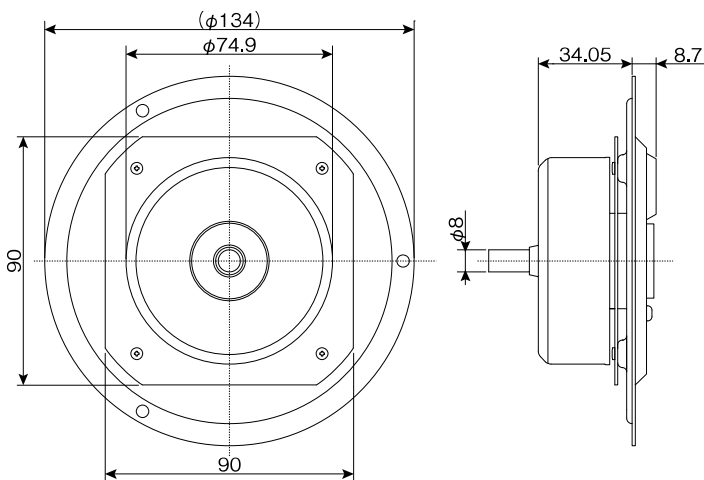
Stepping Motor  
BLDC Motor  
Motor Driver  
Other Motor

# Outer Rotor Brushless DC Series



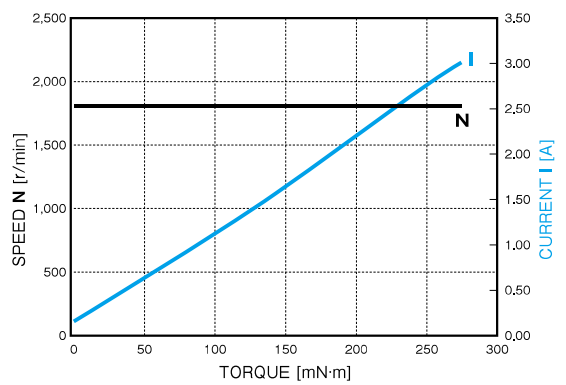
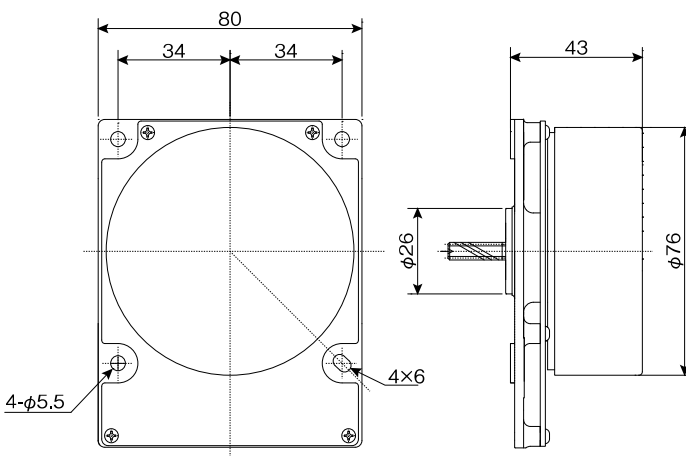
## DR-7538

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
DC 12 V	100 mN·m	3,100 r/min	4.3 A



## DR-7638

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
DC 24 V	250 mN·m	1,800 r/min	3.4 A





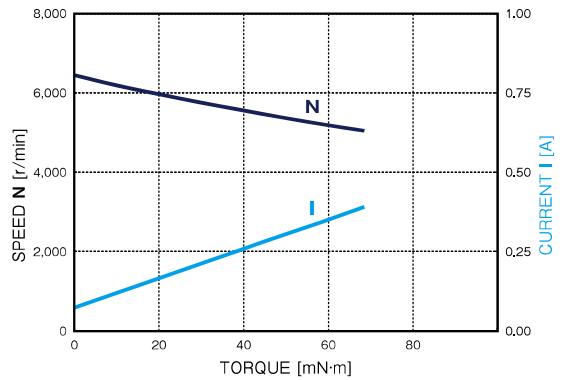
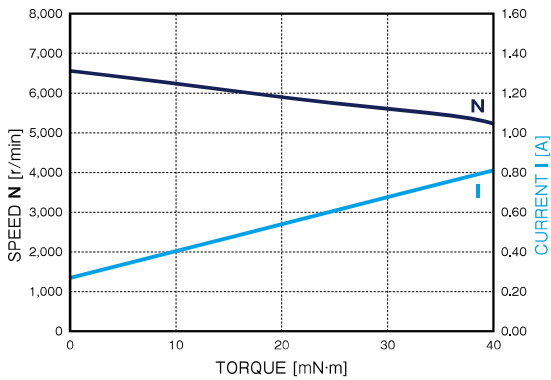
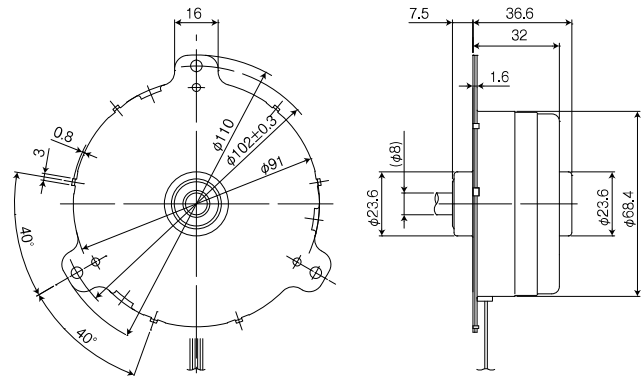
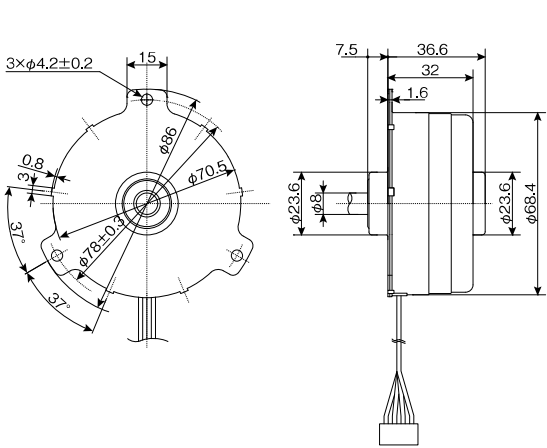


# Inner Rotor Brushless DC Series



## DR-6638 (Low Voltage / High Voltage)

RATED VOLTAGE	MAX TORQUE	RATED SPEED	MAX CURRENT
DC 24~48 V	45 mN·m	4,950 r/min	1.2 A
	80 mN·m	1,500 r/min	1.0 A
DC140V	58.8 mN·m	4,500 r/min	1.0 A



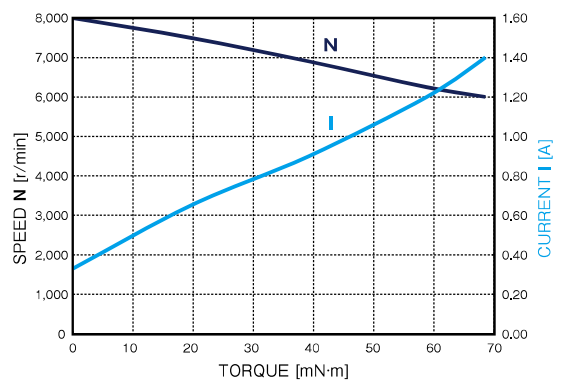
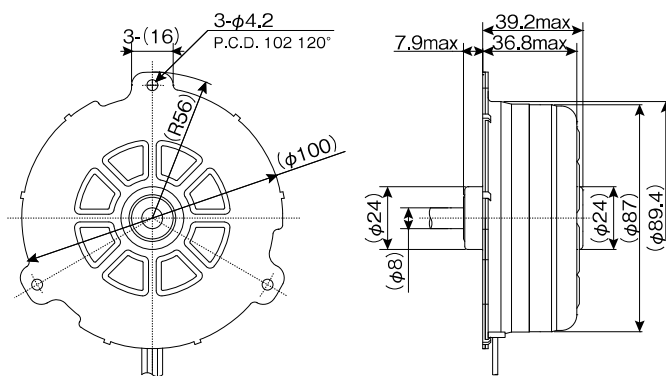


# Inner Rotor Brushless DC Series



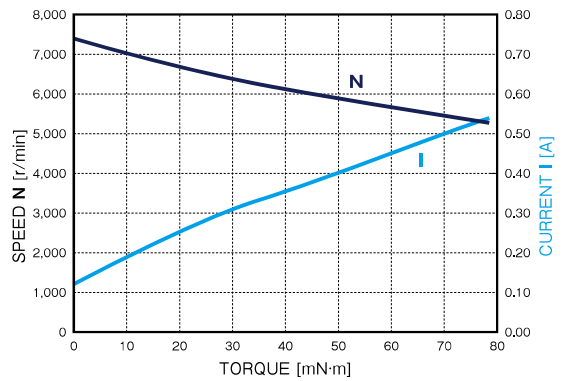
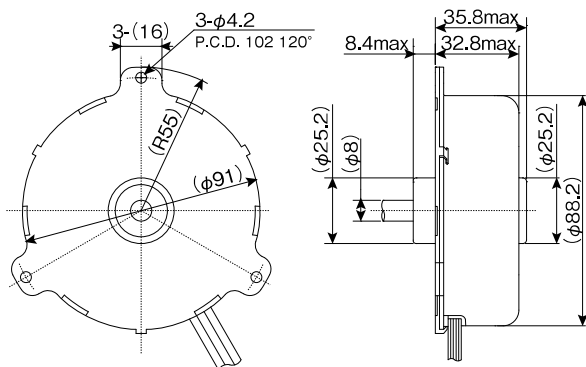
## DR-8538 (Low Voltage)

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
DC 24~48 V	83.1 mN·m	6,300 r/min	1.6 A



## DR-8538-6type

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
DC 140(280) V	75 mN·m	6,500 r/min	0.6(0.3) A

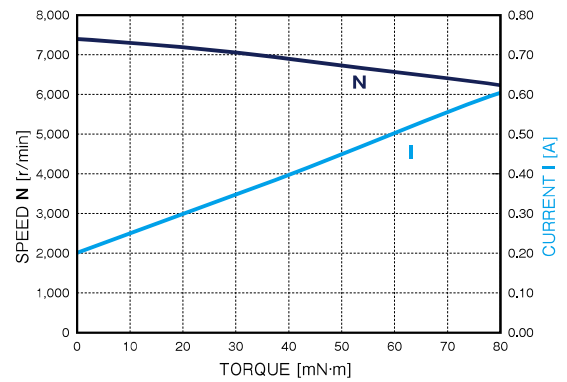
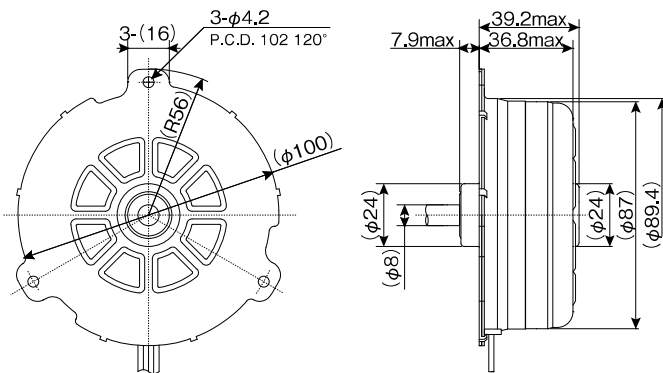


## TORQUE RANGE

SERIES	MAJOR DIAMETER	MODEL	RATED SPEED	TORQUE [mN·m]																	
				0	50	100	200	300	400	600	800	1,000	1,500								
Inner rotor	φ88.2mm	DR-8538 (Low)	6,300																		
Inner rotor	φ88.2mm	DR-8538-6	6,500																		
Inner rotor	φ88.2mm	DR-8538-8	6,500																		
Inner rotor	φ88.2mm	DR-8538-12	5,330																		

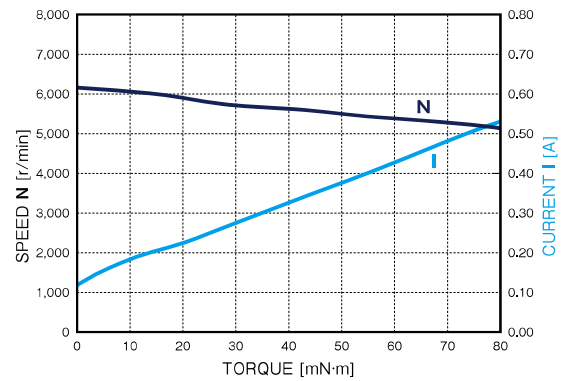
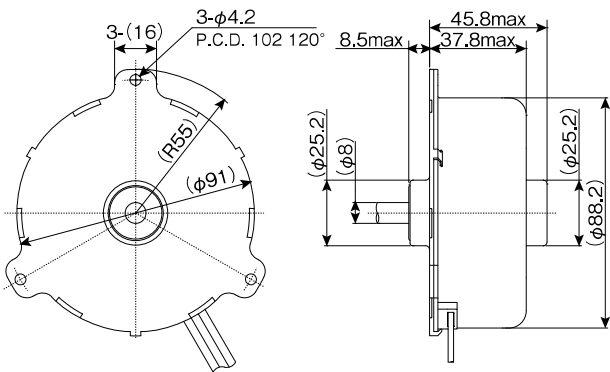
### DR-8538-8type

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
DC 140(280) V	90 mN·m	6,500 r/min	0.6(0.3) A



### DR-8538-12type

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
DC 140(280) V	115 mN·m	5,330 r/min	0.7(0.4) A



Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.

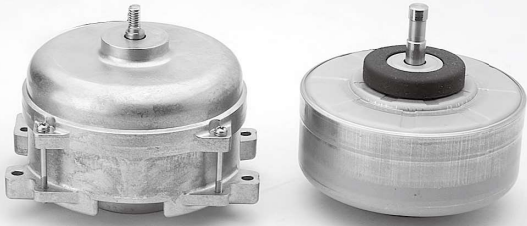
Stepping Motor

BLDC Motor

Motor Driver

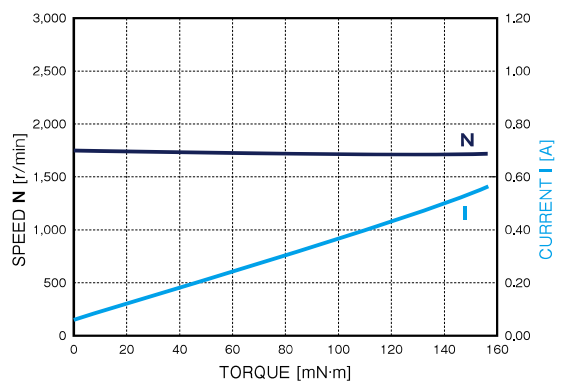
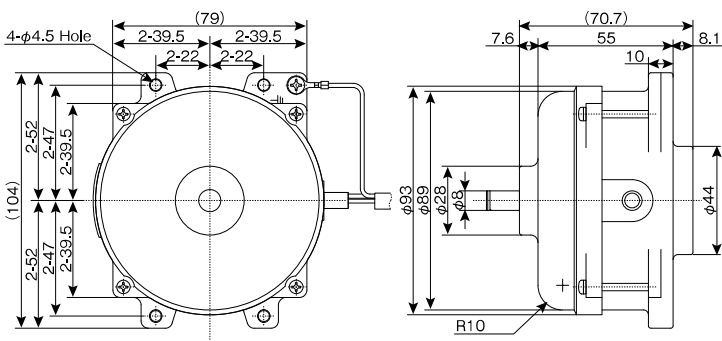
Other Motor

# Inner Rotor Brushless DC Series



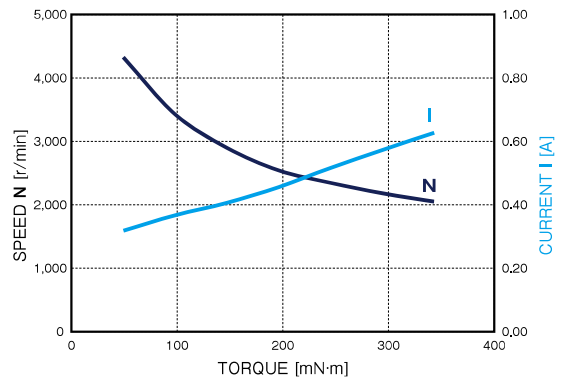
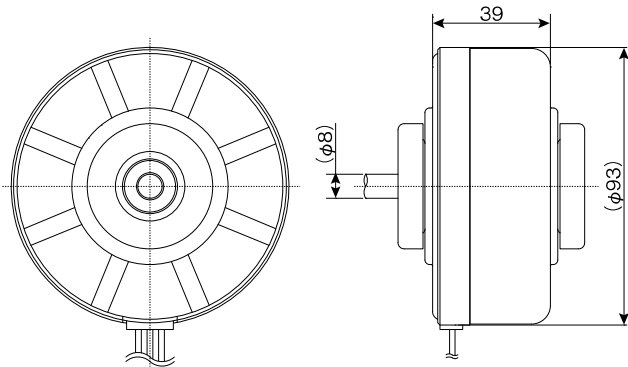
## ■ DRA-8538

RATED VOLTAGE	RATED TORQUE	RATED SPEED	RATED CURRENT
AC 100~230 V	75 mN·m	1,500 r/min	0.3 A



## ■ DR-8838

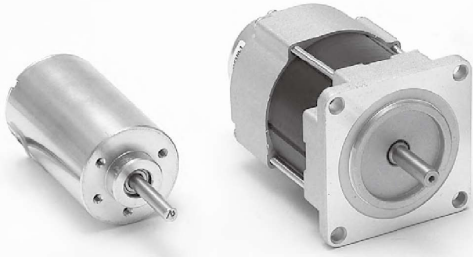
RATED VOLTAGE	MAX TORQUE	RATED SPEED	RATED CURRENT
DC 140~280 V	340 mN·m	1,800 r/min	1.6 A







# Inner Rotor Brushless DC Series

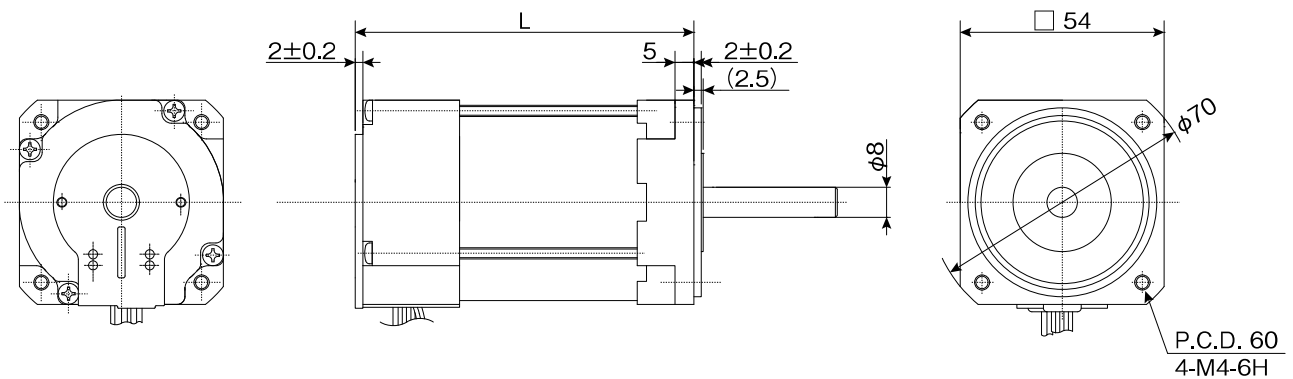


## CHARACTERISTICS

MOTOR TYPE	VOLTAGE	MAX OUTPUT	TORQUE	SPEED	CURRENT
LA052-040	DC 24 V	40 W	127 mN·m	2,900 r/min	2.35 A
	DC 75 V	40 W	127 mN·m	3,000 r/min	0.75 A
LA052-080	DC 24 V	80 W	255 mN·m	3,000 r/min	4.6 A
	DC 75 V	80 W	255 mN·m	3,000 r/min	1.45 A
LA052-110	DC 75 V	110 W	353 mN·m	3,000 r/min	2.1 A

## DIMENSIONS [EXAMPLE]

### LA052



Length: L

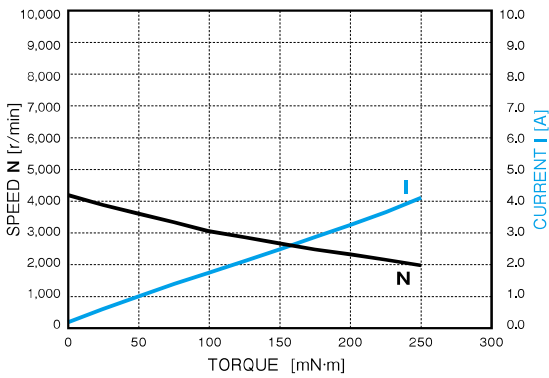
MOTOR TYPE	STANDARD MODEL
LA052-040	69.6mm
LA052-080	69.6mm
LA052-110	89.6mm

## TORQUE RANGE

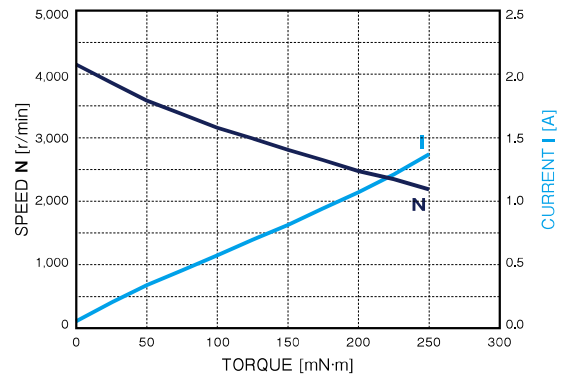
SERIES	MAJOR SIZE	MODEL	RATED SPEED	TORQUE [mN·m]											
				0	50	100	200	300	400	600	800	1,000	1,500		
Inner rotor	□54mm	LA052-040	3,000	[Torque range bars for LA052-040]											
		LA052-080	3,000	[Torque range bars for LA052-080]											
		LA052-110	3,000	[Torque range bars for LA052-110]											

## TORQUE-CURRENT-SPEED CURVE

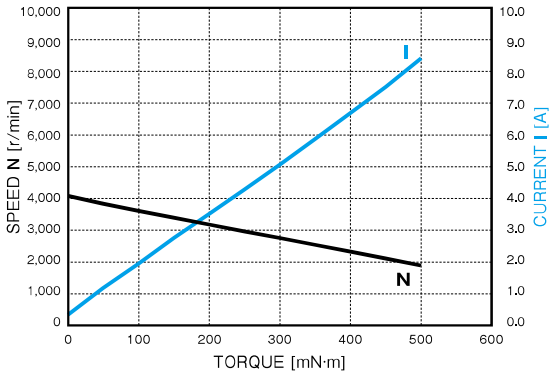
LA052-040 (40W, 24V)



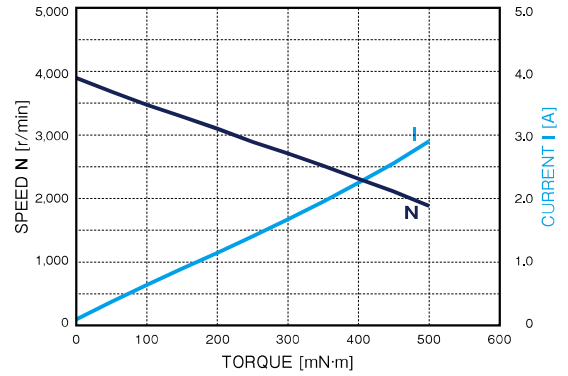
LA-052-040 (40W, 75V)



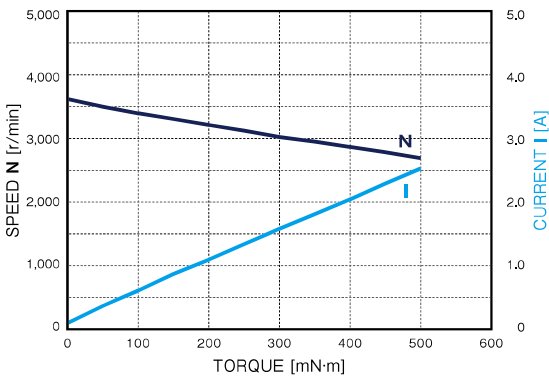
LA052-080 (80W, 24V)



LA-052-080 (80W, 75V)



LA-052-110 (110W, 75V)



**i** Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.

Stepping Motor  
BLDC Motor  
Motor Driver  
Other Motor

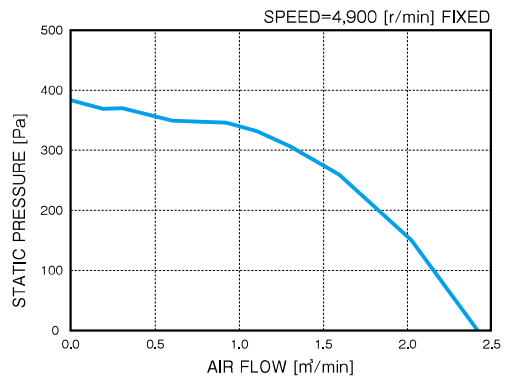
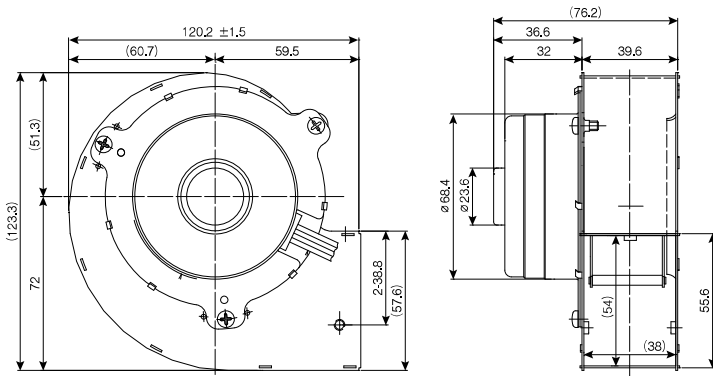
# Brushless DC Blower Series



## [INNER ROTOR]

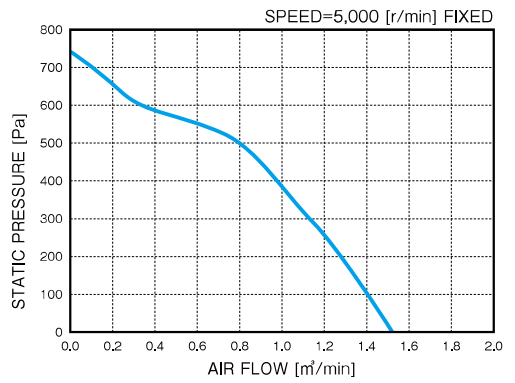
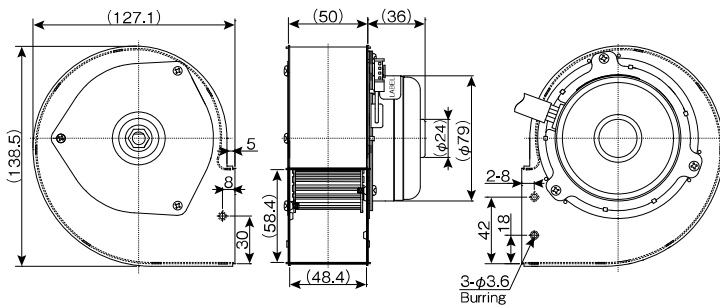
### DRF-6638

RATED VOLTAGE	MAX AIR FLOW	MAX PRESSURE	MAX CURRENT	FAN
DC 24~48 V	2.4 m <sup>3</sup> /min	380 Pa	1.1 A	Turbo Fan



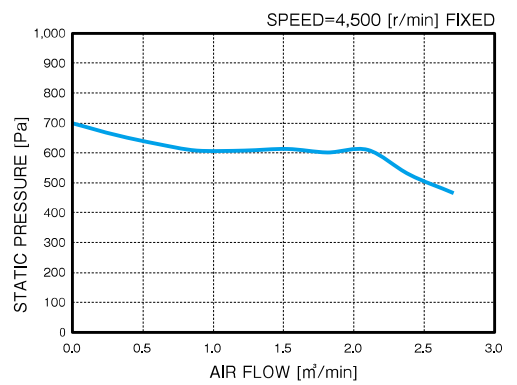
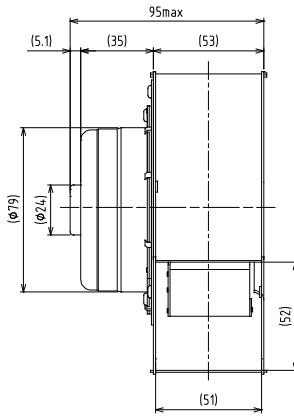
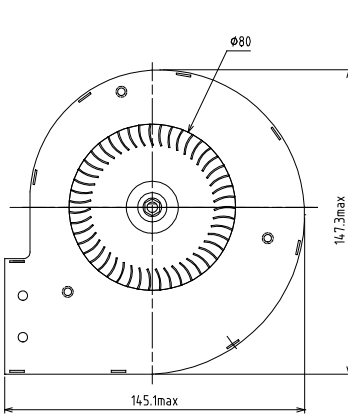
### DRF-738

RATED VOLTAGE	MAX AIR FLOW	MAX PRESSURE	MAX CURRENT	FAN
DC 30 V	1.5 m <sup>3</sup> /min	750 Pa	1.4 A	Sirocco Fan



■ DRF-7738

RATED VOLTAGE	MAX AIR FLOW	MAX PRESSURE	MAX CURRENT	FAN
DC 45 V	2.8 m <sup>3</sup> /min	700 Pa	1.8 A	Sirocco Fan



Stepping Motor

BLDC Motor

Motor Driver

Other Motor



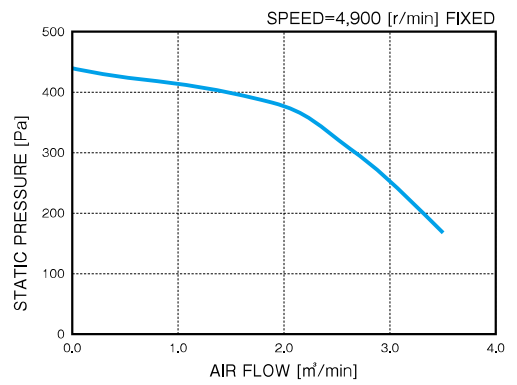
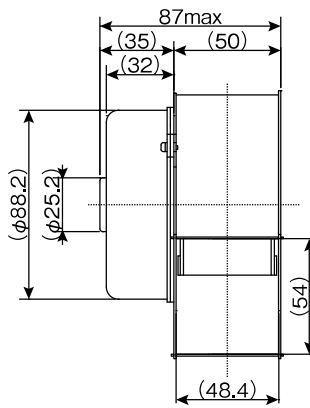
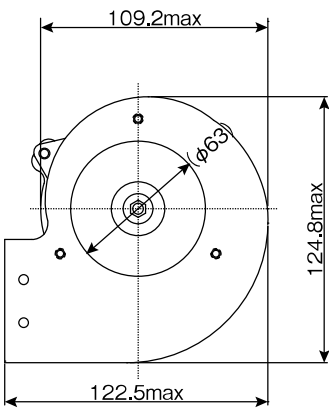
Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.

# Brushless DC Blower Series



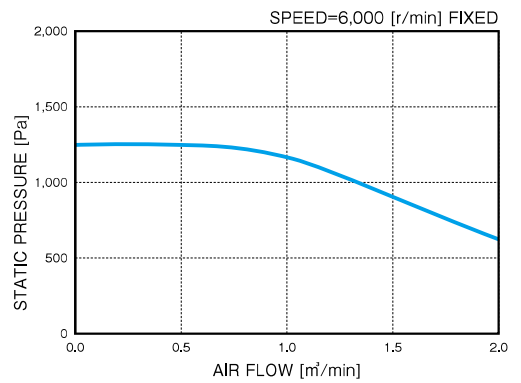
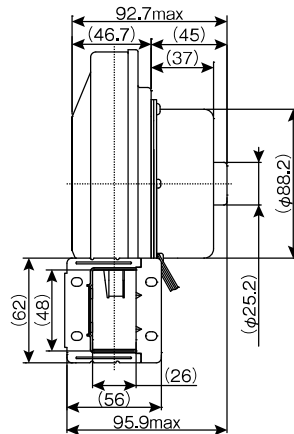
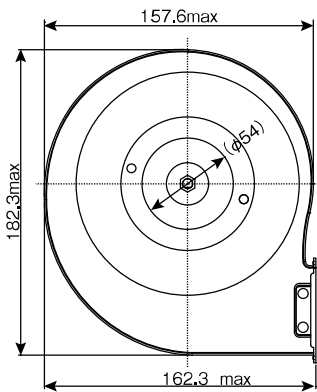
## DRF-8538 A type

RATED VOLTAGE	MAX AIR FLOW	MAX PRESSURE	MAX CURRENT	FAN
DC 120 V	3.5 m <sup>3</sup> /min	440 Pa	1.3 A	Sirocco Fan



## DRF-8538 B type

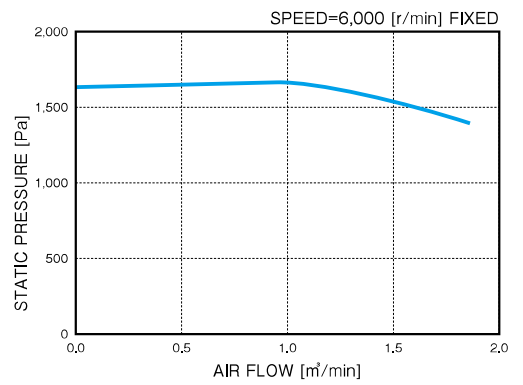
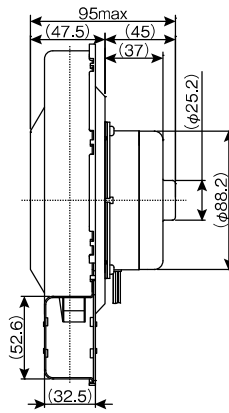
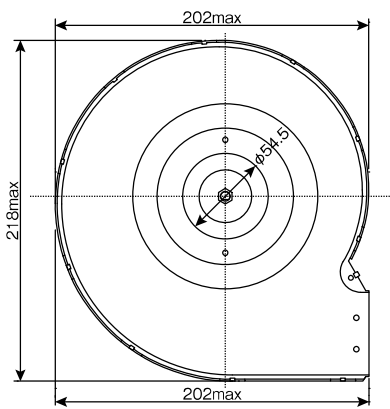
RATED VOLTAGE	MAX AIR FLOW	MAX PRESSURE	MAX CURRENT	FAN
DC 120 V	2.0 m <sup>3</sup> /min	1,300 Pa	1.2 A	Turbo Fan





■ DRF-8538 C type

RATED VOLTAGE	MAX AIR FLOW	MAX PRESSURE	MAX CURRENT	FAN
DC 120 V	1.7 m <sup>3</sup> /min	1,650 Pa	1.8 A	Turbo Fan



Stepping Motor

BLDC Motor

Motor Driver

Other Motor



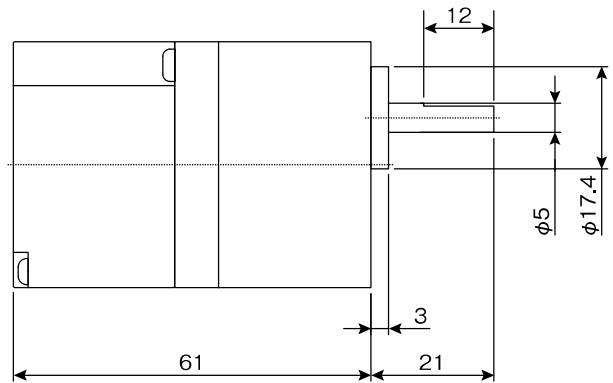
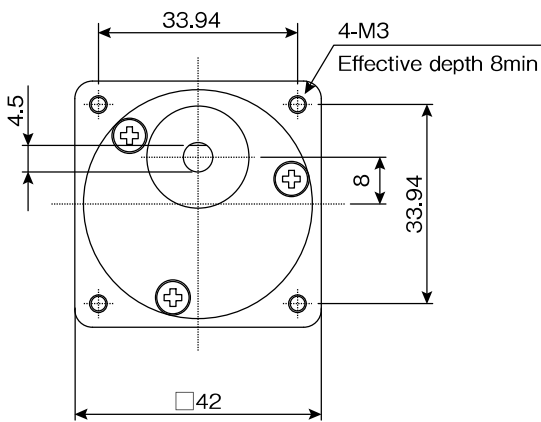
Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.

# Brushless DC Geared Motor



## BRUSHLESS DC WITH □ 42mm GEAR BOX

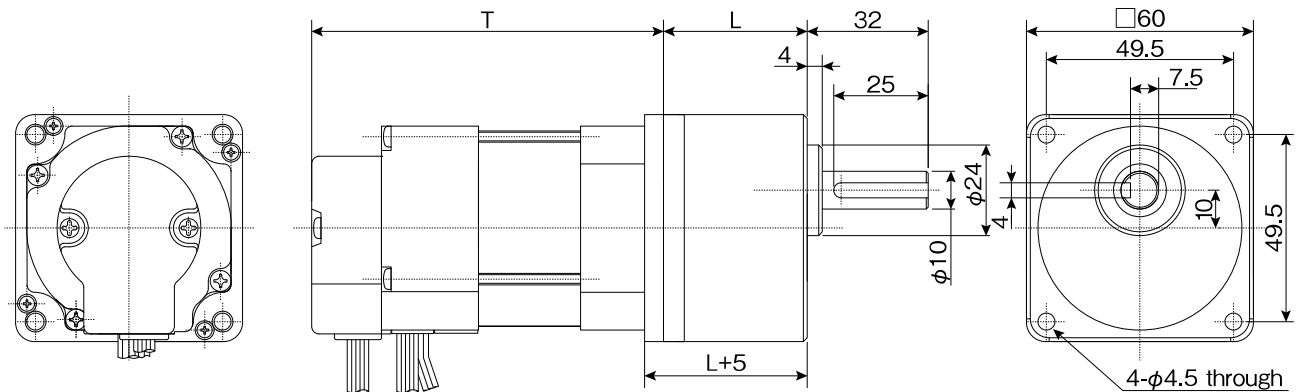
MODEL	SIZE	VOLTAGE	GEAR RATIO	SPEED	PERMISSIBLE TORQUE	PERMISSIBLE OVERHANG LOAD	PERMISSIBLE THRUST LOAD
DRG-38312	□42	DC 24 V	1/12	240 rpm	0,45 N·m	(15mm from mounting surface) 49 N	14.7 N
	□42	DC 24 V	1/50	21 rpm	1 N·m	(15mm from mounting surface) 49 N	14.7 N



## BRUSHLESS DC WITH □ 60mm GEAR BOX

MODEL	SIZE	VOLTAGE	GEAR RATIO	SPEED	PERMISSIBLE TORQUE	PERMISSIBLE OVERHANG LOAD	PERMISSIBLE THRUST LOAD
LA052-040E-xxx	□60	DC 24 V	1/20	150 rpm	2,2 N·m	(22mm from mounting surface) 150 N	39.2 N
	□60	DC 24 V	1/50	60 rpm	4,6 N·m	(22mm from mounting surface) 200 N	39.2 N
	□60	DC 24 V	1/100	30 rpm	4,1 N·m	(22mm from mounting surface) 200 N	39.2 N
	□60	DC 24 V	1/200	15 rpm	4,1 N·m	(22mm from mounting surface) 200 N	39.2 N

T= 93.1 ~ 113.1mm  
 L= 1/5, 1/10, 1/15, 1/20 ⇒ 34mm  
 1/30, 1/50, 1/100 ⇒ 38mm  
 1/200 ⇒ 43mm



Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.

Stepping Motor

BLDC Motor

Motor Driver

Other Motor

# 2 Phase Hybrid Stepping Motor Driver

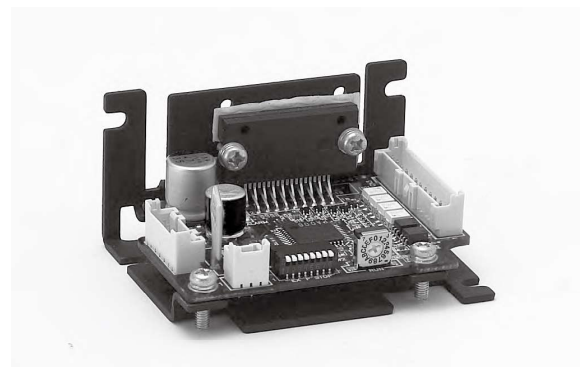
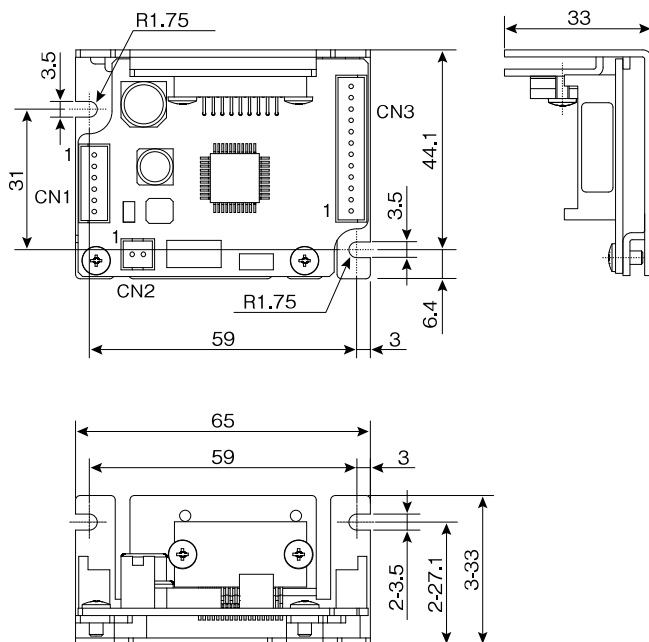


## CHARACTERISTICS

MODEL NAME		UNIPOLAR
		SDU22C701
Specification items		
Power	Input voltage	DC 24 V
	Current consumption	3 A
Driving method		Unipolar chopper drive
Function switch	Pulse input mode	1 pulse input mode / 2 pulse input mode
	Running current	0 - 2.73A (16 steps)
	Holding current	0 - 2.09A (10 steps)
	Step division	Full, Half, 1/4, 1/8, 1/16
Input		<ul style="list-style-type: none"> <li>• CW/CCW signal (Pulse and direction signal)</li> <li>• Current Enable / Disable</li> <li>• Step division Enable / Disable</li> <li>• Auto power down Enable / Disable * Photocoupler insulation</li> </ul>
Output		Excitation timing signal
Indicator	LED	Power X1 StatusX1
Protective functions		Excessive current protection & Excessive temperature protection
Operating condition	Ambient temperature	0-45 deg. C
	Ambient humidity	85% or less (No condensing and no freezing)

## DIMENSIONS

### ■ SDU22C701

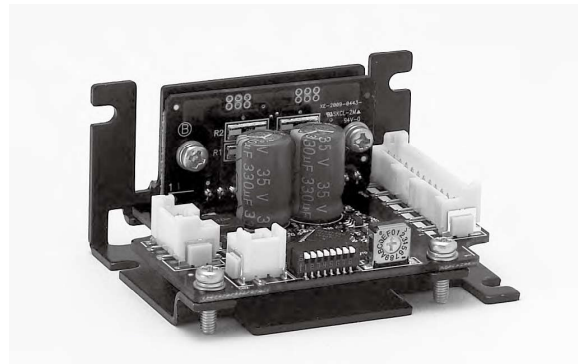
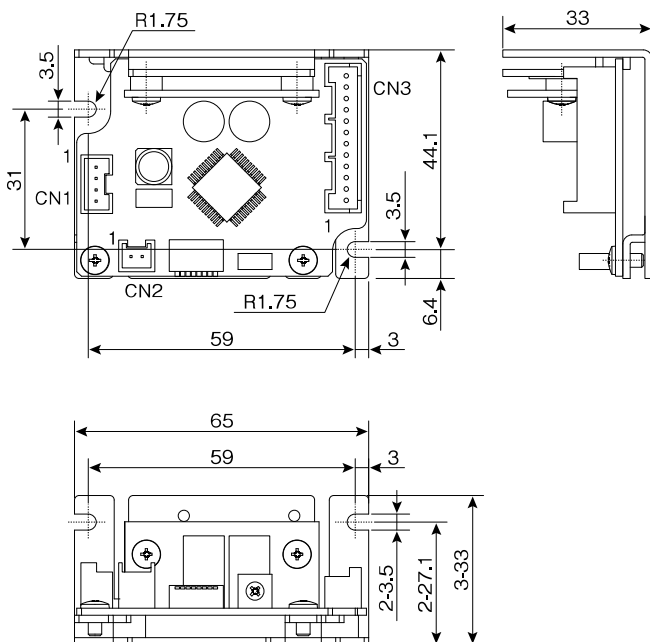


## CHARACTERISTICS

MODEL NAME		BIPOLAR
		SDB21C702
<b>Specification items</b>		
Power	Input voltage	DC 24 V
	Current consumption	1.5 A
Driving method		Bipolar chopper drive
Function switch	Pulse input mode	1 pulse input mode / 2 pulse input mode
	Running current	0 - 1.5A (16 steps)
	Holding current	0 - 1.5A (16 steps)
	Step division	Full, Half, 1/4, 1/8, 1/16
Input		<ul style="list-style-type: none"> <li>• CW/CCW signal (Pulse and direction signal)</li> <li>• Current Enable / Disable</li> <li>• Step division Enable / Disable</li> <li>• Auto power down Enable / Disable * Photocoupler insulation</li> </ul>
Output		Excitation timing signal
Indicator	LED	Power X1 StatusX1
Protective functions		Excessive current protection & Excessive temperature protection
Operating condition	Ambient temperature	0-45 deg. C
	Ambient humidity	85% or less (No condensing and no freezing)

## DIMENSIONS

### ■ SDB21C702



# Servo Motor & Driver



## ■ Servo Motor: LA052 (Encoder model)

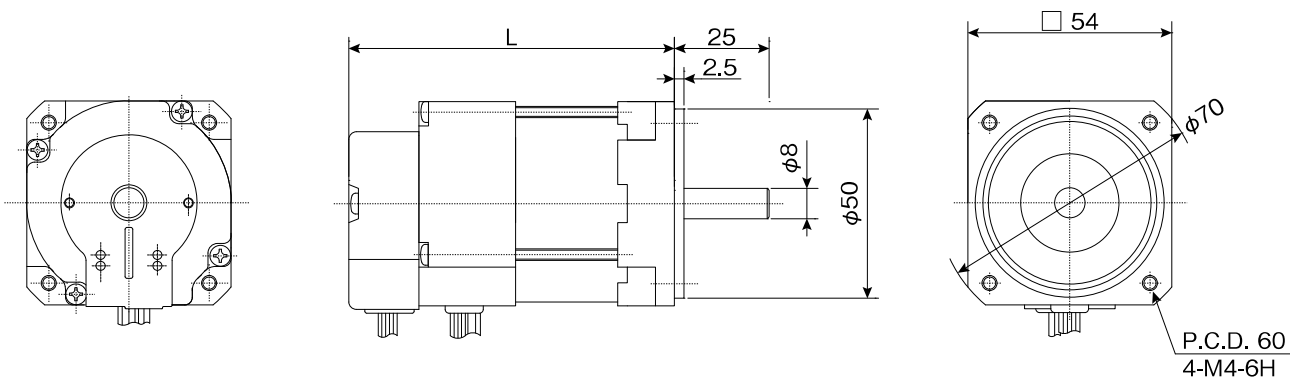
### CHARACTERISTICS

MODEL NAME	RATED OUTPUT		RATED SPEED r/min	RATED TORQUE N·m	RATED CURRENT A	TORQUE CONSTANT N·m/A	BACK EMF CONSTANT V·s/rad	PHASE RESISTANCE Ω	PHASE INDUCTANCE mH	INSTANTANEOUS PEAK TORQUE N·m	MAX. SPEED r/min	ROTOR INERTIA g·cm <sup>2</sup>	POWER RATE kW/s	MECHANICAL TIME CONSTANT ms	ELECTRICAL TIME CONSTANT ms	MASS kg
	W	V-DC														
LA052-040E	40	24	3,000	0.127	2.5	0.05	$5.0 \times 10^{-2}$	1.18	4.4	0.382	5,000	110	1.48	5.2	3.7	0.6
		75		0.127	0.9	0.148	$14.8 \times 10^{-2}$	11.0	42	0.382	5,000	110	1.48	5.5	3.8	0.6
LA052-080E	80	24	3,000	0.255	4.6	0.059	$5.9 \times 10^{-2}$	0.60	1.4	0.765	5,000	117	5.56	2.0	2.3	0.6
		75		0.255	1.8	0.191	$19.1 \times 10^{-2}$	6.2	14	0.765	5,000	117	5.56	2.0	2.3	0.6
LA052-110E	110	75	3,000	0.353	2.1	0.196	$19.6 \times 10^{-2}$	3.71	9.1	1.059	5,000	185	6.74	1.8	2.5	0.8

TYPE	OUTPUT CIRCUIT	RESOLUTION	NUMBER OF CHANNELS	POWER SUPPLY	CONSUMPTION CURRENT	OUTPUT VOLTAGE	PHASE OFFSET	FREQUENCY RESPONSE	OPERATING TEMP. RANGE
		P/R		V-DC	mA	V-DC		kHz	
HALL SENSOR	OPEN COLLECTOR	—	C1, C2, C3	5±5%	40 max.	14.4 min. (I sink=15mA max.)	—	—	0°C~60°C (TEMPERATURE INSIDE OF ENCODER)
ENCODER	TTL COMPATIBLE	200, 400	A, B	5±10%	50 max.	V <sub>OH</sub> =2.4 min. V <sub>OL</sub> =0.4 max. (I sink=3.2mA)	a, b, c, d = 90°±45°	20 min.	

\*The values above are measured with aluminum mounting plate of 200×200×6mm

### DIMENSIONS



Length: L

MOTOR TYPE	ENCODER MODEL
LA052-040E	86.1mm
LA052-080E	86.1mm
LA052-110E	106.1mm



Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.



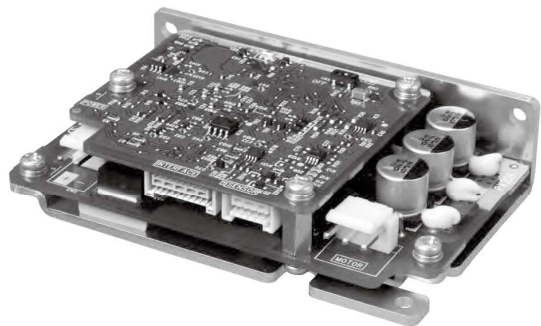
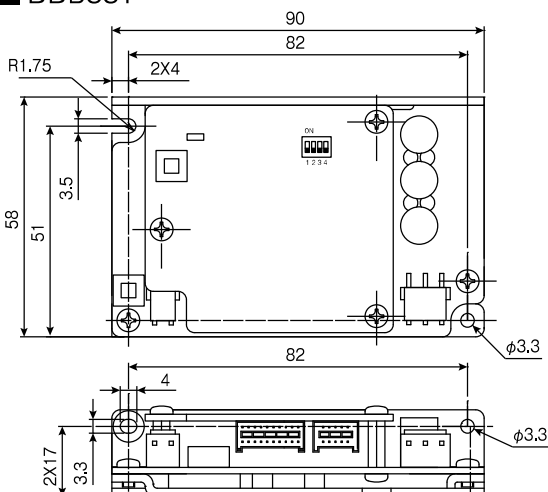
## CHARACTERISTICS

MODEL NAME		DDB33T Series		
Specification items				
Control Mode		Torque Control	Speed Control	Position Control
Rating	Input Voltage	DC 24 V		
	Input Current	3.3 A		
Control Signal		<ul style="list-style-type: none"> <li>Analog Input (0-100%)</li> <li>Command RS-485</li> </ul>	<ul style="list-style-type: none"> <li>Analog Input (0-100%)</li> <li>Command RS-485</li> </ul>	<ul style="list-style-type: none"> <li>Reference pulse input</li> <li>2 pulse input mode</li> <li>1 pulse input mode</li> <li>90 deg phase difference mode</li> <li>Command RS-485</li> </ul>
Parameter		<ul style="list-style-type: none"> <li>Electrical gear</li> <li>Gain</li> <li>Error setting</li> <li>Speed, Position and others</li> <li>Basic settings for position control</li> </ul>		
Input	Multi purpose 2 Channels	Signals are selectable <ul style="list-style-type: none"> <li>Pulse (CW/PLS)/(CCW/DIR)</li> <li>Start / Stop</li> <li>Position clear</li> <li>Others</li> </ul>		
	Digital 2 Channels	<ul style="list-style-type: none"> <li>Alarm reset</li> <li>Servo On/ Off</li> </ul>		
	Analog 1 channel DC 0-5 V	Signals are selectable <ul style="list-style-type: none"> <li>Others</li> <li>Speed level</li> <li>Current level</li> </ul>		
Output	Multi purpose 2 Channels	Signals are selectable <ul style="list-style-type: none"> <li>Servo On/ Off</li> <li>Status</li> <li>Others</li> <li>Errors</li> <li>Ready/busy</li> </ul>		
	Analog 1 channel DC 0-5 V	Signals are selectable <ul style="list-style-type: none"> <li>Motor Torque</li> <li>Motor Speed</li> <li>Others</li> </ul>		
Protective Function		<ul style="list-style-type: none"> <li>Over voltage</li> <li>Sensor signal error</li> <li>Speed error</li> <li>Under voltage</li> <li>Over current</li> <li>Servo deviation</li> <li>Over heat</li> <li>Initial drive error</li> </ul>		
Operating Condition	Ambient Temperature	0 - 50 deg. C		
	Ambient humidity	85% or less (No condensing and no freezing)		

Characteristics are reference only. Feel free to contact sale office or sales agent for detailed information.

## DIMENSIONS

### DDB33T



# Brushless DC Motor Driver



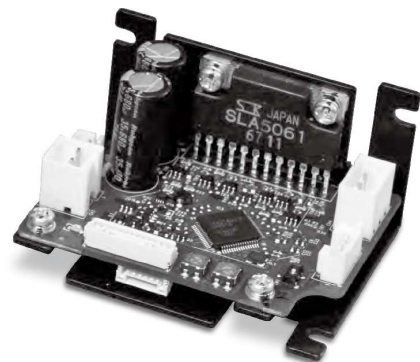
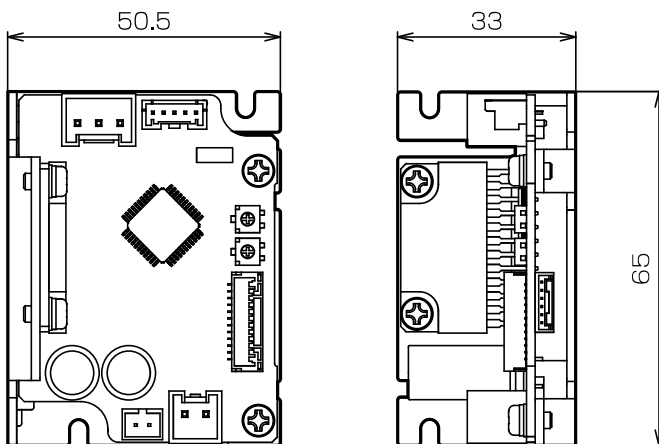
## CHARACTERISTICS

MODEL NAME		DDB32T Series			
Control Mode		Simple Torque Control		Speed Control	
Rating	Input Voltage	DC 24 V			
	Input Current	2.2 A			
Input	Digital 5 Channels	• Servo On/ Off	• Alarm reset	• Brake	• CW    • CCW
	Analog 1 channel DC 0-5 V	Signals are selectable			
Output	Digital 3 Channels	• Current level	• Speed level	• Others	
Indicator	LED	• Errors	• Speed	• Motor Direction	
Protective Function		• Over voltage	• Over current	• Speed error	
		• Under voltage	• Over heat		
		Blinking cycle indicates type of the protective function.			
Regenerative Resister		External			
Operating Condition	Ambient Temperature	0 - 50deg. C			
	Ambient humidity	85% or less_No condensing and no freezing			

Characteristics are reference only. Feel free to contact sale office or sales agent for detailed information.

## DIMENSIONS

### ■ DDB32T



Stepping Motor

BLDC Motor

Motor Driver

Other Motor

# Micropump



## FEATURES

Self-suction

Long-life

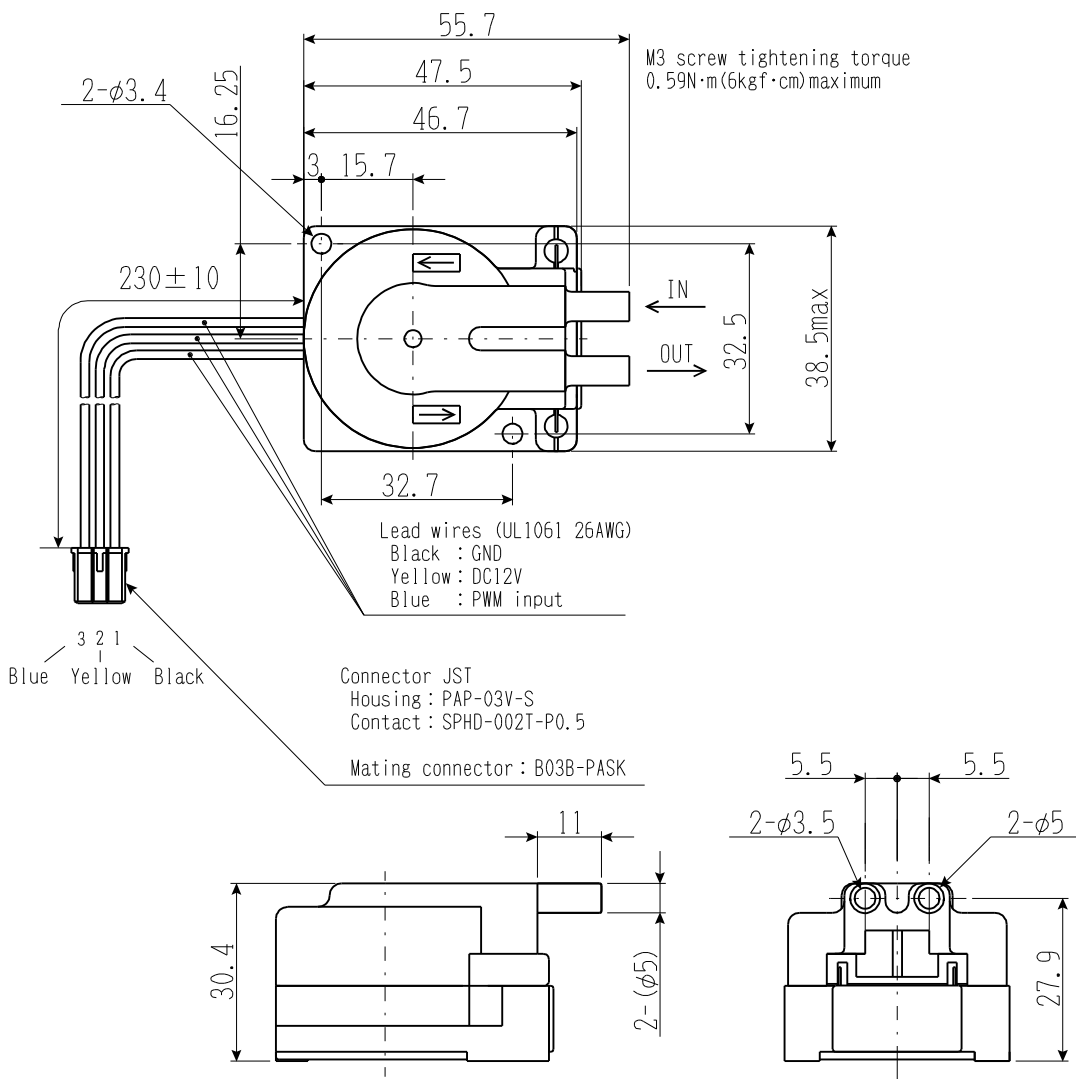
Silent design



## CHARACTERISTICS

MODEL	LIQUID TYPE	VOLTAGE	CURRENT	OPERATING TEMP.	LIQUID TEMP.	MAX FLOW	MAX PRESSURE	MASS
		V	A	Degree	Degree	ml / min	kPa	g
PPLT-01040-002	Water (Tap Water)	DC 12V	0.5	0 to 55	0 to 50	400	11	90
PPLP-03060-001	Antifreeze Solution (Propylene-Glycol)	DC 12V	0.45	0 to 55	0 to 65	530	27	90

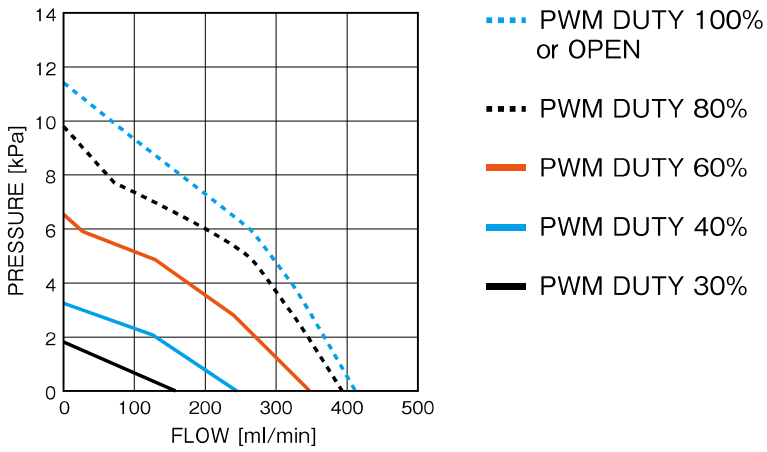
## DIMENSIONS [EXAMPLE]



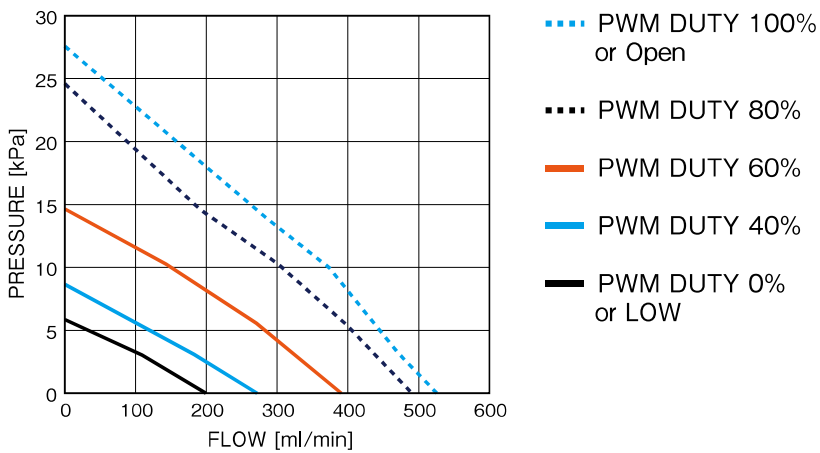


**Performance curve (Reference at DC12V input)**

PPLT-01040-002



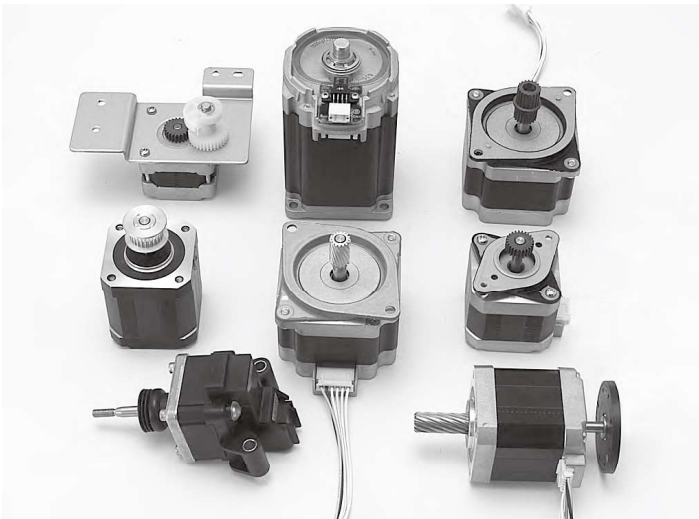
PPLP-03060-001



**i** Characteristics are reference only. Feel free to contact sales office or sales agent for detailed information.

Stepping Motor  
BLDC Motor  
Motor Driver  
Other Motor

# Customization Examples



## Shaft customization

- Helical gear
- Knurl
- Key groove
- Flat / Double flats
- Press fit gear / pulley

## Mounting customization

- Attachment plate
- Unique bracket
- Mount damper
- Extra holes

## Other customization

- Roll damper
- Optical / Magnetic encoder
- Brake

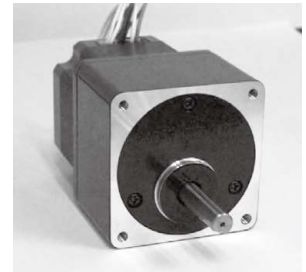
## Driver and Controller Integrated Stepping Motor



## Geared Stepping Motor



□ 42 gear box



□ 60 gear box

## Hollow shaft Stepping Motor



## Blower Assembly





Stepping Motor

BLDC Motor

Motor Driver

Other Motor

## 2 Phase hybrid stepping motor inquiry form

### Your information

Company

Section

Name

Phone

Fax

E-mail

### Your technical requirements

	Specification items	Request
Spec	Base motor (Please circle)	28D / 35D / 36C / 42C / 42D / 43D 45D / 56C / 56D / 59D / 60D / 86D
	Motor length	mm (max)
	Step angle (Full step)	1.8° / STEP                      0.9° / STEP
	Winding type	<input type="checkbox"/> Unipolar <input type="checkbox"/> Bipolar
	Driver type	Chopper (Constant current drive)                      Constant voltage drive
	Input voltage	DC                      V
	Rated current	A
	Pulse rate	pps
	Holding torque	mN·m
	Pull out torque	mN·m
	Excitation mode	Full step / Half step / Micro step (                      division)
	Others	----- -----
	Condition	Operating temperature
Operating humidity		~                      %RH
Special note		----- -----

### Drawings and sketch

# Brushless DC motor inquiry form

## Your information

Company

Section

Name

Phone

Fax

E-mail

## Your technical requirements

	Specification items	Request
Spec	Motor size	Outer diameter                      mm                      Length                      mm
	Motor power	Output                      W
	Input voltage	DC                      V AC                      V                      Hz
	Rated current	A
	Rated Speed	r/min
	Load condition	Torque                      mN·m                      (Motor)
		Air Flow                      M <sup>3</sup> /min                      · Pressure                      Pa                      (Blower Motor)
	Gear ratio (if available)	
	Shaft diameter	mm
	Shaft shape	Flat / Round / Others (                      )
	Mounting orientation	Shaft horizontal / Shaft vertical / Other
	Drive circuit	Integrated / External / Not necessary
	Control circuit	Integrated / External / Not necessary
	Life	H
	Noise level	dB
	Rotative direction	CW / CCW / 2way
	Protection and safety	Yes / No
		If Yes: Oil / Water / Vibration / Others (                      )
Others	----- ----- -----	
Condition	Operating temperature	to                      deg.C
	Operating humidity	to                      %RH
	Special note	----- -----

## Drawings and sketch

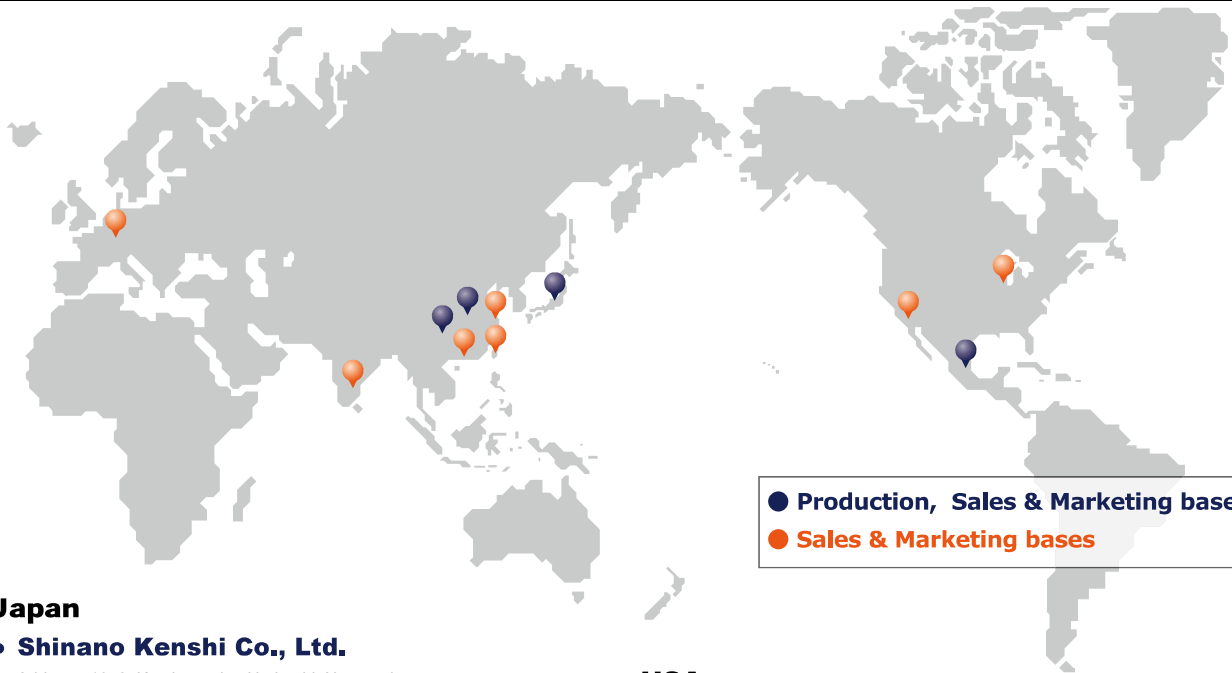
Stepping Motor

BLDC Motor

Motor Driver

Other Motor

# ASPINA Business Locations



● Production, Sales & Marketing bases  
● Sales & Marketing bases

## Japan

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- **Medical Engineering Business Unit**

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Approximately 40 minutes drive from KCR Lo Wu station.

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Phone: (+52)1-462-693-7154



# MEMO





# ASPINA

Engineered to Inspire

Model number, specification and the other description in this catalog are subject to change for motor improvement without any announcement in advance.  
Please contact above in that case.