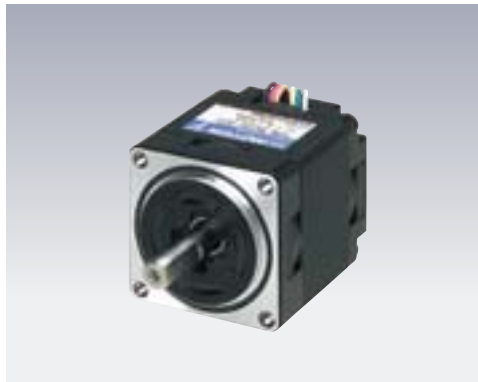




2-phase stepping motor

28mmsq. (1.10inch sq.)

SH228 □

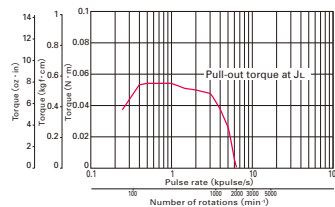
1.8° /step

Unipolar winding • Lead wire type

Model		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Double shafts	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10 ⁻⁴ kg · m ² (oz · in ²)]	[kg (lbs.)]
SH2281-5171	-5131	0.055 (7.79)	0.5	10.5	3.7	0.01 (0.05)	0.11 (0.24)
SH2281-5271	-5231	0.055 (7.79)	1	2.85	1	0.01 (0.05)	0.11 (0.24)
SH2285-5171	-5131	0.115 (16.28)	0.5	16.5	7.1	0.022 (0.12)	0.2 (0.44)
SH2285-5271	-5231	0.115 (16.28)	1	4.1	1.9	0.022 (0.12)	0.2 (0.44)

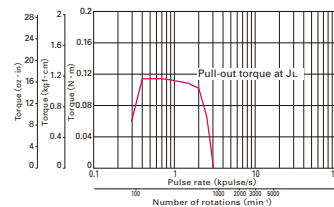
Pulse rate-torque characteristics

● SH2281-51 □ □



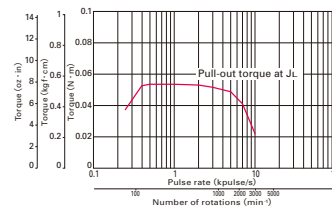
Constant current circuit
Source voltage : DC24V · Operating current : 0.5A/phase,
2-phase energization (full-step)
 $J_L = [0.01 \times 10^{-4} \text{ kg} \cdot \text{m}^2 (1.80 \text{ oz} \cdot \text{in}^2) \text{ pulley balancer method}]$

● SH2285-51 □ □



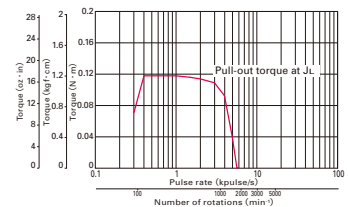
Constant current circuit
Source voltage : DC24V · Operating current : 0.5A/phase,
2-phase energization (full-step)
 $J_L = [0.01 \times 10^{-4} \text{ kg} \cdot \text{m}^2 (1.80 \text{ oz} \cdot \text{in}^2) \text{ pulley balancer method}]$

● SH2281-52 □ □



Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_L = [0.01 \times 10^{-4} \text{ kg} \cdot \text{m}^2 (1.80 \text{ oz} \cdot \text{in}^2) \text{ pulley balancer method}]$

● SH2285-52 □ □



Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_L = [0.01 \times 10^{-4} \text{ kg} \cdot \text{m}^2 (1.80 \text{ oz} \cdot \text{in}^2) \text{ pulley balancer method}]$

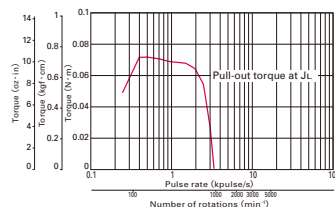
The data are measured under the drive condition of our company. The drive torque may very depending on the accuracy of customer-side equipment.

Bipolar winding • Lead wire type

Model		Holding torque at 2-phase energization	Rated current	Wiring resistance	Winding inductance	Rotor inertia	Mass (Weight)
Single shaft	Double shafts	[N · m (oz · in) MIN.]	A/phase	Ω /phase	mH/phase	[×10 ⁻⁴ kg · m ² (oz · in ²)]	[kg (lbs.)]
SH2281-5671	-5631	0.07 (9.91)	0.5	10.5	7.2	0.01 (0.05)	0.11 (0.24)
SH2281-5771	-5731	0.07 (9.91)	1	2.6	1.85	0.01 (0.05)	0.11 (0.24)
SH2285-5671	-5631	0.145 (20.53)	0.5	15	13.5	0.022 (0.12)	0.2 (0.44)
SH2285-5771	-5731	0.145 (20.53)	1	3.75	3.4	0.022 (0.12)	0.2 (0.44)

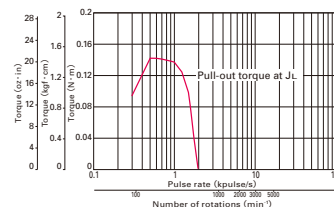
Pulse rate-torque characteristics

● SH2281-56 □ □



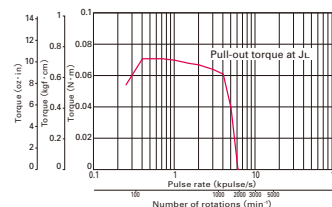
Constant current circuit
Source voltage : DC24V · Operating current : 0.5A/phase,
2-phase energization (full-step)
 $J_L = [0.01 \times 10^{-4} \text{ kg} \cdot \text{m}^2 (1.80 \text{ oz} \cdot \text{in}^2) \text{ pulley balancer method}]$

● SH2285-56 □ □



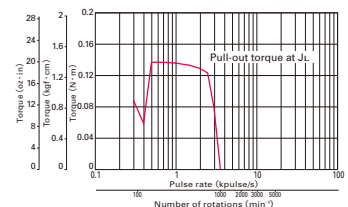
Constant current circuit
Source voltage : DC24V · Operating current : 0.5A/phase,
2-phase energization (full-step)
 $J_L = [0.01 \times 10^{-4} \text{ kg} \cdot \text{m}^2 (1.80 \text{ oz} \cdot \text{in}^2) \text{ pulley balancer method}]$

● SH2281-57 □ □



Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_L = [0.01 \times 10^{-4} \text{ kg} \cdot \text{m}^2 (1.80 \text{ oz} \cdot \text{in}^2) \text{ pulley balancer method}]$

● SH2285-57 □ □

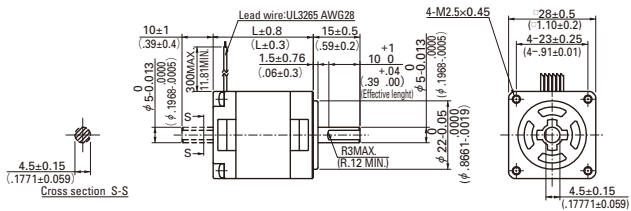


Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_L = [0.01 \times 10^{-4} \text{ kg} \cdot \text{m}^2 (1.80 \text{ oz} \cdot \text{in}^2) \text{ pulley balancer method}]$

The data are measured under the drive condition of our company. The drive torque may very depending on the accuracy of customer-side equipment.

Motors [Unit: mm (inch)]

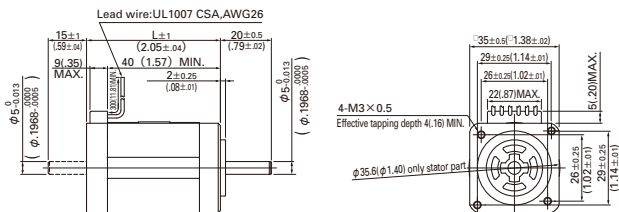
□ **28mm (□ 1.10inch)**



Lead wire type

	Set part number	Motor model number	Motor length : mm (inch)	Cable type
Unipolar	DU14S281 ▽	SH2281-51 ▽ 1	32 (1.26)	Lead wire
	DU14S281 ▽	SH2281-52 ▽ 1	32 (1.26)	Lead wire
	DU14S285 ▽	SH2285-51 ▽ 1	51.5 (2.03)	Lead wire
	DU14S285 ▽	SH2285-52 ▽ 1	51.5 (2.03)	Lead wire
Bipolar	DB14S281 ▽	SH2281-56 ▽ 1	32 (1.26)	Lead wire
	DB14S281 ▽	SH2281-57 ▽ 1	32 (1.26)	Lead wire
	DB14S285 ▽	SH2285-56 ▽ 1	51.5 (2.03)	Lead wire
	DB14S285 ▽	SH2285-57 ▽ 1	51.5 (2.03)	Lead wire

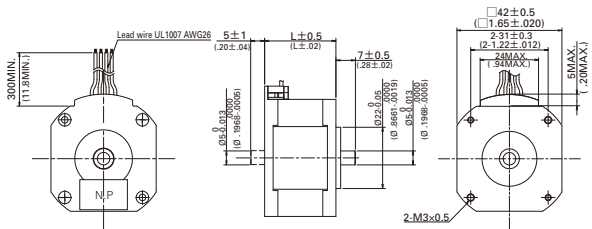
□ **35mm (□ 1.65inch)**



Lead wire type

	Set part number	Motor model number	Motor length : mm (inch)	Cable type
Unipolar	—	SH3533-12U $\triangle$ 0	33 (1.25)	Lead wire
	—	SH3537-12U $\triangle$ 0	37 (1.54)	Lead wire
	—	SH3552-12U $\triangle$ 0	52 (1.89)	Lead wire

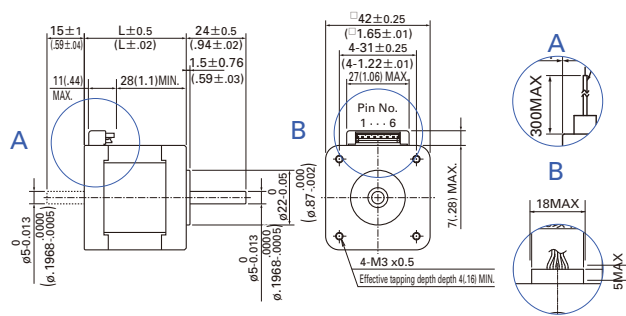
□ 42mm (□ 1.65inch)



Lead wire type

	Set part number	Motor model number	Motor length : mm (inch)	Cable type
Bipolar	—	SS2421-50 $\triangle 1$	11.6 (.457)	Lead wire
	—	SS2422-50 $\triangle 1$	18.6 (.732)	Lead wire
	—	SS2423-50 $\triangle 1$	25.6 (1.008)	Lead wire

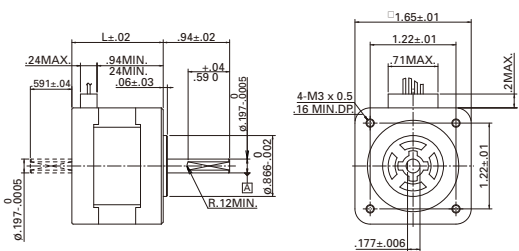
□ 42mm (□ 1.65inch)



Lead wire type

	Set part number	Motor model number	Motor length : mm (inch)	Cable type
Unipolar	DU15H521 ▽	103H5205-04 △ 0	33 (1.25)	Connector
	DU15H522 ▽	103H5208-04 △ 0	39 (1.54)	Connector
	DU15H524 ▽	103H5210-04 △ 0	48 (1.89)	Connector
	—	103H5209-04 △ 0	41 (1.61)	Connector

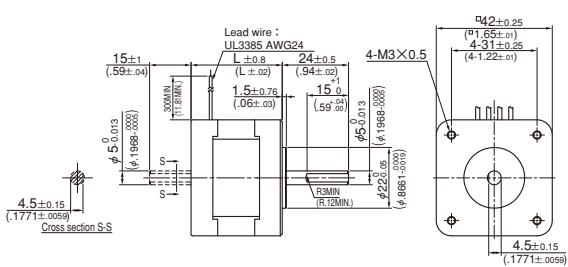
□ 42mm (□ 1.65inch)



Lead wire type

	Set part number	Motor model number	Motor length : mm (inch)	Cable type
Bipolar	DB14H521 ▽	103H5205-52 △ 0	33 (1.25)	Lead wire
	DB14H522 ▽	103H5208-52 △ 0	39 (1.54)	Lead wire
	DB14H524 ▽	103H5210-52 △ 0	48 (1.89)	Lead wire
	—	103H5205-50 △ 0	33 (1.25)	Lead wire
	—	103H5205-51 △ 0	33 (1.25)	Lead wire
	—	103H5208-50 △ 0	39 (1.54)	Lead wire
	—	103H5208-51 △ 0	39 (1.54)	Lead wire
	—	103H5209-50 △ 0	41 (1.61)	Lead wire
	—	103H5209-51 △ 0	41 (1.61)	Lead wire
	—	103H5209-52 △ 0	41 (1.61)	Lead wire
	—	103H5210-50 △ 0	48 (1.89)	Lead wire
	—	103H5210-51 △ 0	48 (1.89)	Lead wire

□ 42mm (□ 1.65inch)



Lead wire type

	Set part number	Motor model number	Motor length : mm (inch)	Cable type
Unipolar	DUI5S141 ▽	SH1421-04 ▽ 1	33 (1.25)	Lead wire
	DUI5S142 ▽	SH1422-04 ▽ 1	39 (1.54)	Lead wire
	DUI5S144 ▽	SH1424-04 ▽ 1	48 (1.89)	Lead wire
Bipolar	DB16H141 ▽	SH1421-52 ▽ 1	33 (1.25)	Lead wire
	DB16H142 ▽	SH1422-52 ▽ 1	39 (1.54)	Lead wire
	DB16H144 ▽	SH1424-52 ▽ 1	48 (1.89)	Lead wire

▽ : Motor shaft specification code

Motor shaft spec	Set type code	Motor type code
Single shaft	S	7
Double shafts	D	3

△: Motor shaft specification code

Motor shaft spec	Set type code	Motor type code
Single shaft	S	4
Double shafts	D	1