

56 mm sq. (2.20 inch sq.)

1.8° /step

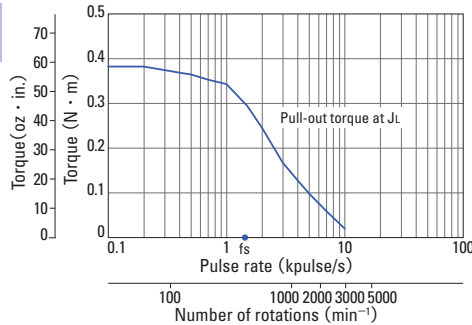
Unipolar winding · Lead wire type
Bipolar winding · Lead wire type ▶ P.40

Unipolar winding · Lead wire type

Model number		Holding torque at 2-phase energization [N · m (oz · in) MIN.]	Rated current A/phase	Wiring resistance Ω /phase	Winding inductance mH/phase	Rotor inertia [×10 ⁻⁴ kg · m ² (oz · in ²)]	Mass (Weight) [kg (lbs)]
Single shaft	Dual shaft						
103H7121-0140	103H7121-0110	0.39 (55.2)	1	4.8	8	0.1 (0.55)	0.47 (1.04)
103H7121-0440	103H7121-0410	0.39 (55.2)	2	1.25	1.9	0.1 (0.55)	0.47 (1.04)
103H7121-0740	103H7121-0710	0.39 (55.2)	3	0.6	0.8	0.1 (0.55)	0.47 (1.04)
103H7123-0140	103H7123-0110	0.83 (117.5)	1	6.7	15	0.21 (1.15)	0.65 (1.43)
103H7123-0440	103H7123-0410	0.83 (117.5)	2	1.6	3.8	0.21 (1.15)	0.65 (1.43)
103H7123-0740	103H7123-0710	0.78 (110.5)	3	0.77	1.58	0.21 (1.15)	0.65 (1.43)
103H7124-0140	103H7124-0110	0.98 (138.8)	1	7	14.5	0.245 (1.34)	0.8 (1.76)
103H7124-0440	103H7124-0410	0.98 (138.8)	2	1.7	3.1	0.245 (1.34)	0.8 (1.76)
103H7124-0740	103H7124-0710	0.98 (138.8)	3	0.74	1.4	0.245 (1.34)	0.8 (1.76)
103H7126-0140	103H7126-0110	1.27 (179.8)	1	8.6	19	0.36 (1.97)	0.98 (2.16)
103H7126-0440	103H7126-0410	1.27 (179.8)	2	2	4.5	0.36 (1.97)	0.98 (2.16)
103H7126-0740	103H7126-0710	1.27 (179.8)	3	0.9	2.2	0.36 (1.97)	0.98 (2.16)

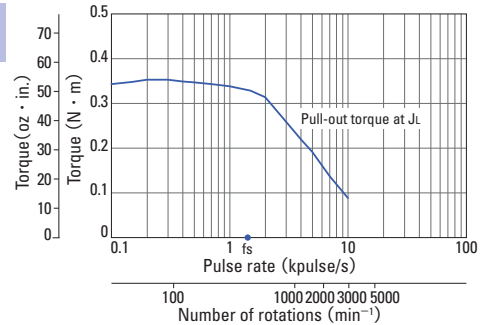
Characteristics diagram

103H7121-0140
103H7121-0110



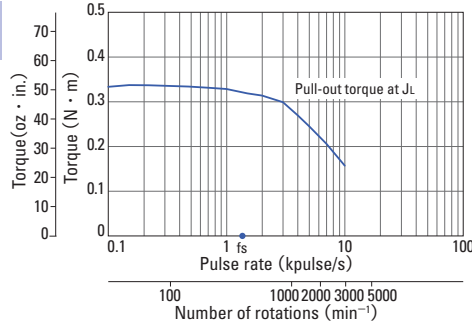
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_1 = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$ use the rubber coupling
fs: Maximum self-start frequency when not loaded

103H7121-0440
103H7121-0410



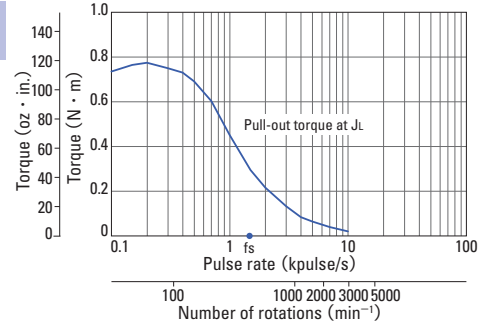
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase,
2-phase energization (full-step)
 $J_1 = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$ use the rubber coupling
fs: Maximum self-start frequency when not loaded

103H7121-0740
103H7121-0710



Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase,
2-phase energization (full-step)
 $J_1 = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$ use the rubber coupling
fs: Maximum self-start frequency when not loaded

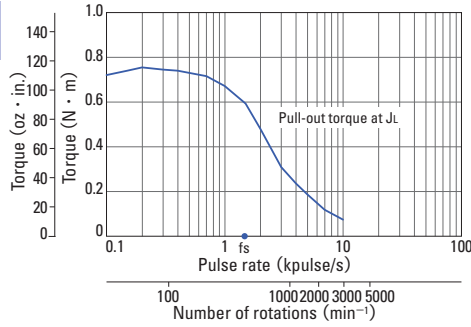
103H7123-0140
103H7123-0110



Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_1 = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$ use the rubber coupling
fs: Maximum self-start frequency when not loaded

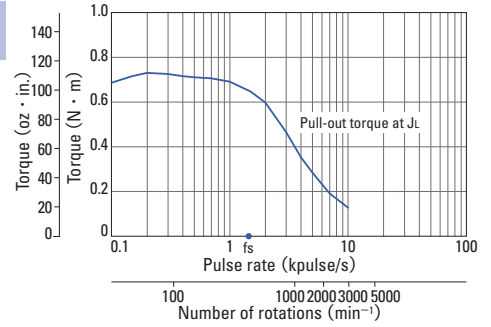
Characteristics diagram

103H7123-0440
103H7123-0410



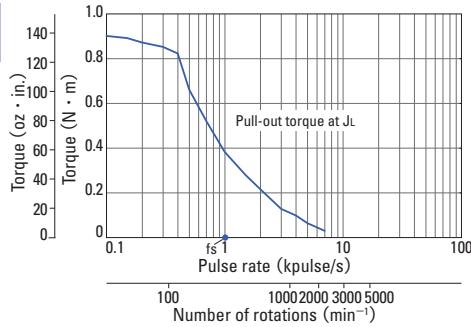
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase,
2-phase energization (full-step)
 $J_L=[0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2) \text{ use the rubber coupling}]$
 f_s : Maximum self-start frequency when not loaded

103H7123-0740
103H7123-0710



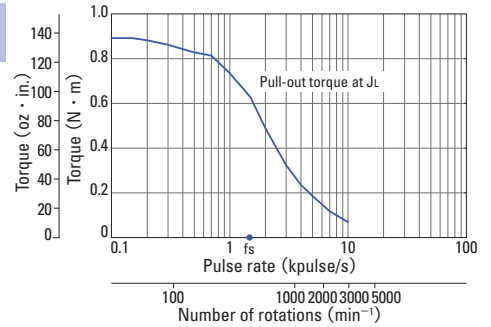
Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase,
2-phase energization (full-step)
 $J_L=[0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2) \text{ use the rubber coupling}]$
 f_s : Maximum self-start frequency when not loaded

103H7124-0140
103H7124-0110



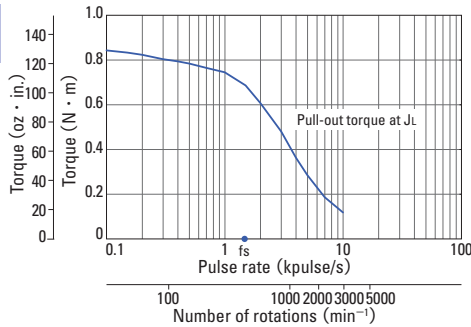
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_L=[2.6 \times 10^{-4} \text{kg} \cdot \text{m}^2 (14.22 \text{oz} \cdot \text{in}^2) \text{ use the rubber coupling}]$
 f_s : Maximum self-start frequency when not loaded

103H7124-0440
103H7124-0410



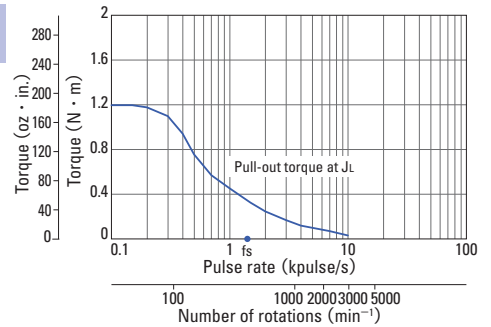
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase,
2-phase energization (full-step)
 $J_L=[2.6 \times 10^{-4} \text{kg} \cdot \text{m}^2 (14.22 \text{oz} \cdot \text{in}^2) \text{ use the rubber coupling}]$
 f_s : Maximum self-start frequency when not loaded

103H7124-0740
103H7124-0710



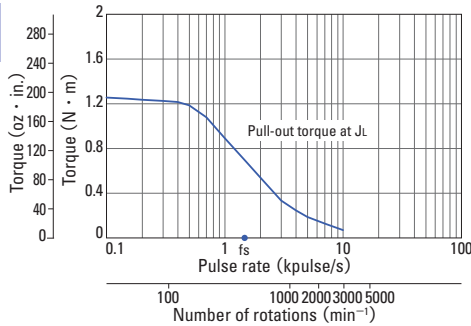
Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase,
2-phase energization (full-step)
 $J_L=[2.6 \times 10^{-4} \text{kg} \cdot \text{m}^2 (14.22 \text{oz} \cdot \text{in}^2) \text{ use the rubber coupling}]$
 f_s : Maximum self-start frequency when not loaded

103H7126-0140
103H7126-0110



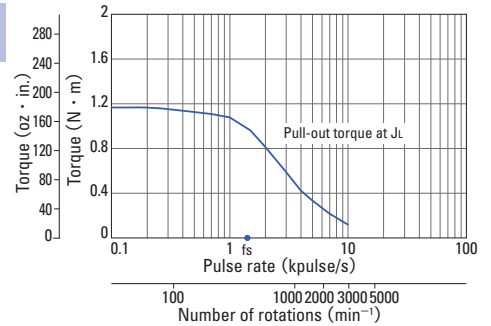
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_L=[2.6 \times 10^{-4} \text{kg} \cdot \text{m}^2 (14.22 \text{oz} \cdot \text{in}^2) \text{ use the rubber coupling}]$
 f_s : Maximum self-start frequency when not loaded

103H7126-0440
103H7126-0410



Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase,
2-phase energization (full-step)
 $J_L=[2.6 \times 10^{-4} \text{kg} \cdot \text{m}^2 (14.22 \text{oz} \cdot \text{in}^2) \text{ use the rubber coupling}]$
 f_s : Maximum self-start frequency when not loaded

103H7126-0740
103H7126-0710



Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase,
2-phase energization (full-step)
 $J_L=[2.6 \times 10^{-4} \text{kg} \cdot \text{m}^2 (14.22 \text{oz} \cdot \text{in}^2) \text{ use the rubber coupling}]$
 f_s : Maximum self-start frequency when not loaded



56 mm sq. (2.20 inch sq.)

1.8° /step

Unipolar winding · Lead wire type ▶ P.38

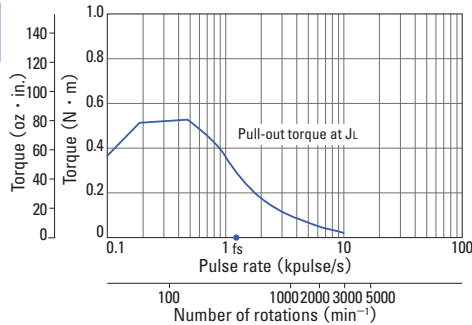
Bipolar winding · Lead wire type

Bipolar winding · Lead wire type

Model number		Holding torque at 2-phase energization [N · m (oz · in) MIN.]	Rated current A/phase	Wiring resistance Ω /phase	Winding inductance mH/phase	Rotor inertia [×10 ⁻⁴ kg · m ² (oz · in ²)]	Mass (Weight) [kg (lbs)]
Single shaft	Dual shaft						
103H7121-5640	103H7121-5610	0.55 (77.9)	1	4.3	14.5	0.1 (0.55)	0.47 (1.04)
103H7121-5740	103H7121-5710	0.55 (77.9)	2	1.1	3.7	0.1 (0.55)	0.47 (1.04)
103H7121-5840	103H7121-5810	0.55 (77.9)	3	0.54	1.74	0.1 (0.55)	0.47 (1.04)
103H7123-5640	103H7123-5610	1.0 (141.6)	1	5.7	29.4	0.21 (1.15)	0.65 (1.43)
103H7123-5740	103H7123-5710	1.0 (141.6)	2	1.5	7.5	0.21 (1.15)	0.65 (1.43)
103H7123-5840	103H7123-5810	1.0 (141.6)	3	0.7	3.5	0.21 (1.15)	0.65 (1.43)
103H7126-5640	103H7126-5610	1.6 (226.6)	1	7.7	34.6	0.36 (1.97)	0.98 (2.16)
103H7126-5740	103H7126-5710	1.6 (226.6)	2	2	9.1	0.36 (1.97)	0.98 (2.16)
103H7126-5840	103H7126-5810	1.6 (226.6)	3	0.94	4	0.36 (1.97)	0.98 (2.16)
103H7128-5640	103H7128-5610	2.0 (283.2)	1	8.9	40.1	0.49 (2.68)	1.3 (2.87)
103H7128-5740	103H7128-5710	2.0 (283.2)	2	2.3	10.4	0.49 (2.68)	1.3 (2.87)
103H7128-5840	103H7128-5810	2.0 (283.2)	3	1.03	4.3	0.49 (2.68)	1.3 (2.87)

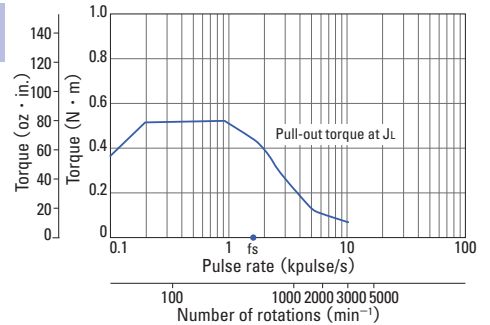
Characteristics diagram

103H7121-5640
103H7121-5610



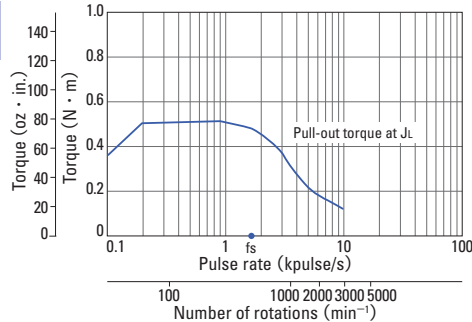
Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_t = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$ use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7121-5740
103H7121-5710



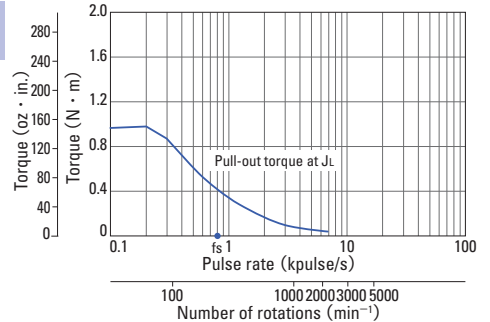
Constant current circuit
Source voltage : DC24V · Operating current : 2A/phase,
2-phase energization (full-step)
 $J_t = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$ use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7121-5840
103H7121-5810



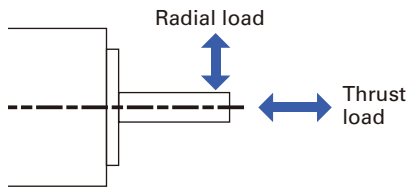
Constant current circuit
Source voltage : DC24V · Operating current : 3A/phase,
2-phase energization (full-step)
 $J_t = [0.94 \times 10^{-4} \text{kg} \cdot \text{m}^2 (5.14 \text{oz} \cdot \text{in}^2)]$ use the rubber coupling]
fs: Maximum self-start frequency when not loaded

103H7123-5640
103H7123-5610



Constant current circuit
Source voltage : DC24V · Operating current : 1A/phase,
2-phase energization (full-step)
 $J_t = [2.6 \times 10^{-4} \text{kg} \cdot \text{m}^2 (14.22 \text{oz} \cdot \text{in}^2)]$ use the rubber coupling]
fs: Maximum self-start frequency when not loaded

Allowable Radial / Thrust Load



Flange size	Model number	Distance from end of shaft : mm (in)				Thrust load N (lbs)
		0	5	10	15	
		Radial load : N (lbs)				
14 mm sq. (0.55 in sq.)	SH2141	10 (2.25)	11 (2.47)	13 (2.92)	-	0.7 (0.16)
28 mm sq. (1.10 in sq.)	SH228 □	42 (9)	48 (10)	56 (12)	66 (14)	3 (0.67)
35 mm sq. (1.38 in sq.)	SH353 □	40 (8)	50 (11)	67 (15)	98 (22)	10 (2.25)
42 mm sq. (1.65 in sq.)	103H52 □□ SH142 □	22 (4)	26 (5)	33 (7)	46 (10)	10 (2.25)
50 mm sq. (1.97 in sq.)	103H670 □	71 (15)	87 (19)	115 (25)	167 (37)	15 (3.37)
56 mm sq. (2.20 in sq.)	103H712 □	52 (11)	65 (14)	85 (19)	123 (27)	15 (3.37)
	103H7128	85 (19)	105 (23)	138 (31)	200 (44)	15 (3.37)
60 mm sq. (2.36 in sq.)	103H782 □	70 (15)	87 (19)	114 (25)	165 (37)	20 (4.50)
	SH160 □					15 (3.37)
86 mm sq. (3.39 in sq.)	SM286 □	167 (37)	193 (43)	229 (51)	280 (62)	60 (13.488)
	SH286 □					
86 mm sq. (3.39 in sq.)	103H822 □	191 (43)	234 (53)	301 (68)	421 (95)	60 (13.488)
φ 106 mm (φ 4.17 in)	103H8922 □	321 (72)	356 (79)	401 (90)	457 (101)	100 (22.48)

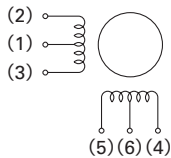
Internal Wiring and Rotation Direction

Unipolar winding

103H52 □□ Connector type

Internal wire connection

() connector pin number



Direction of motor rotation

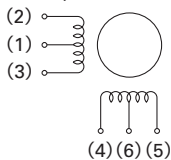
The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

	Connector pin number				
	(1.6)	(5)	(3)	(4)	(2)
Exciting order	1	+	-	-	-
	2	+	-	-	-
	3	+	-	-	-
	4	+	-	-	-

103H782 □□ Connector type

Internal wire connection

() connector pin number



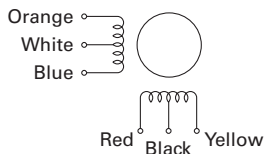
Direction of motor rotation

The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

	Connector pin number				
	(1.6)	(4)	(3)	(5)	(2)
Exciting order	1	+	-	-	-
	2	+	-	-	-
	3	+	-	-	-
	4	+	-	-	-

Lead wire type

Internal wire connection



Direction of motor rotation

The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

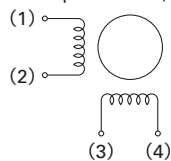
	Lead wire color				
	White & black	Red	Blue	Yellow	Orange
Exciting order	1	+	-	-	-
	2	+	-	-	-
	3	+	-	-	-
	4	+	-	-	-

Bipolar winding

Connector type

Internal wire connection

() connector pin number, terminal block number



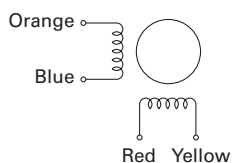
Direction of motor rotation

The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

	Connector pin number, terminal block number			
	(3)	(2)	(4)	(1)
Exciting order	1	-	-	+
	2	+	-	+
	3	+	+	-
	4	-	+	+

Lead wire type

Internal wire connection



Direction of motor rotation

The output shaft shall rotate clockwise as seen from the shaft side, when excited by DC in the following order.

	Lead wire color			
	Red	Blue	Yellow	Orange
Exciting order	1	-	-	+
	2	+	-	+
	3	+	+	-
	4	-	+	+

General Specifications

Motor model number	SH2141	SH228 <input type="checkbox"/>	SH353 <input type="checkbox"/>	SS242 <input type="checkbox"/>	SH142 <input type="checkbox"/>	103H52 <input type="checkbox"/>	SS250 <input type="checkbox"/>	103H67 <input type="checkbox"/>	103H712 <input type="checkbox"/>
Type	-								
Operating ambient temperature	- 10°C to + 50°C								
Conversation temperature	- 20°C to + 65°C								
Operating ambient humidity	20 to 90% RH (no condensation)								
Conversation humidity	5 to 95% RH (no condensation)								
Operation altitude	1000m (3280 feet) MAX above sea level								
Vibration resistance	Vibration frequency 10 to 500 Hz, total amplitude 1.52 mm (10 to 70 Hz), vibration acceleration 147m/s ² (70 to 500 Hz), sweep time 15 min/cycle, 12 sweeps in each X, Y and Z direction.								
Impact resistance	490m/s ² of acceleration for 11 ms with half-sine wave applying three times for X, Y, and Z axes each, 18 times in total.								
Insulation class	Class B (+130°C)								
Withstand voltage	At normal temperature and humidity, no failure with 500 V AC @50/60 Hz applied for one minute between motor winding and frame.						At normal temperature and humidity, no failure with 1000 V AC @50/60 Hz applied for one minute between motor winding and frame.		
Insulation resistance	At normal temperature and humidity, not less than 100MΩ between winding and frame by DC500V megger.								
Protection grade	IP40								
Winding temperature rise	80K MAX. (Based on Sanyo Denki standard)								
Static angle error	± 0.09°				± 0.054°		± 0.09°		
Axial play *1	0.075 mm (0.003 in) MAX. (load: 0.35N (0.08 lbs))	0.075 mm (0.003 in) MAX. (load: 1.5N (0.34 lbs))	0.075 mm (0.003 in) MAX. (load: 5N (1.12 lbs))	0.075 mm (0.003 in) MAX. (load: 4N (0.9 lbs))	0.075 mm (0.003 in) MAX. (load: 5N (1.12 lbs))	0.075 mm (0.003 in) MAX. (load: 5N (1.12 lbs))	0.075 mm (0.003 in) MAX. (load: 4N (0.9 lbs))	0.075 mm (0.003 in) MAX. (load: 10N (2.25 lbs))	0.075 mm (0.003 in) MAX. (load: 10N (2.25 lbs))
Radial play *2	0.025 mm (0.001 in) MAX. (load: 5N (1.12 lbs))								
Shaft runout	0.025 mm (0.001 in)								
Concentricity of mounting pilot relative to shaft	φ 0.05 mm (φ 0.002 in)	φ 0.05 mm (φ 0.002 in)	φ 0.075 mm (φ 0.003 in)	φ 0.075 mm (φ 0.003 in)	φ 0.05 mm (φ 0.002 in)	φ 0.05 mm (φ 0.002 in)	φ 0.075 mm (φ 0.003 in)	φ 0.075 mm (φ 0.003 in)	φ 0.075 mm (φ 0.003 in)
Squareness of mounting surface relative to shaft	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.075 mm (0.003 in)	0.075 mm (0.003 in)

Motor model number	SH160 <input type="checkbox"/>	103H78 <input type="checkbox"/>	SH286 <input type="checkbox"/>	103H8922 <input type="checkbox"/>	SM286 <input type="checkbox"/>	103H712 <input type="checkbox"/> -6 <input type="checkbox"/> 0 <input type="checkbox"/> CE Model	103H822 <input type="checkbox"/> -6 <input type="checkbox"/> 0 <input type="checkbox"/> CE Model	103H8922 <input type="checkbox"/> -63 <input type="checkbox"/> 1 <input type="checkbox"/> CE Model	
Type	-				S1 (continuous operation)				
Operating ambient temperature	- 10°C to + 50°C				- 10°C to + 40°C				
Conversation temperature	- 20°C to + 65°C				- 20°C to + 60°C				
Operating ambient humidity	20 to 90% RH (no condensation)				95%MAX. : 40°C MAX., 57%MAX. : 50°C MAX., 35%MAX. : 60°C MAX. (no condensation)				
Conversation humidity	5 to 95% RH (no condensation)								
Operation altitude	1000m (3280 feet) MAX above sea level								
Vibration resistance	Vibration frequency 10 to 500 Hz, total amplitude 1.52 mm (10 to 70 Hz), vibration acceleration 147m/s ² (70 to 500 Hz), sweep time 15 min/cycle, 12 sweeps in each X, Y and Z direction.								
Impact resistance	490m/s ² of acceleration for 11 ms with half-sine wave applying three times for X, Y and Z axes each, 18 times in total.								
Insulation class	Class B (+130°C)				Class F (+155°C)		Class B (+130°C)		
Withstand voltage	At normal temperature and humidity, no failure with 1000 V AC @50/60 Hz applied for one minute between motor winding and frame.				At normal temperature and humidity, no failure with 1500 V AC @50/60 Hz applied for one minute between motor winding and frame.				
Insulation resistance	At normal temperature and humidity, not less than 100MΩ between winding and frame by DC500V megger.								
Protection grade	IP40				IP43				
Winding temperature rise	80K MAX. (Based on Sanyo Denki standard)								
Static angle error	± 0.054°		± 0.09°						
Axial play *1	0.075 mm (0.003 in) MAX. (load: 10N (2.25 lbs))								
Radial play *2	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 10N (2.25 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 5N (1.12 lbs))	0.025 mm (0.001 in) (load: 10N (2.25 lbs))
Shaft runout	0.025 mm (0.001 in)								
Concentricity of mounting pilot relative to shaft	φ 0.075 mm (φ 0.003 in)								
Squareness of mounting surface relative to shaft	0.1 mm (0.004 in)	0.075 mm (0.003 in)	0.15 mm (0.006 in)	0.1 mm (0.004 in)	0.15 mm (0.006 in)	0.075 mm (0.003 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)	0.1 mm (0.004 in)

*1 Axial play: Shaft displacement under axial load.
 *2 Radial play: Shaft displacement under radial load applied 1/3rd of the length from the end of the shaft.

Safety standards

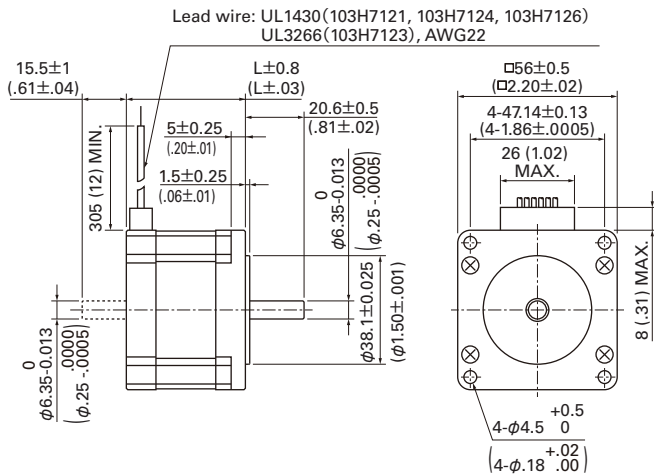
Model Number: **SM286** **CE** • **UL** marked models

CE (TÜV)	Standard category	Standard part	
	Low-voltage directives	EN60034-1, EN60034-5	
UL	Acquired standards	Standard part	File No.
	UL for Canada	UL1004-1	E179832

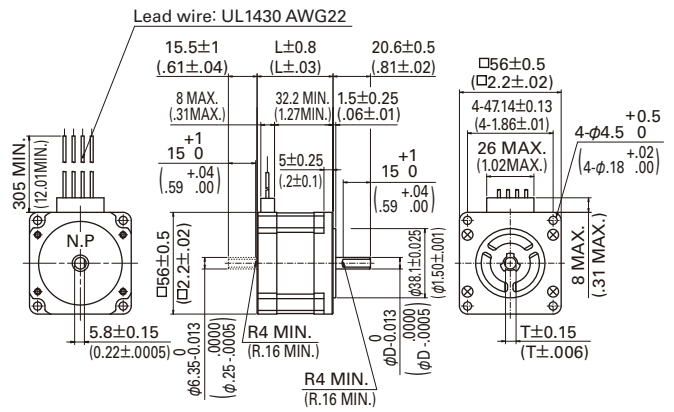
Model Number: **103H712** -6 0 **CE** marked model

CE (TÜV)	Standard category	Standard part
	Low-voltage directives	EN60034-1, EN60034-5

56 mm sq. (2.20 inch sq.)



56 mm sq. (2.20 inch sq.)



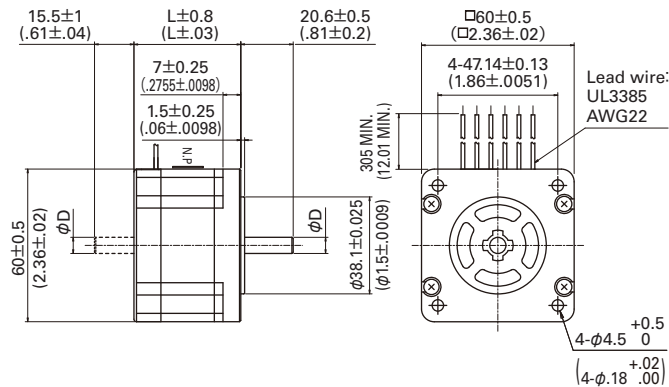
Unipolar

Set model number		Motor model number		Motor length (L)
Single shaft	Dual shaft	Single shaft	Dual shaft	
-	-	103H7121-0140	103H7121-0110	41.8 (1.65)
DU16H711S	DU16H711D	103H7121-0440	103H7121-0410	41.8 (1.65)
-	-	103H7121-0740	103H7121-0710	41.8 (1.65)
DU16H713S	DU16H713D	103H7123-0440	103H7123-0410	53.8 (2.12)
-	-	103H7123-0740	103H7123-0710	53.8 (2.12)
-	-	103H7124-0140	103H7124-0110	63.8 (2.51)
-	-	103H7124-0440	103H7124-0410	63.8 (2.51)
-	-	103H7124-0740	103H7124-0710	63.8 (2.51)
-	-	103H7126-0140	103H7126-0110	75.8 (2.98)
DU16H716S	DU16H716D	103H7126-0440	103H7126-0410	75.8 (2.98)
-	-	103H7126-0740	103H7126-0710	75.8 (2.98)

Bipolar

Set model number		Motor model number		Motor length (L)	Shaft diameter (D)	Dcut thickness (T)
Single shaft	Dual shaft	Single shaft	Dual shaft			
-	-	103H7121-5640	103H7121-5610	41.8 (1.65)	φ 6.35 (φ 0.25)	5.8 (0.23)
DB16H711S	DB16H711D	103H7121-5740	103H7121-5710	41.8 (1.65)	φ 6.35 (φ 0.25)	5.8 (0.23)
-	-	103H7121-5840	103H7121-5810	41.8 (1.65)	φ 6.35 (φ 0.25)	5.8 (0.23)
-	-	103H7123-5640	103H7123-5610	53.8 (2.12)	φ 6.35 (φ 0.25)	5.8 (0.23)
DB16H713S	DB16H713D	103H7123-5740	103H7123-5710	53.8 (2.12)	φ 6.35 (φ 0.25)	5.8 (0.23)
-	-	103H7123-5840	103H7123-5810	53.8 (2.12)	φ 6.35 (φ 0.25)	5.8 (0.23)
-	-	103H7126-5640	103H7126-5610	75.8 (2.98)	φ 6.35 (φ 0.25)	5.8 (0.23)
DB16H716S	DB16H716D	103H7126-5740	103H7126-5710	75.8 (2.98)	φ 6.35 (φ 0.25)	5.8 (0.23)
-	-	103H7126-5840	103H7126-5810	75.8 (2.98)	φ 6.35 (φ 0.25)	5.8 (0.23)
-	-	103H7128-5640	103H7128-5610	94.8 (3.73)	φ 8 (φ 0.31)	7.5 (0.30)
-	-	103H7128-5740	103H7128-5710	94.8 (3.73)	φ 8 (φ 0.31)	7.5 (0.30)
-	-	103H7128-5840	103H7128-5810	94.8 (3.73)	φ 8 (φ 0.31)	7.5 (0.30)

60 mm sq. (2.36 inch sq.)



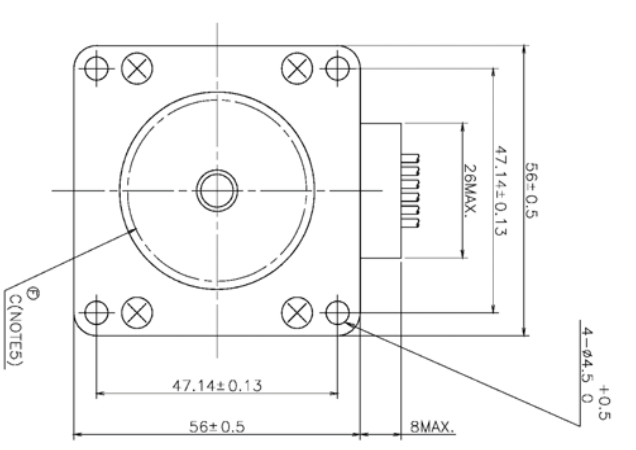
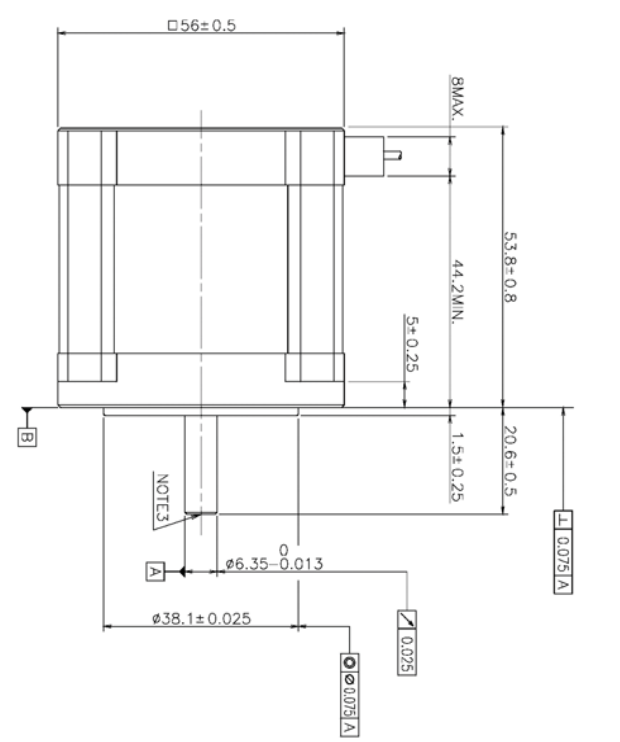
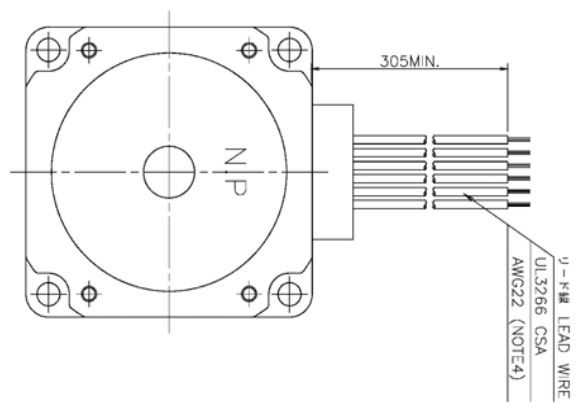
Note: A unipolar motor is illustrated; bipolar motors have four lead wires.

Unipolar

Set model number		Motor model number		Motor length (L)	Shaft diameter (D)
Single shaft	Dual shaft	Single shaft	Dual shaft		
-	-	SH1601-0440	SH1601-0410	42 (1.65)	φ 6.35-0.013 (φ .25 -.0000)
-	-	SH1602-0440	SH1602-0410	54 (2.13)	φ 6.35-0.013 (φ .25 -.0005)
-	-	SH1603-0440	SH1603-0410	76 (2.99)	φ 8-0.015 (φ .31 -.0006)

Bipolar

Set model number		Motor model number		Motor length (L)	Shaft diameter (D)
Single shaft	Dual shaft	Single shaft	Dual shaft		
DB16S161S	DB16S161D	SH1601-5240	SH1601-5210	42 (1.65)	φ 6.35-0.013 (φ .25 -.0000)
DB16S162S	DB16S162D	SH1602-5240	SH1602-5210	54 (2.13)	φ 6.35-0.013 (φ .25 -.0005)
-	-	SH1603-5240	SH1603-5210	76 (2.99)	φ 8-0.015 (φ .31 -.0006)



定格特性・RATED CHARACTERISTICS

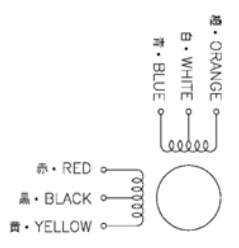
相数 PHASES 2
 基本スロット角 FUNDAMENTAL STEP ANGLE 1.8°
 定格電圧 VOLTS 6.7 V(DC)
 定格電流 AMPS 1 A/PHASE

巻線抵抗 WINDING RESISTANCE 6.7 Ω±10% at 25℃
 巻線インダクタンス WINDING INDUCTANCE 15 mH±20% at 1 kHz 1 V(rms)
 ホールアウトトルク HOLDING TORQUE 0.83 N·m MIN. at 1 A/PHASE 2 PHASE EXCITATION
 NOTE1. 駆出トルク 0.57 N·m MIN. at 200 pulse/s
 負荷イナーシャ INERTIAL LOAD 0.94x10⁻⁴ kg·m²
 (ラバーカップリングとゴムカップリングを含む)
 (INERTIA OF RUBBER COUPLING IS INCLUDED.)

注1. 最大自起動周波数 NOTE1. MAX. STARTING RATE 1100 pulse/s MIN. at NO LOAD
 注1. 最大連続定格周波数 NOTE1. MAX. SLEWING RATE 1550 pulse/s MIN. at NO LOAD
 静止角変動率 POSITIONAL ACCURACY ±0.054° (0.108° SPREAD MAX.) 2 PHASE EXCITATION
 注2. 温度上昇値 NOTE2. COIL TEMPERATURE RISE 80 K MAX.
 コーゲイナーシャ ROTOR INERTIA 0.21x10⁻⁴ kg·m² NOMINAL
 絶縁等級 INSULATION CLASS B
 許容ラスタト重量 ALLOWABLE THRUST LOAD 15 N 特許獲得品
 許容ラスタル径 ALLOWABLE RADIAL LOAD 71 N LOAD TO SHAFT END.

注1. 山洋電機が相数換算図表による。
 NOTE1. SANYO STANDARD 2 PHASE EXCITATION DRIVE CIRCUIT WAS USED.
 2. 160x160の7mm厚基板に取付け、2相励磁=1A/相を連続運転し、逐次法にて測定した時の値。
 3. シフトセンター穴の有無及び形状は、製造上の都合により任意とする。
 4. エンブレフ穴の形状は、製造上の都合により任意とする。
 5. 色分けは、製造上の都合により任意とする。
 THE SHAPE OF INSIDE OF C IS DISCRETION BY THE REASON IN MANUFACTURE.

内部接続 CONNECTION



回転方向・DIRECTION OF ROTATION
 下記の順に電源接続した場合、回転方向は断面図より見て時計方向回転のこと。
 WHEN A MOTOR IS SEQUENCED AS SHOWN IN THE TABLE BELOW,
 THE SHAFT ROTATION MUST BE CLOCKWISE WHEN YOU SEE FROM
 SURFACE "B" SIDE.

励磁順序	1	2	3	4	U-1 線色	LEADS COLOR
励磁順序	+	+	-	-	赤・RED	青・BLUE
励磁順序	+	-	+	-	青・BLUE	黄・YELLOW
励磁順序	+	-	-	+	黄・YELLOW	黒・BLACK
励磁順序	+	+	+	+	黒・BLACK	白・WHITE

山洋電機株式会社 SANYO DENKI CO., LTD. AIG-71
 103H7123-0140
 STEPPING MOTOR
 18 00021245