

## 1. Measurement condition

## 测定条件

### 1-1 Motor Position

马达姿势

Motor to be held, with shaft horizontally

出力轴水平放置

### 1-2 Power Supply

电源

Regulated power supply which assures unquestionable measurement.

可调节直流稳压电源・确保测量时无疑问。

### 1-3 Environmental Temperature

And Humidity

温度和湿度

The test is made in principle of a temperature between 10°C to 30°C

And at relative humidity between 30% and 95%, If the test result is questionable, it shall be judged from the test made at JIS Standard Testing Condition (20°C±2°C,60%-70%RH).

原则上温度为 10°C-30°C・湿度为 30%-95%。如果测试结果有疑问・则按 JIS 标准(20°C±2°C,60%-70%RH)。

## 2. Standard Operating Conditions

## 标准使用条件

### 2-1 Rated voltage

额定电压

8.0V DC CONSTANT between motor terminals

马达端子间 8.0V DC

### 2-2 Operating voltage range

使用电压范围

5.0V-9.0V DC CONSTANT between motor terminals

5.0V-9.0V ( 马达端子间 )

### 2-3 Rated load

额定负载

5.0g\*cm by pulley load

### 2-4 Direction of rotation

旋转方向

CW & CCW

正转 或 反转

### 2-5 Rang of operating

tempersture

使用温度范围

-10°C ~ +50°C

### 2-6 Storage Temperature Range

储存温度范围

-20°C ~ +85°C

### 3. Electrical specification

### 电气性能

3-1 NO Load Current 空载电流	45 mA max.
3-2 NO Load speed 空载转速	10500 ± 10%r/min
3-3 Rated Load Current 负载电流	150mA MAX
3-4 Rated Load Speed 负载转速	6900±10% r/min
3-5 Starting Torque 启转力距	0.98mN*m min(10.0 min g*cm) Based on measurement at two different load ( 0g.cm & 5g.cm) 0.98mN*m 最小(10.0g*cm 最小) 2 点法 ( 0 g.cm & 5g.cm)
3-6 Starting Current 启动电流	350mA MAX
3-7 Starting voltage 启动电压	2.0V MAX
3-8 Insulation resistance 绝缘电阻	DC 100V 10.0MΩ MIN
3-10 Electrical noise 电气噪音	Motor to be equipped with varistor 电机已装有噪音抑制元件压敏电阻
3-11 Rotor resistance 转子电阻	28.5 ohm ±15% at 20degC with the rotor position to be 2/3R(R means resistance of one pole) 28.5 ±15%Ω(2/3 时，R 表示 1 极圈数电阻值)
3-12 Dielectric Strength 耐 电 压	AC 100V ( 50 - 60Hz)1 Minute Without damage AC 100V ( 50 - 60Hz)1 Minute 无异常

#### 4. External&Functional Characteristics

##### 4-1 Shaft End Play

轴向间隙

##### 4-2 Weights

重量

##### 4-3 Mechanical Noise

机械噪音

结构及机械性能

0.02 ~ 0.40mm

Approx 22g

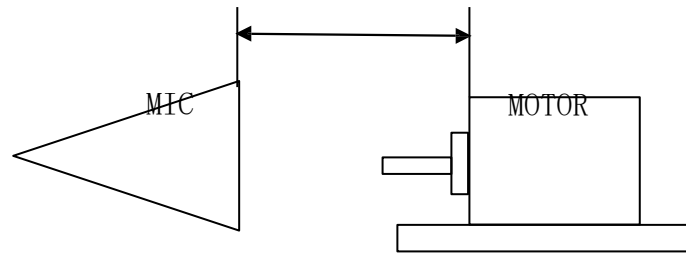
55dB-A MAX with following condition

No load ,rated voltage (approx10500r/min),(RMS)on JIS-A scale, with motor to be set and measured as below . Add light radial force (approx 0.491N) when the clearance noise detected.

Background Noise:26dBmax

55dB-A 以下 额定电压、空载（10500r/min），电机水平放置（见下图）按(JIS-A(RMS) 测试，测试时排除间隙噪音，方法为在轴上加 0.491N 径向力，背景噪音小于 26dB

30cm



## 10. Precautions in using the motor      马达使用注意事项

- (1) If silicon materials, which contain low molecular silicon compounds, adhere to the motor's commutator, brush or other parts, then upon rectification of the electric energy the silicon breaks down into  $\text{SiO}_2$ ,  $\text{SiC}$  and other constituents which produce a rapid increase in the contact resistance between the commutator and brush. Therefore great care should be taken when silicon material is used in a unit and check well at the same time that such binding agents or sealing materials are not generating gases of detrimental nature, whether used for motor mounting or applied during your product assemblies. Care must be taken for an optimum selection, especially when using those of cyanic adhesive and sulfur gas.

如果马达部品或周边环境和物体中含有 Si, S 等微量元素时可能造成换向器与电刷间阻抗增加, 即形成氧化物, 使之不通电

- (2) When mounting your motors by means of binding agents, DON'T allow any adherence to the bearings nor intrusion into the motors.

马达安装后不允许有包装粘结到轴承或异物落入马达内。

- (3) Axial thrust on the output shaft could have an adverse effect on the motor life .i.e. As is produced by worm gears, fans, etc. Check the service life expected under the actual operating conditions by testing the motors installed in your application products. For heavy thrust loads, consider using something mechanical to retain the shaft end.

当蜗杆, 风叶对马达轴有轴向猛推力时对马达寿命有影响, 应利用其它设施减少对马达轴向推拉力 以保证其串量

- (4) There are occasions when the internal resistance of the motor driving power source (Which contains an electrical circuit) can influence the life span of the motor. In instances where there is a low input of voltage to the motor, the internal resistance of the power source is large which may well result in an inferior motor after a short time, conversely in instances where high cyclic voltages are applied, this internal resistance is small and the motor life span is shortened. When the temperature deviates from the normal room temperature as is the case in low and high temperature situations, please note the conditions.

电源内阻偏大或偏小会导致马达运行不良或寿命减短, 另当温度高或低于室温情况下请记录 环境温度。

- (5) If when mounting the motor and assembling the unit, equipment which emits ultrasonic waves is used there is a danger that some of the internal parts of the motor might be damaged so please take care. 请注意马达组装后, 设备若发出超声波将对马达内部造成影响。

## 10. Precautions in using the motor      马达使用注意事项

(6)DON ' T store motors under environmental conditions of high temperature and extreme humidity. DON ' T keep them also in an atmosphere where corrosive gas may be present as it may result in malfunction.  
勿将马达储藏放置在高温高湿有腐蚀性气体处.

(7)Ambient and operating temperatures exert an affect more or less on motor performance and life. Do pay particular attention the surroundings when it is hot and damp. 为防止工作环境的温度变化会影响到马达功能或寿命，所以当天气湿热时请特别注意.

(8)When press fitting a pulley , gear etc., onto the motor output shaft, always support the shaft at the other end or its retaining metal pad in a proper and correct way. 安装滑轮或齿轮时给马达轴正确方式定位，应将马达轴另一端即端盖轴承室用铁块顶住.

(9) When soldering, BE SURE to finish your work quickly so as not to develop plastic deformation around the motor terminals nor to give them any forced bend or inward depression. In doing so, special care must be taken not to allow solder debris and flux to spatter into motors and precautionary measures should be taken if necessary by covering up all the nearby holes and apertures. Any motors having snap-in terminals must also be attended carefully so as not to get flux in along the terminals, as it may cause failure in electrical conduction.

当焊接时，时间勿太长，不要让围绕端子的塑料件变形或使端子弯曲，需保证不能让焊接碎屑或焊锡融化物进入马达内部。不得已时，须将塑料件附近的孔径或缝隙掩盖. 任何马达均需保证焊锡融化物不得顺端子进入其内部，否则可能会引起马达电气故障.

(10) DON ' T leave motor shaft locked while power is applied , as even a short-time lock-up may cause excess heat build up resulting damage to the motor depending on its specifications. 切勿在马达接通电源时当马达轴堵住，这样可能会使马达温度升高而产生火灾.

(11) Intensive pressure on the endbell boss might cause starting disability of motor. So please take care for motor mounting not to push endbell boss. If the endbell boss must be pushed, the load should be put on the center of the boss. Please ask us for the suitable value of the load. 强烈的挤压端盖轴承室可能会造成马达无法转动。所以请尽量不要推盖板轴承室. 如果轴承室无法避免要被推压，请将负荷加于轴承室中心位置. 必要时请预先通知我们做上述评估.

(12) Please do not touch motor bearing as otherwise bearing oil will be drawn out, which might cause bearing noise.  
请勿触摸马达轴承，否则轴承油被吸干容易引起燥音.

(13) When motor more than three months did not be used for need to note oil for bearings and confirm afresh.  
当马达库存超过三个月未被使用时需重新给轴承注油并确认.

## 10. Precautions in using the motor 马达使用注意事项

### (14) Fumigant and its gas may affect motor

performance. Then, motors shall not be exposed to fumigant and its gas, if fumigation shall be made for packaging material etc.

熏剂及其气体可能会影响马达正常运行. 勿将马达暴露在熏剂或其气体中. 如包装材料中可能含有熏剂.

### (15) Identification marking drawn on motor

housing with dyestuff marker may be

blurred or may fade out when rubbing.

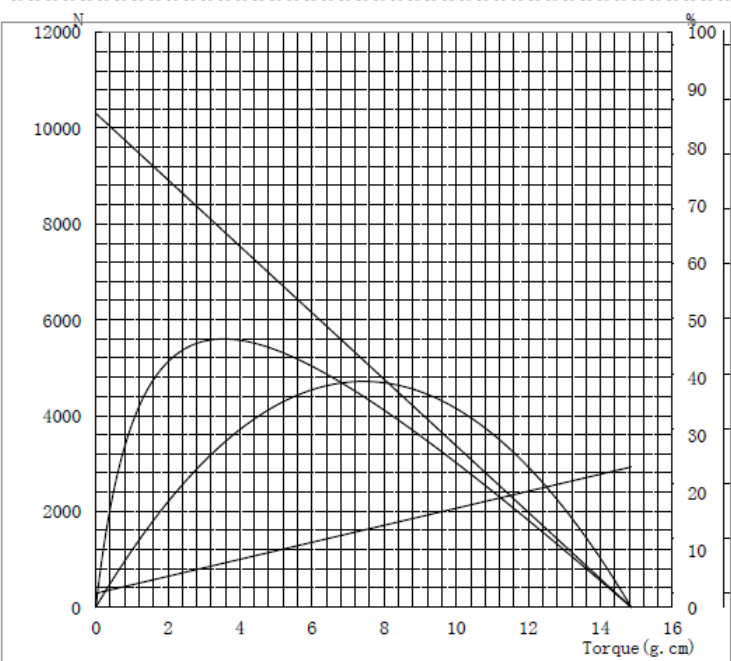
马达机壳上的捺印标识可能会慢慢褪色.

### (16) Temperature of soldering Tip: 焊接温度

Soldering temperature and time must be 400°C

(max). within 3 seconds. 焊接时烙铁温度不超过 400°C, 焊接时间不超过 3 秒

11. Motor Characteristics Curves 马达特性曲线



Voltage Rating(额定电压):	8.0	Volts
Direction(电机转向):	CW	
At No Load(空载)		
Speed(转速):	10309	RPM
Current(电流):	0.024	AMPS
At Stall(堵转)		
Torque(转矩):	14.85	g. cm
Current(电流):	0.244	AMPS
At Max Efficiency(最大效率)		
Efficiency(效率):	46.46	%
Speed(转速):	7847	RPM
Torque(转矩):	3.55	g. cm
Current(电流):	0.077	AMPS
Output(输出):	0.28	Watts
At Max Power(最大功率)		
Output(输出):	0.39	Watts
Speed(转速):	5155	RPM
Torque(转矩):	7.43	g. cm
Current(电流):	0.134	AMPS

Customer Approved(客户确认):

Issued(制定): \_\_\_\_\_ Approved(批准): \_\_\_\_\_

12、Motor appearance 外观图

