



LJ DEVICE CO., LTD.

力臻股份有限公司

LJ DEVICE CO., LTD.

零件規格書 / 承認書

SPECIFICATION FOR APPROVAL

CUSTOMER : _____

DESCRIPTION : _____ VIBRATOR _____

MODEL : _____ FG-Y4082020JT12B _____

CUSTOMER PART NO : _____

APPROVED SIGNATURES

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Rev	Date	Description	Designed	Checked	Approved
A	2018/11/26	Release		Kevin	

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型号/Part No.	FG-Y4082020JT12B
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1. 适用范围/ General Scope

本说明书适用于圆筒式永磁直流电机 FG-Y4082020JT12B 型

This specification applies to cylindrical permanent-magnetic motors DC model

FG-Y4082020JT12B

2. 使用条件/ Operating Conditions

项目/Item	规格/Specifications	条件·备注/Conditions & Remarks
2-1 额定电压 Rated voltage	3.0V DC	
2-2 额定负荷 Rated load	振子 Counterweight	见 10. 外形图 As specified in 10. Outline Drawing
2-3 旋转方向 Rotation	C.W/C.C.W (clockwise or counter clockwise)	
2-4 马达位置 Motor position	全方位 All position	
2-5 使用电压范围 Operating voltage	2.0~3.6V DC	
2-6 使用环境 Operating environment	-30 ~ 70℃, 常湿 /Ordinary Humidity:65±20%RH	无水气凝结 No condensation of moisture
2-7 保存环境 Storage environment	-40 ~ 80℃, 常湿 /Ordinary Humidity:65±20%RH	无水气凝结 No condensation of moisture

3. 测定条件/Measuring condition

项目/Item	规格/Specifications	条件·备注/Conditions & Remarks
3-1 温度 Temperature	20±2℃	
3-2 湿度 Humidity	(63%~67%) RH	
3-3 位置 Motor position	轴向水平 Motor shaft horizontal	将马达固定在试验台上 Lock the motor in a test fixture

标准测试条件为温度 20℃, 湿度 65%。如无疑异, 也可在温度 5~35℃、湿度 45~85%的条件下测试。马达测试时, 放置方向为轴向水平。/The measurement at 20℃ & 65%RH is standard. If the judgment is not questionable, recognize measurement at 5℃ to 35℃ & relative humidity 45% to 85%. Direction of motor is shaft horizontal.

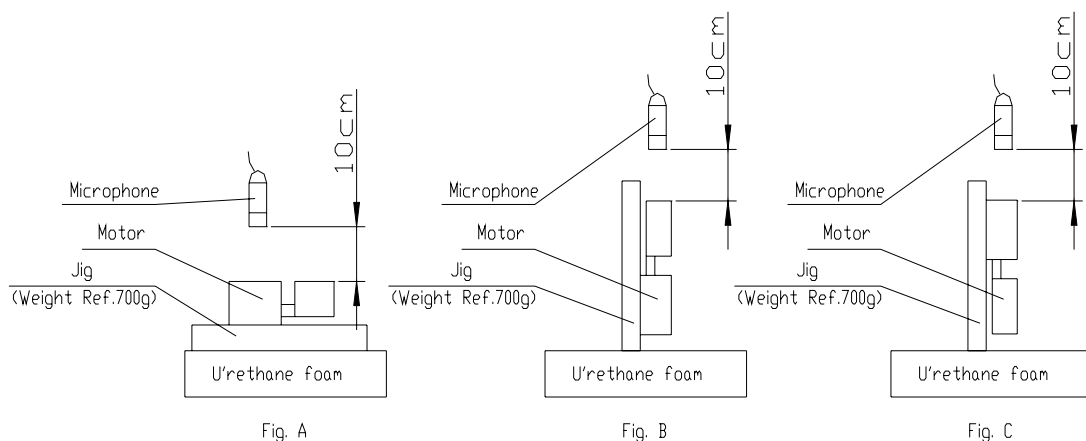
4. 机械要求/Mechanical specification

项目/Item	规格/Specifications	条件·备注/Conditions & Remarks
4-1 结构 Configuration	见 10. 外形图 As specified in 10. Outline Drawing	Outline drawing No: FG-Y4082020JT12B
4-2 外观 Appearance	不含有机机械损坏及不充分的浸蚀等。 There shall be no evidence of mechanical damage and shall not have inadequate corrosion and so on	目测 (容许范围根据样品外形) Visual examination(allowable extent is based on boundary sample)
4-3 轴向间隙 Shaft end play	0.05mm~0.2mm	
4-4 振子固定力 Holding strength of vibration weight	30N (3kgf) Min	

5.性能特征/Performance and characteristics

项目/Item	规格/Specifications	条件·备注/Conditions & Remarks
5-1 额定转速 Rated speed	15,000±2500rpm	在额定电压和额定负载（振子）下。 At rated voltage and rated load (Counterweight).
5-2 额定电流 Rated current	70 mA Max	
5-3 堵转电流 Stall current	95 mA Max	在额定电压下。 At rated voltage
5-4 起动电压 Starting voltage	2.0V DC Max	在额定负载（振子）下电枢的任意位置。 At rated load (Counterweight) any position of rotor.
5-5 绝缘电阻 Insulation resistance	1MΩ Min	在 100V 直流下，端子和机壳间 At DC 100V between Terminal and case.
5-6 端子阻抗 Terminal resistance	59 Ω (±20%)	在 20℃ 下 At 20℃
5-7 机械噪音 Mechanical noise	50dB(A)Max	

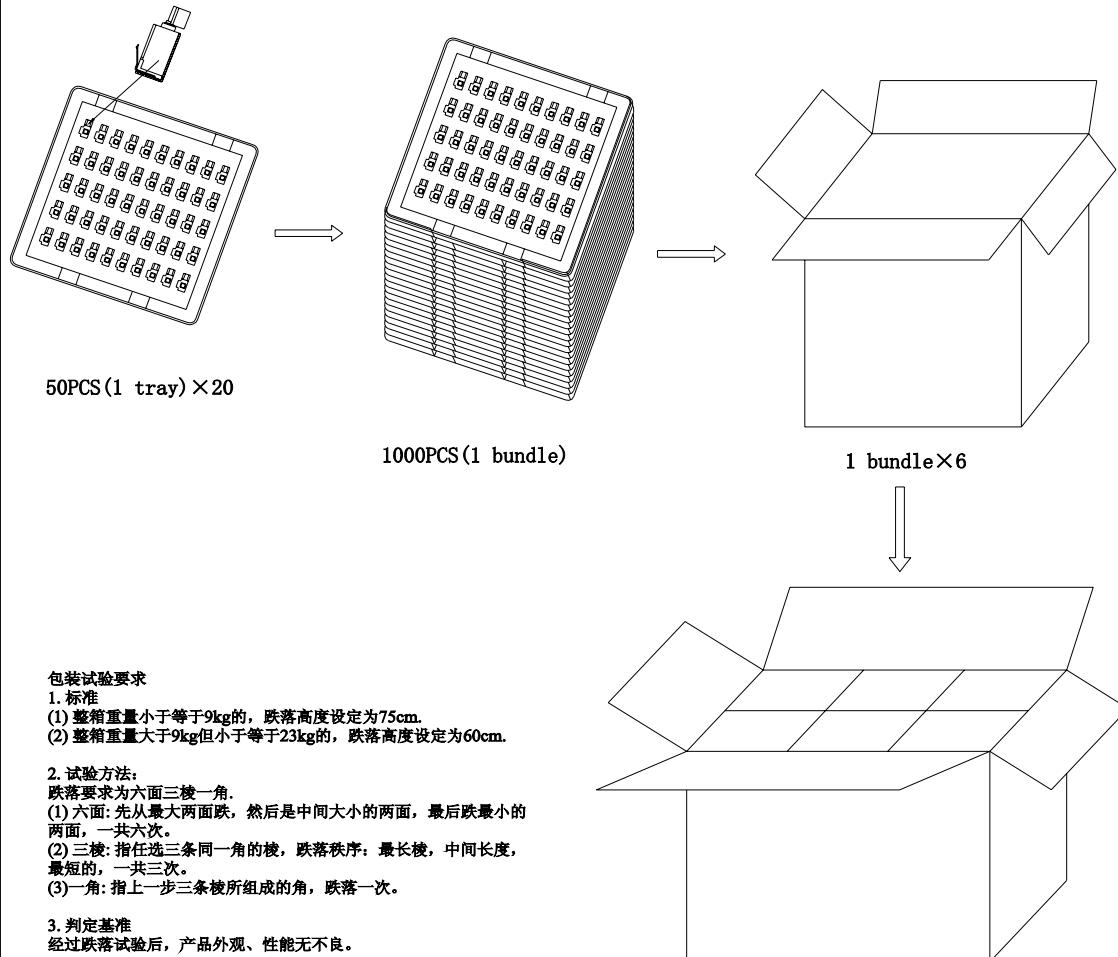
在额定电压、额定负载（振子）下
背景噪音：不大于 28dB.A 计权
测试仪器：B&k
夹具重量：700g
At rated voltage and rated load (Counterweight).
Back ground noise 28dB(A) Max
Measuring instruments: B&k
Weight of jig:700g



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6. 可靠性/Reliability											
项目/Item		规格/Specification						判定标准/Judgment			
6-1	寿命 Life time							在常温常湿下放置 2h 后，马达应符合项 7-1 的要求。 After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 7-1.			
		位置 Position	电压 Volt	负荷 Load	温度 Temp	湿度 Humi	寿命 Life				
		轴水平 Horizon	额定 Rated	重量 Weight 振子	20℃	65%	200,000 Cycles				
6-2	低温放置 Low temp. exposure	温度 /Temperature:	-40±2℃			时间 /Time:	96h				
6-3	高温放置 High temp. Exposure	温度 /Temperature:	80±2℃			时间 /Time:	96h				
6-4	湿度放置 Humidity exposure	温度 /Temperature:	40±2℃			湿度 /Humidity:	90~95%RH				
		放置时间 /Exposure time:	96h			无水气凝结/No condensation of moisture					
6-5	振动 Vibration	全振幅 /Displacement :	1.5mm (p-p)			频率 /Frequency:	10 ~ 55Hz				
		加速度 /Acceleration:	22m/s ²			周期 /Period:	20min 完成 10~55~10Hz				
		方向 /Direction:	x, y, z			时间 /Time:	每个方向 2h /Each 2 hours				
6-6	自然跌落 Free fall	试验状态/Test state:	将马达固定在约 100 克（包括马达本身）的物体上，落向水泥地面。 Set the motor to the approximately 100g (include the motor) weight of block drop the motor on the concrete floor.						测试结果应符合项 7-2 的要求。 After the test motors shall be approved as specified in item 7-2.		
		高度 /Height:	1.5m			方向 /Direction:	6 个面 / 6 faces				
		次数 /Number of times:	每个面 2 次			/ Twice 2 each					
6-7	热冲击 Heat shock test	试验循环 /Test cycle :	20 cycles								
		在常温常湿下放置 2h 后，马达应符合项 7-2 的要求。 After 2 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 7-2.									

9. 包装/Packaging

Y408T圆柱马达包装 Packaging drawing of Y408T cylindrical motor

**包装试验要求****1. 标准**

- (1) 整箱重量小于等于9kg的, 跌落高度设定为75cm.
- (2) 整箱重量大于9kg但小于等于23kg的, 跌落高度设定为60cm.

2. 试验方法:

跌落要求为六面三棱一角。

- (1) 六面: 先从最大两面跌, 然后是中间大小的两面, 最后跌最小的两面, 一共六次。
- (2) 三棱: 指任选三条同一角的棱, 跌落秩序: 最长棱, 中间长度, 最短的, 一共三次。
- (3) 一角: 指上一步三条棱所组成的角, 跌落一次。

3. 判定基准

经过跌落试验后, 产品外观、性能无不良。

Package Test Requirement:**1. Criteria**

- (1) The weight of the whole carton less than 9kg, the dropping height is 75cm.
- (2) The weight of the whole carton more than 9kg and less than 23kg, the dropping height is 60cm.

2. Test Methods:

Dropping requirement is 6 faces, 3 arris, 1 angle.

- (1) 6 faces: First dropping with two biggest faces, then dropping with another two middle faces, at last dropping with two smallest faces, once per face, total 6 faces.
- (2) 3 arris: Choose any 3 arris which make up of the same the angle, the dropping sequence is the longest arris, middle arris, shortest arris. Total 3 times.
- (3) 1 angle: Point to the angle which is made up with the 3 arris in the above step. Dropping for 1 time.

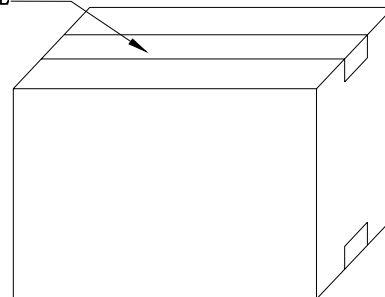
3. Judgement Criterion

After drop test, no evidence of damage on the appearance and performance.

Remarks:

6000PCS/CTN: 52cm × 35cm × 24.5cm

OPP TAPE



10. 外形图/Outline Drawing

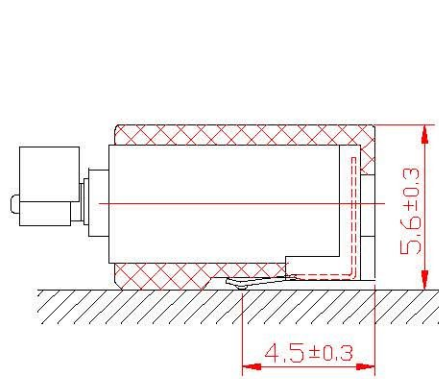
2018.11.26

说明书/Specification

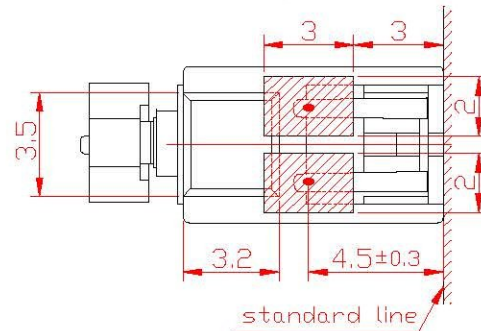
编号/NO. FUGE-JT12B

代码/code: 0

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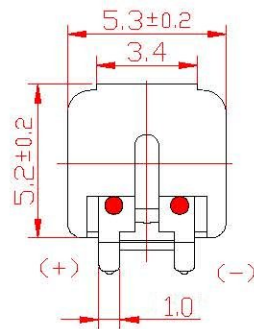


PCB Land drawing (working)

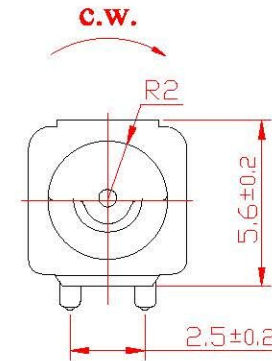
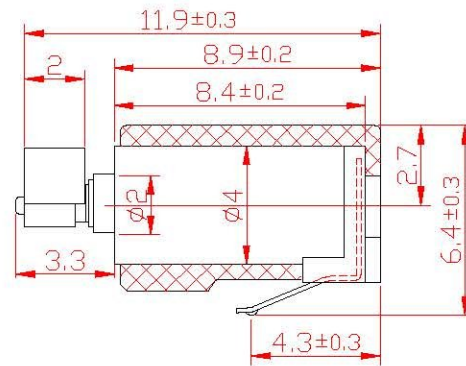


技术要求/Technical requirement

- 1.额定电压/Rated voltage:3.0V
- 2.额定电流/Rated current:70mA Max
- 3.额定转速/Rated speed:15000±2500rpm
- 4.堵转电流/Stall current:95mA Max
- 5.端子阻抗/Terminal resistance:37Ω(±20%)
- 6.起动电压/Starting voltage:2.0V Max
- 7.轴向间隙/Shaft end play:0.05~0.2mm
- 8.所有尺寸为A向压紧后的尺寸(不包括轴向间隙)/Overall length is measured after counterweight being pressed against body in direction A. (Shaft end play is not included.)
- 9.未注线性公差为/Unmarked tolerance: ±0.1mm



A向



备(通)用件登记

底图总号

签字

日期

标记	处数	分区	更改文件号	签名	日期
设计	张勇	2018.11.26	标准化		
校对	陈国栋	2018.11.26			
审核	徐旭	2018.11.26			
工艺			批准		

阶段标记	重量	比例
		5:1
共 页	第 页	

外形图

FG-T4082020JT12B

