



# 产品规格书

## PRODUCT SPECIFICATION

客户名称Buyer Name	
客户料号Buyer Part No.	
客户承认签章 Buyers Approval & Signatures	

文件编号Spec No.		版本	A/0
品名描述 Product Description	圆柱直流马达 Cylindrical DC motor		
型号Part No.	VZ3TL5B3120061P		
送样日期Date			
设计Designed by	审核Checked by	批准Approved by	
2024.04.30	2024.04.30	2024.04.30	

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**1. 适用范围/ General Scope**

本规格书适用于圆筒式永磁直流电机 VZ3TL5B3120061P 型

This specification applies to cylindrical permanent-magnetic motors DC model VZ3TL5B3120061P

**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	2.5~3.6V DC	
2-6	使用环境 Operating environment	-20 ~ 60℃, 常湿 /Ordinary Humidity:10~90%RH	无水气凝结 No condensation of moisture
2-7	保存环境 Storage environment	-30 ~ 80℃, 常湿 /Ordinary Humidity:10~90%RH	无水气凝结 No condensation of moisture

**3. 测定条件/Measuring Conditions**

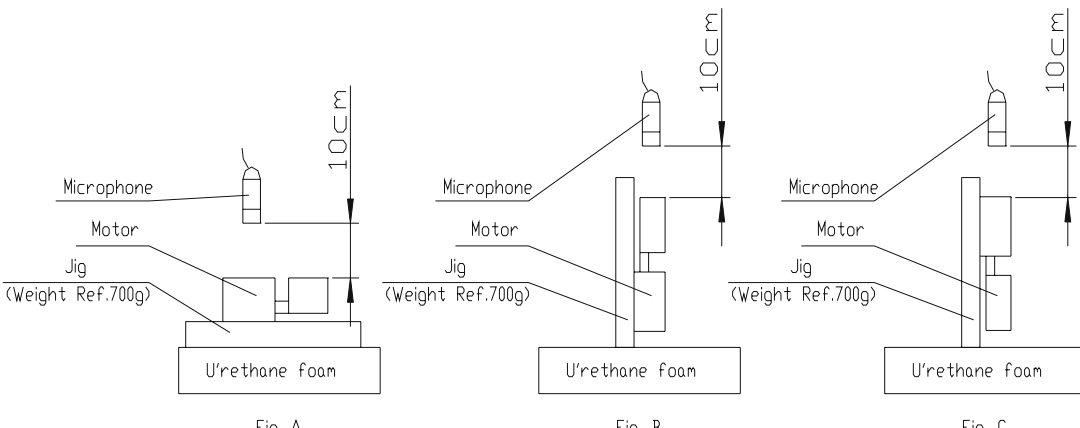
项目/Item		规格/Specifications	条件·备注/Conditions & Remarks
3-1	温度 Temperature	20±5℃	
3-2	湿度 Humidity	65±15%RH	
3-3	位置 Motor position	轴向水平 Motor shaft horizontal	将马达固定在试验台上 Lock the motor in a test fixture

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.

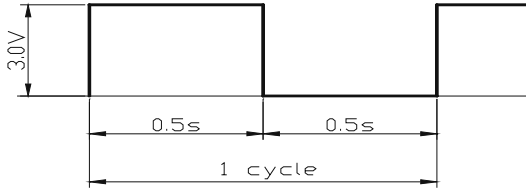
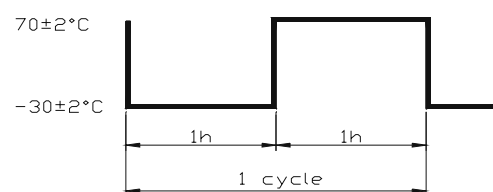
**4. 机械要求/Mechanical Specifications**

项目/Item		规格/Specifications	条件·备注/Conditions & Remarks
4-1	结构 Configuration	见外形图 As specified in outline drawing	Outline drawing No: VZ3TL5B3120061P
4-2	外观 Appearance	不含有机机械损坏及不适当的浸蚀等。 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	19.6N Min	

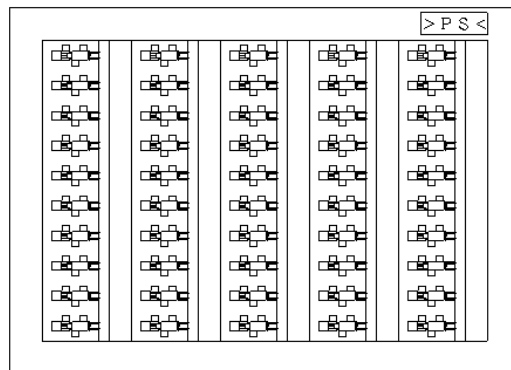
**5.性能特征/Performance and characteristics**

项目/Item		规格/ Specifications	条件·备注/ Conditions & Remarks
5-1	额定转速 Rated speed	12,000±2500 rpm	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	40 mA Max	
5-3	启动电流 Starting current	50 mA Max	在额定电压下。 At rated voltage
5-4	起动电压 Starting voltage	2.5V 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	70Ω (±10Ω)	在 20℃ 下 At 20℃
5-7	机械噪音 Mechanical noise	45dB(A)Max	<p>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&amp;k 夹具重量：700g At rated voltage and rated load (Counterweight). Back ground noise 28dB(A) Max Measuring instruments: B&amp;k Weight of jig:700g</p> 
5-8	振动量 Vibration Strength	0.60 Grms	

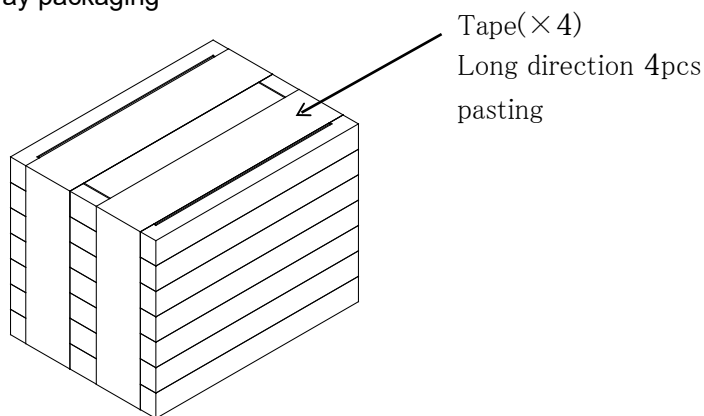
**6. 可靠性/Reliability**

项目/Item	规格/ Specifications	判定标准/Judgment												
6-1 寿命 Life time		试验后, 马达应符合项 7-1 的要求。 After the test, motors shall be approved as specified in item 7-1.												
	<table border="1"> <tr> <td>位置 Position</td> <td>电压 Volt</td> <td>负荷 Load</td> <td>温度 Temp</td> <td>湿度 Humi</td> <td>寿命 Life</td> </tr> <tr> <td>轴水平 Horizon</td> <td>额定 Rated</td> <td>振子 Weight</td> <td>20°C</td> <td>65%</td> <td>200,000 Cycles</td> </tr> </table>		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	振子 Weight	20°C	65%	200,000 Cycles
	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	振子 Weight	20°C	65%	200,000 Cycles									
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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	振子 Weight	20°C	65%	200,000 Cycles									
6-2 低温放置 Low temp exposure	温度 /Temperature: $-40\pm 2^{\circ}\text{C}$ 时间 /Time: 96h	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.												
6-3 高温放置 High temp. Exposure	温度 /Temperature: $80\pm 2^{\circ}\text{C}$ 时间 /Time: 96h													
6-4 湿度放置 Humidity exposure	温度 /Temperature: $40\pm 2^{\circ}\text{C}$ 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: $22\text{m/s}^2$ 周期 /Period: 20min 完成 10~55~10Hz /20 Minutes log sweep 10~55~10Hz 方向 /Direction: x, y, z 时间 /Time: 每个方向 2h /Each 2 hours	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.												
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. 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	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.												
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.												

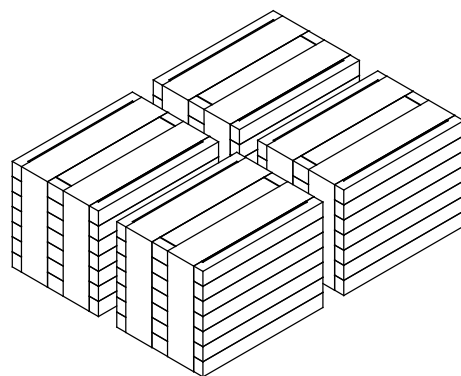


**9. 包装/Packaging**
**9-1 Motor packaging**


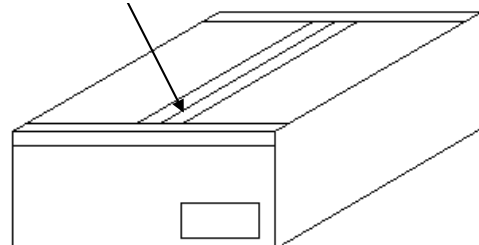
Tray	Size	263×200×8 (mm)	Material	Styrofoam
	Qty	100 pcs		

**9-2 Tray packaging**


Packaging block	Qty	100pcs×12trays=1200pcs
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**9-3 Carton packaging**


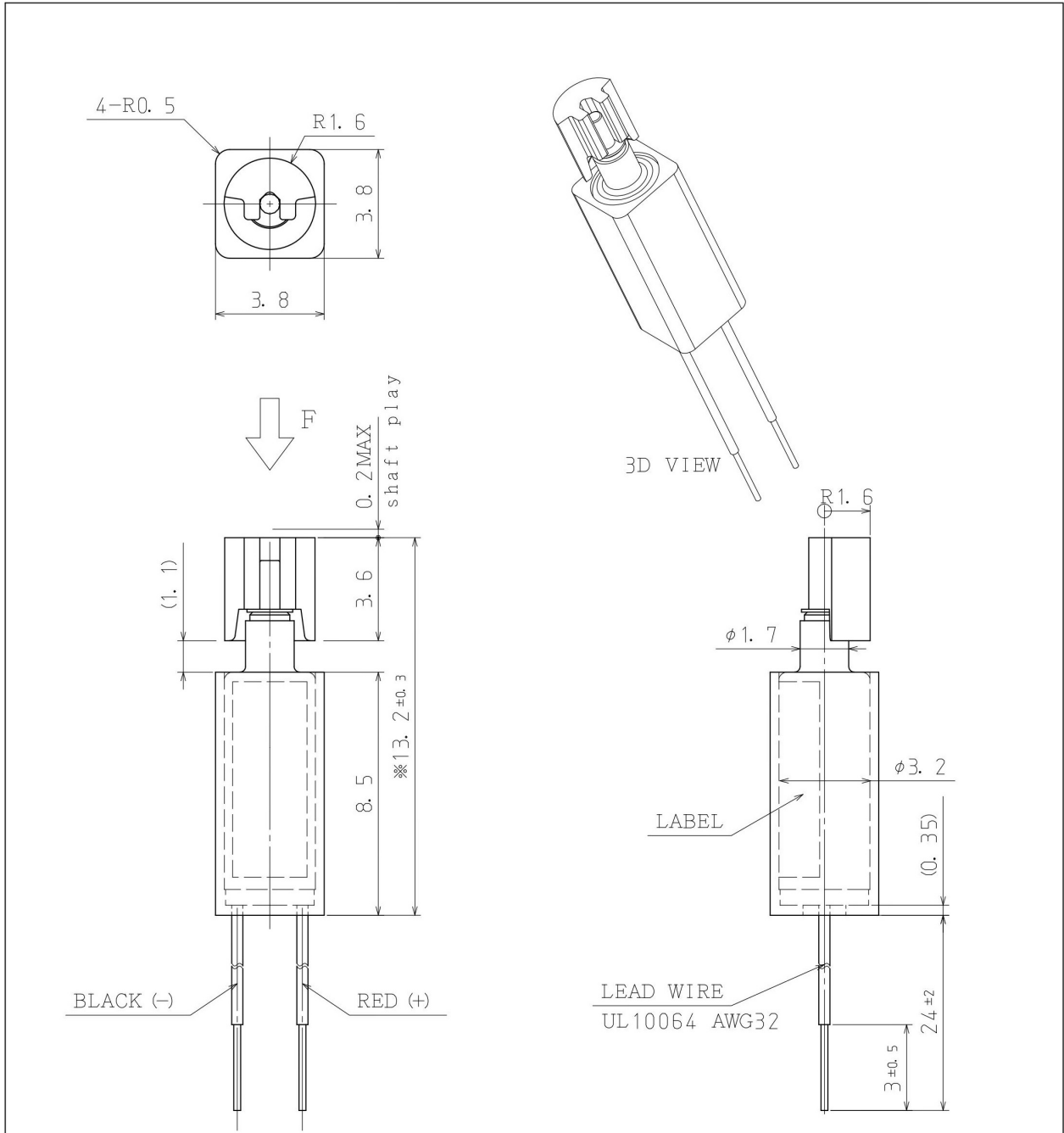
Tape:  
I type pasting



Carton box	Size (inside)	450×310×200(mm)	Material	Double-wall cardboard box
	Q'ty	1200 pcs × 4 sets=4800 pcs		

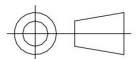
The heaping up number of carton box is less than five boxes.

10. 外形图/Outline Drawing



•NOTE  
GROMMET  
SILICON RUBBER JIS 60deg.  
COLOR BLACK

※ WHEN PRESSED ON F



					TOL.	± 0.2	MAT.	-	SCALE	5:1
					ANGLES	± -	FINISH	-	UNIT	mm
					APPD.	CHK.	DSGN.	TYPE		
								TITLE	VIBRATION MOTOR	
					DATE	MAY. 03. '24		DWG. No.		
SYM.	DATE	REVISION	DRW.	CHK.						



## 11. 修改记录/Revision History

修改号 Rev. No.	日期 Rev. Date	页码 Page No.	修改项目 Revised Item	更改原因 Reason
A/0	2024.04.30	/	初始规格/Preliminary spec	