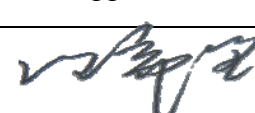


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规格书

SPECIFICATION

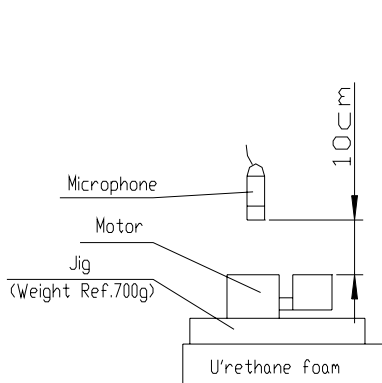
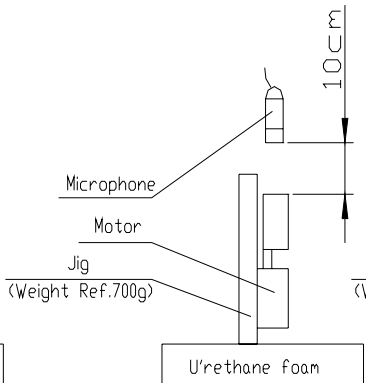
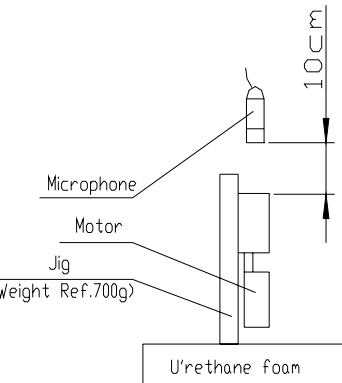
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	客户料号/Part No.	
	客户承认签章 Customer Approved Signatures	

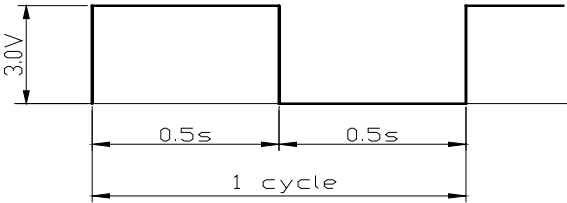
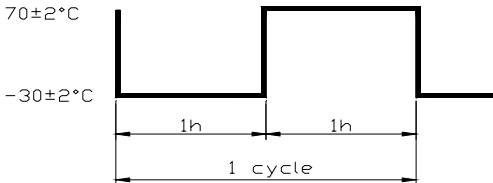
文件编号/Spec No.	KOTL-B-535	
品名/Description	圆柱直流马达/Cylindrical DC motor	
型号/Part No.	Z7AL2B1690002	
设计/Designed	审核/Checked	批准/Approved
		
2009.01.16	2009.01.16	2009.01.16

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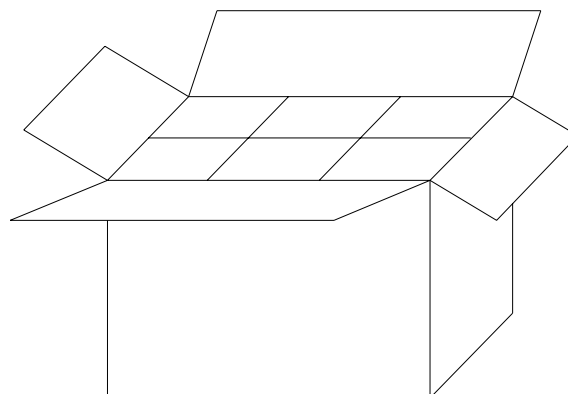
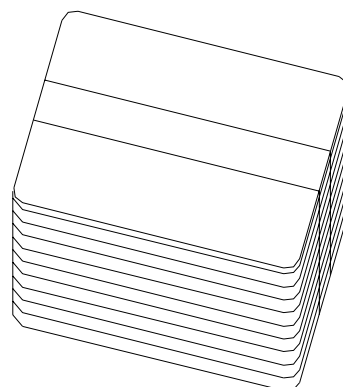
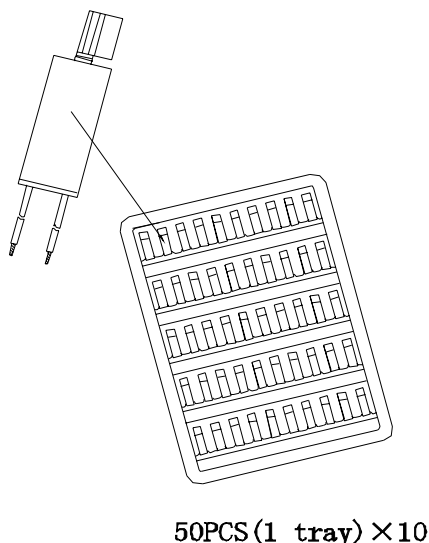
2009.01.16		说明书/Specification		编号/No KOTL-B-535		代码/code:0		3/9	
型号/Model				Z7AL2B1690002					
1. 适用范围/ General Scope 本说明书适用于圆筒式永磁直流电机 Z7AL2B1690002 型 This specification applies to cylindrical permanent-magnetic motors DC model Z7AL2B1690002									
2. 使用条件/Operating Conditions									
项目/Item			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	2.2～3.6V 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 Conditions									
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 Specifications									
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: Z7AL2B1690002			
4-2		外观 Appearance	不含有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	0.1mm～0.3mm						
4-4		振子固定力 Holding strength of vibration weight	49N (5kgf) Min						

2009.01.16		说明书/Specification	编号/No KOTL-B-535	代码/code:0	4/9
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	250 mA Max			
5-3	堵转电流 Stall current	680 mA Max	在额定电压下。 At rated voltage		
5-4	起动电压 Starting voltage	1.7V 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	5.5Ω (±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				
 Fig. A  Fig. B  Fig. C					

2009.01.16	说明书/Specification	编号/No KOTL-B-535	代码/code:0	5/9					
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	Weight 振子	20℃			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: $60\pm 2^{\circ}\text{C}$ 时间 /Time: 96h							
6-4	湿度放置 Humidity exposure	温度 /Temperature: $40\pm 2^{\circ}\text{C}$ 湿度 /Humidity: $90\sim 95\%\text{RH}$ 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 /20 Minutes log sweep10~55~10Hz 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 75 克(包括马达本身)的物体上, 落向水泥地面。 Set the motor to the approximately 75g (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.			

(Z7AL2) 圆柱马达包装

Packaging drawing of Z7AL2 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.

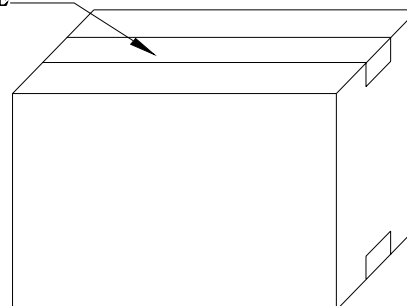
3. Judgement Criterion

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

Remarks:

500PCS/CTN: 24cm × 17.5cm × 27.5cm
 1000PCS/CTN: 34cm × 24cm × 27.5cm
 2000PCS/CTN: 47cm × 34cm × 27.5cm
 3000PCS/CTN: 51cm × 47cm × 27.5cm

OPP TAPE



10. 外形图/Outline Drawing

Z7AL2B1690002

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借(通)用件登记

底图总号

簽 字

日期

技术要求/Technic requirement

1.额定电压/Rated voltage:3.0V

2.额定电流/Rated current:250mA Max

3. 额定转速/Rated speed: $12000 \pm 2500 \text{rpm}$

4.堵转电流/Stall current:680mA Max

5.端子阻抗/Terminal resistance:5.5Ω(±20%)

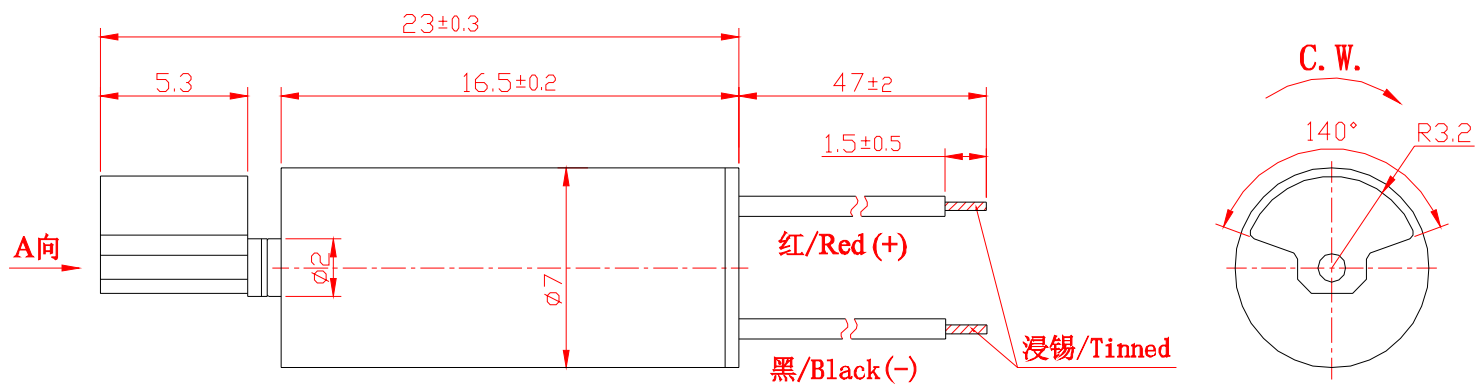
6. 起动电压/Starting voltage: 1.7V Max

7.轴向间隙/Shaft end play:0.1~0.3mm

8.导线规格/Lead spec: AWG30 UL1571

9. 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.)

10.未注线性公差为/Unmarked tolerance: $\pm 0.1\text{mm}$



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										外形图			Z7AL2B1690002		
标 记	处 数	分 区	更改文件号	签 名	日 期										
设 计	郭梦秋	2009.01.16	标准化	张其荣	2009.01.16	阶 段 标 记		重 量	比 例		Z7AL2B1690002				
校 对	杨 益	2009.01.16							5:1						
审 核	陈文荣	2009.01.16													
工 艺	刘林真	2009.01.16	批准	项瑞坚	2009.01.16	共 页		第 页							

2009.01.16

规格书/Specification

编号/NO. K0TL-B-535

代码/code:0

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