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PRODUCT SPECIFICATION

客户信息	客户名称/Customer	
	客户代码/Part No.	
	客户确认签章 /Customer Approved Signatures	

K O T L	文件编号/Spec No.	KOTL-W-S007	
	品名描述/ Product Description	无刷振动马达 BLDC BRUSHLESS COIN VIBRATION MOTOR	
	型号/Part No.	W0625AB001F	
	送样日期/Date		
	设计/Designed by	审核/Checked by	批准/Approved by
	杨兰/YANG LAN	黄浦/HUANG PU	黄剑辉/HUANG JH
	2016.10.29	2016.10.29	2016.10.29

规格书内容/ Contents

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1. 适用范围/General Scope of Application

本说明书适用于无刷振动马达 W0625AB001F。

This specification applies to Brushless vibration D.C motor model W0625AB001F.

2. 使用条件/Operating Conditions

项目/Item	规格/Specification
2-1 额定电压 Rated voltage	3.0V DC
2-2 使用电压范围 Operating voltage	2.7~3.3V DC
2-3 旋转方向 Rotation	CW
2-4 使用环境 Operating environment	温度 Temperature-20℃~+60℃ 湿度/Ordinary Humidity:65±20%RH
2-5 保存环境 Storage environment	温度 Temperature -30~+85℃, 湿度/Ordinary Humidity:65±20%RH

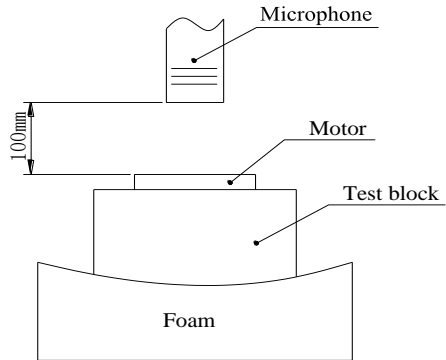
3. 测定条件/Conditions of Measurement

项目/Item	规格/Specification
3-1 温度 Temperature	25±3℃
3-2 湿度 Humidity	65±20% RH

4. 电气性能/Electrical Characteristics

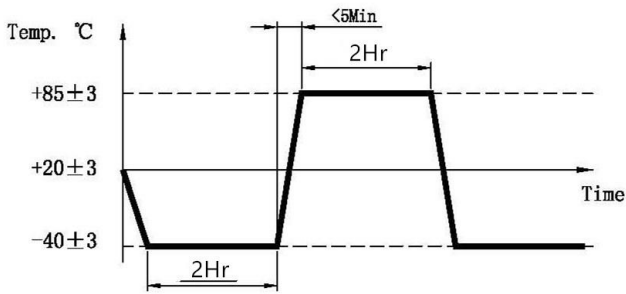
项目/Item	规格/Specification	条件/Condition
4-1 额定转速 Rated speed	15,000±3,000rpm	额定电压下 At rated voltage.
4-2 额定电流 Rated current	80mA Max	
4-3 启动电流 Starting current	175mA Max	
4-4 启动电压 Starting voltage	2.5V DC Min	在最小起动电压下起动。 Motor is rotating at minimum starting voltage.
4-5 绝缘电阻 Insulation resistance	10MΩ Min	在 100V 直流下，端子和机壳间。 At DC 100V between Terminals and case.

5. 机械性能/Mechanical Characteristics

项目/Item		规格/Specification
5-1	振动量 Vibration strength	~0.4G (rms) (在额定电压下, 100g 的模板上测试) ~0.4G (rms) (Measured @100g jig under rated voltage)
5-2	重量/Weight	0.35g ± 10%
5-3	抗压力 Capacity to resist pressure of motor	3.0kgf Max
5-4	机械噪音 Mechanical noise	小于 50 分贝. A 计权 50dB (A) Max
	在额定电压下。At rated voltage. 背景噪音: 不大于 25dB, A 计权。 Back ground noise < 25dB, (A)Max.	

6. 可靠性能/ Reliability Tests

项目/Item		规格/Specification	判定标准/Judgment
6-1	寿命 Lifetime	额定电压/ Rated voltage: 3.0V DC 试验模式/ Test mode: 2S On, 1S Off, as 1 cycle. 循环次数/ Test cycle: 500,000 cycles	试验后, 马达符合项 7-1 的要求。After the test, motors shall be approved as specified in item 7-1.
6-2	低温放置 Low temperature exposure	温度/Temperature: $-20 \pm 2^{\circ}\text{C}$ 时间/Time: 2h	常温常湿环境下放置 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.
6-3	高温高湿放置 High temperature and Humidity exposure	温度/Temperature: $+50^{\circ}\text{C}$ 湿度/Humidity: $95 \pm 3\% \text{RH}$ 放置时间/ Exposure time: 120h 无水气凝结/ No condensation of moisture	常温常湿环境下放置 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.

项目/Item		规格/Specification	判定标准/Judgment
6-4	高温高湿动作实验 High Temperature Humidity Life	1 Cycle: 90 sec On, 30 sec Off 1440 Cycles 电压 温度 湿度 Test 时间 DC 3.3V 50°C 95% RH 48Hr -在常温常湿下放置2小时后测定. 3.0V 90s on/30s off , 1440 Cycles +50°C,95%RH,48Hr test In Room temperature 2hours later. Voltage Temperatur eHumidity Test time DC 3.3V 50°C 95% RH 48Hr	测试结果应符合项 7-1 的要求。After the test motors shall be approved as specified in item 7-1.
6-5	自然跌落 Free fall	试验状态/Test mode: 将马达固定在约 100 克（包括马达本身）的物体上，落向钢板面。Set the motor to a fixture of approx. 100g (include the motor) and drop it onto the steel surface. 高度/Height: 1.5m 方向/Direction: 6 面、6faces 次数/Number of times: 10 次/ Each 10 times （总共 60 次/Total 60 times drop)	测试结果应符合项 7-1 的要求。After the test motors shall be approved as specified in item 7-1.
6-6	热冲击 Thermal shock	测试模式/ Test mode: 2 hour at -40°C, 2hour at +85°C, as one cycle. Transfer time between extreme temperatures: <5 分/5min 循环次数/Test cycle:200 cycles 	常温常湿环境下放置 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.
6-7	盐雾试验 Salt spray test	浓度/Concentration: 5% NaCl 溶液 / 5% NaCl solution PH值/PH value: 6.5--7.2 试验槽温度/Test chamber temperature: 35±2°C 盐雾沉降量/Salt spray deposition: 1--2ml/80cm2*h 试验时间/Time: 8Hr	试验后恢复 2h, 马达外壳不可出现不可擦拭的锈迹 After 2 hours exposure in ordinary temperature and humidity, non-wipe-able rust on the case is not allowed

7. 判定基准/ Judgments after Reliability Tests

项目/Item		判定基准 / Requirements
7-1	表 A Table A	1)额定转速/Rated speed: 不低于初始值-30%; 不高于初始值+50%/ No lower than -30% of initial data; No more than +50% of initial data. 2)额定电流/Rated current: 不低于初始值-30%; 不高于初始值+50% No lower than -30% of initial data; No more than +50% of initial data. 3)端阻/Terminal resistance: 不大于初始值±15% No more than +15% of initial data; No less than -15% of initial data. 4)起动电压/Starting voltage: 不大于 3.4V 直流电压 3.4V DC Max 5)绝缘电阻/Insulation resistance: 大于 10MΩ

8. 使用时注意事项/ Cautions for Use

8-1.与规格不同使用的情况下,性能和寿命会发生问题.希望注意电压使用范围.

You might encounter functional and life problems if you use it different from the standard. Please be careful of the range of use, like voltage etc.

8-2. MOTOR 使用时,一定要把图纸上的红色导线(+)端子连接在 (+),蓝和黑色导线 (-) 端子连接在(-)后使用.

No matter what please connect red lead wire to (+) socket, and blue and black lead wire to (-) socket when you use the motor.

8-3. 在有害 GAS 及高温高湿的场所保管对马达造成不良因素所以请注意保管.

Please be careful of that the storage in high temperature and humidity and noxious gas might cause hindrances to motors.

8-4.为了减少马达旋转时因检查失误造成电源端子短路导致 Drive IC 损伤。请将 2 μ F 电容器并联在马达上与电源插头(+ / -)连接.

Drive IC can be damaged by power plug short due to careless test. In order to prevent damage of Driver IC please connect 2 μ F condenser to motor in a row(parallel connection) with power plug(+/-).

8-5.拿取马达时,尽可能的轻拿 Case 部分.

Please hold the case part lightly as much as you can when you use motors.

8-6.为保护 Drive IC, 请不要施加 DC 4.5V 以上.

Please do not use above DC 4.5V for preventing Driver IC.

8-7.马达接近磁性物质或接触时会降低马达性能, 因此避免接近强磁场.

Please avoid being near and contacting magnetic materials like magnet which might encounter functional problems.

8-8.能够自我吸附的物质 (铁, 粉末) 及灰尘等与马达混放时会出现转动不良, 异常音等, 会使马达的性能下降及信赖性受影响,因此取用及作业时应注意环境清洁.

If some materials(metal, powder) and dust become mixing condition in the motor it might cause feature declines by occurring rotation faulty and abnormal sound so please be clean the working environment and careful when you deal with the motor.

8-9.注意请不要浸泡在液态物质如 : 水或酒精中

Please be careful of not soaking in liquid like water or alcohol.

8-10.包装方法 : (参照包装图) 只有在客户要求下变更可能.

Packing method: Refer to packing drawing. But, it could be changed on user's demand.

8-11.无法保证满足本式样范围以外使用的情况.

It can't guarantee if the motors are used out of the range of fulfilling this specification.

8-12.本式样书内容的变更及追加是在双方协议下实施.

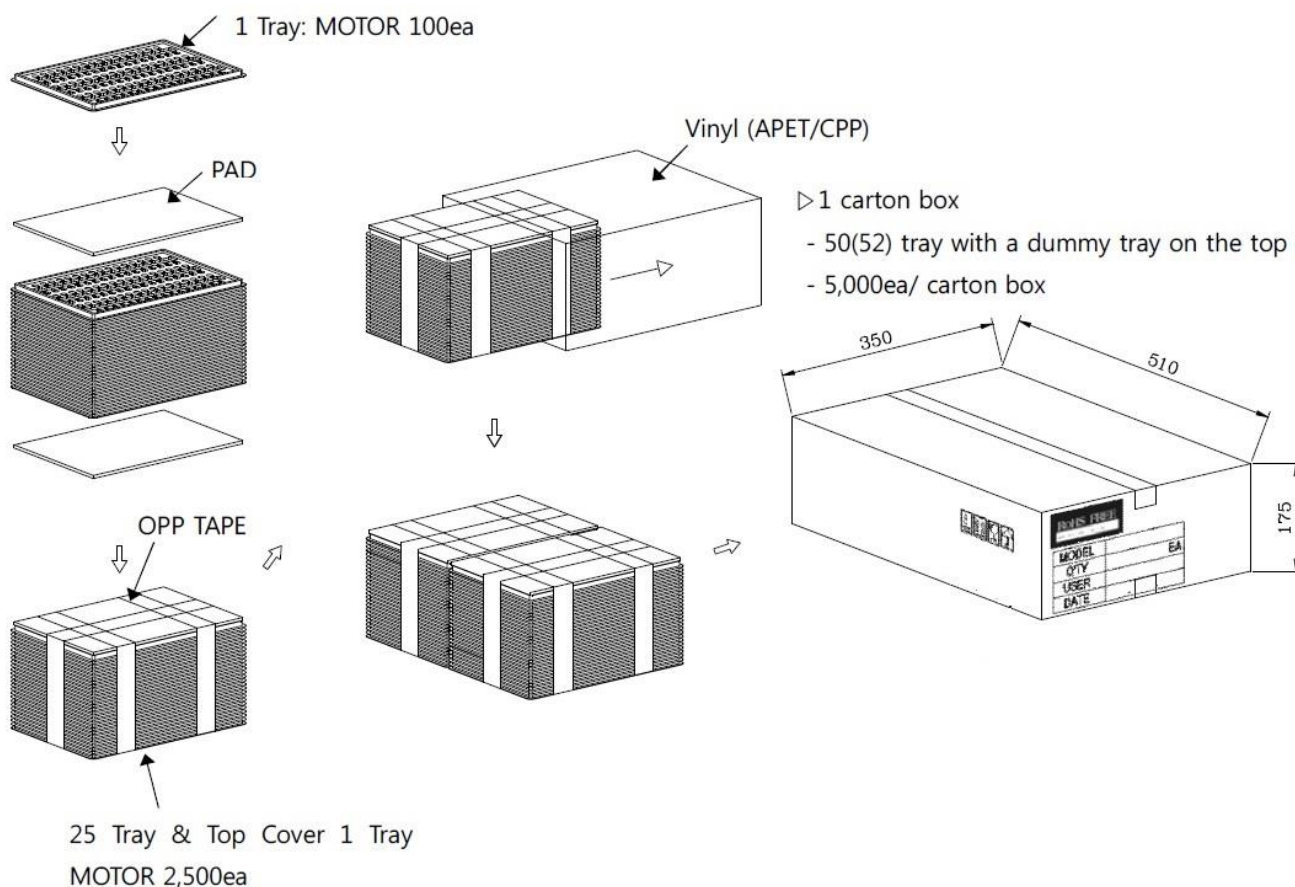
Any further conditions or change of this APPROVAL REQUEST take effect by mutual consent.

9. 包装(TBD) / PACKING (TBD)

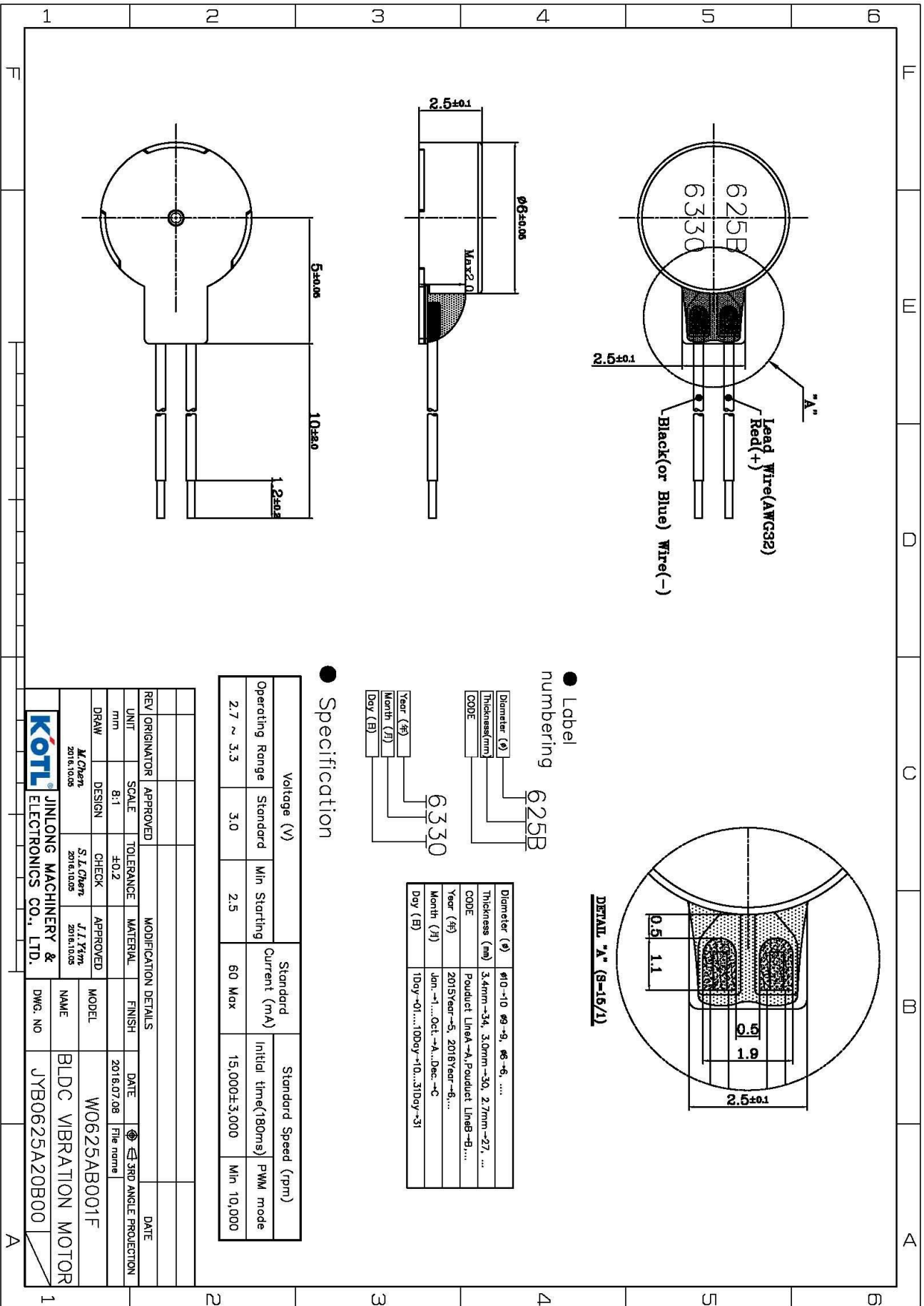
9.1 内, 外径包装规格 / The Packing Standard

项目/ Item	Spec			
	Material	Size (mm)	包装数量/ Packing Qty	包装后重量/Weight after packing
Tray 包装	PET	328 (L) × 240 (W) × 9.5 (H)	100ea Max	About 76 g
Out box 包装	DW-1	510 (L) × 350 (W) × 175 (H)	5,000ea Max	About 5.4 Kg

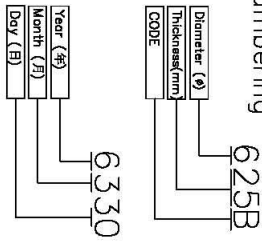
9.2 包装图 / Packing drawing



10. 外形图/ OUTLINE DRAWINGS



● Label numbering



Diameter (φ)	φ10 -10 φ9 -9, φ8 -8, ...
Thickness(mm)	3.4mm -34, 3.0mm -30, 2.7mm -27, ...
CODE	Product LineA--A, Product LineB--B, ...
Year (年)	2015Year -5, 2016Year -6, ...
Month (月)	Jan -1...Oct -A...Dec -C
Day (日)	1Day -01...10Day -10...31Day -31

● Specification

Operating Range	Standard	Min Starting	Standard Current (mA)	Standard Speed (rpm)	Initial time(180ms)	PWM mode
2.7 ~ 3.3	3.0	2.5	60 Max	15,000±3,000		Min 10,000

REV ORIGINATOR	APPROVED	MODIFICATION DETAILS		DATE
UNIT	SCALE	TOLERANCE	MATERIAL	FINISH
mm	8:1	±0.2		2016.07.08
DRAW	DESIGN	CHECK	APPROVED	3RD ANGLE PROJECTION
M.Chen 2016.10.05	S.L.Chen 2016.10.05	J.J.Yim 2016.10.05		
KOTL JINLONG MACHINERY & ELECTRONICS CO., LTD.			NAME	DATE
			W0625AB001F	
			BLDC VIBRATION MOTOR	
			DWG. NO	
			JYB0625A20B00	

11. 更改记录/ Records of Revision

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/1	2016.10.29	7	成品图纸喷码方法的修改	基准变更