

产 品 规 格 书

PRODUCT SPECIFICATION

客户名称 (Customer)				
项目名称 (Project)				
产品名称 (Name)		10B27.3018 振动马达		
编 号 (Number)		100614		
拟 制 (DRAWN)	校 对 (CHECK)	批 准 (APPROVE)	时 间 (DATE)	
			2011.10.10	

客户确认/Customer Approved	
签章/Signed	
日期/Date	

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NUMBER:

100614

ISSUE/ 版本	REASON FOR CHANGE/ 更改原因	DR./ 拟制	APPR./ 审核	DATE/ 日期
0	RELEASE FOR PRODUCTION/产品颁布			2011.10.10

MATERIAL or METHODS Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

Content (目 录)

- 1)Construction Form (结构形式)**
- 2)Standard Operating Condition (标准运行条件)**
- 3)Electrical Characteristics (电性能)**
- 4)Mechanical Specification (机械要求)**
- 5)Reliability Test (可靠性试验)**
- 6)Performance and Characteristics (性能与特性)**
- 7)Caution (注意事项)**
- 8)Packaging (包装)**
- 9)MECHANICAL DRAWING/机械图**

MATERIAL or METHODS

Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

1. Construction Form (结构形式)

No. 序号	ITEM 项目	Contents 内容
1-1	Motor Construction 电机结构	Φ10-Flat Coreless Vibration Motor 直径为 10mm 的扁平型无芯振动马达
1-2	Coil Construction 线圈结构	Flat Coreless Coil 扁平型无芯线圈
1-3	Rectifying Method 换向方式	Precious Brush and Commutator 贵金属电刷与换向器的换向

2. Standard Operating Condition (标准运行条件)

No. 序号	ITEM 项目	Contents 内容
2-1	Rated Voltage 额定电压	DC 3.0V
2-2	Rated Load 额定负荷	Vibration Weight 偏心锤 (内置)
2-3	Rotation Direction 旋转方向	CCW or CW 逆时针或顺时针方向
2-4	Motor Position	Any Position Available

MATERIAL or METHODS

Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

	电机安装位置	任何位置都可以
2-5	Voltage Range for Use 工作电压范围	DC 2.5~3.8V
2-6	Allowable Temperature Range 允许温度范围	Working Temperature: -30°C ~ +70°C 工作温度: -30°C ~ +70°C
2-7	Storage Environment 保存温度范围	-40°C ~ +80°C

3. Electrical Characteristics (电性能)

No. 序号	Item 项目	Measuring Condition 测试条件	Specification 规格
3-1	Rated Speed 额定转速	At Rated Voltage and Rated Load 额定电压及负荷下测试	11000 ± 3,000rpm
3-2	Rated Current 额定电流	At Rated Voltage and Rated Load 额定电压及负荷下测试	75mA or less 75 mA max
3-3	Starting Voltage 起动电压	At Rated Load and Step Voltage 额定负载及逐渐升高电压法测试	DC2.3V or less DC2.3V 以下
3-4	Insulation Resistance 绝缘电阻	DC100V between Lead wire and Case 引线及电机机身之间的绝缘电阻	10MΩ Min
3-5	Insulation Voltage	DC50V between Lead wire and Motor	No Destruction Occurs

MATERIAL or METHODS Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

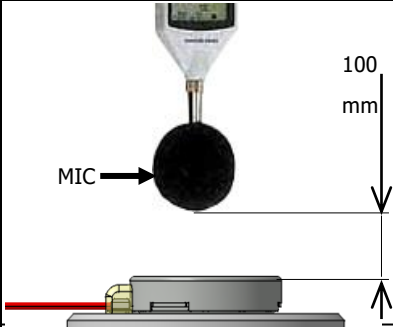
	绝缘电压	Case 引线 with 电机机身之间施加 DC50V 电压一分钟	不被击穿
3-6	Terminal Resistance 端子电阻	Measure between Terminals 端子间电阻	1phase: 28±15% 2phase: 56±15%
3-7	Starting Current 起动电流	At rated load and step voltage 额定负载及电压直投法条件下测试	120mA or less 120mA 以下

Add: Measuring Condition (测试条件)

1.Measuring Temperature: 25℃±2℃ 测试温度: 25℃±2℃

2.Measuring Relative Humidity: 45-75%RH 测试相对湿度: 45-75%RH

4. Mechanical Specification (机械要求)

No	Item 项目	Measuring Condition 测试条件	Specification 规格
4-1	Configuration 外观尺寸	Vernier-Calipers 游标卡尺	As Specified in Outline Drawing. 参考相关外形尺寸图。
4-2	Appearance 外观	Visual Examination 目测	Should be no Evidence of Mechanical Damage,Crack,Rust and Stain. 不得有明显的机械划痕, 裂缝, 锈迹, 污点。
4-3	Weight 重量	Balance 天平	1.2g Approx 约 1.2g
	Mechanical Noise 机械噪音		50dB(A) Max (在 Motor 表面 100mm 处,3.0V) 将电机固定, 使其保持不动。

TITLE: MOTOR VIBRATOR, 10 Dia

Page 6 of 9

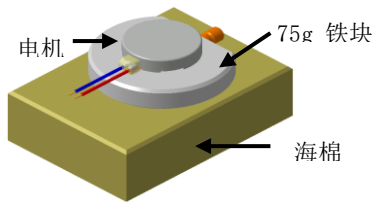
MATERIAL or METHODS Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

4-4		At Rated Voltage and Rated Load back ground Noise:28dB 额定电压及负荷下测试背景噪音 不超过 28 分贝。	
4-5	Vibration Test 振动量测定	 <p>模型块:75g 测定装置:VM-83</p>	1.0G(AVG) (Vm=DC 3.0V)
4-6	Down-lead' s loose Strength 引线抗拉强度		9.8N or More 9.8N 以上

5. Reliability Test (可靠性试验)

No. 序号	ITEM 项目	Contents 内容
5-1	Life Test 寿命测试	1)Voltage: DC3.0V 测试电压: DC3.0V 2)Load: Vibrator 负荷:偏心锤 3)Temperature: 20°C±2°C 温度: 20°C±2°C 4)Relative Humidity: 60-70%RH 相对湿度: 60-70%RH Test Mode: Turn On the Motor for1sec and than stop for 2sec, 50,000 Cycle. 测试方式: 开 1 秒, 停 2 秒, 运行 50,000 次。
5-2	High Temperature Exposure 高温放置	Exposure to 70°C±2°C for 72hours, then return to Ordinary Temperature and Humidity for 2hours. 在温度 70°C±2°C条件下放置 72 小时后, 在正常温度和湿度下放置 2 小时。
5-3	Low Temperature Exposure 低温放置	Exposure to -30 °C for 72hours, then return to Ordinary Temperature and Humidity for 2hours. 在温度-30°C条件下放置 72 小时后, 在正常温度和湿度下放置 2 小时。
5-4	Humidity Test 湿度测试	Exposure to 40°C±2°C,90-95%RH(Relative Humidity) for 72hours, then return to Ordinary Temperature and Humidity for 2hours. 在温度40°C±2°C,90%RH(相对湿度)条件下放置72小时后, 在正常温度和湿度下放置2小时。

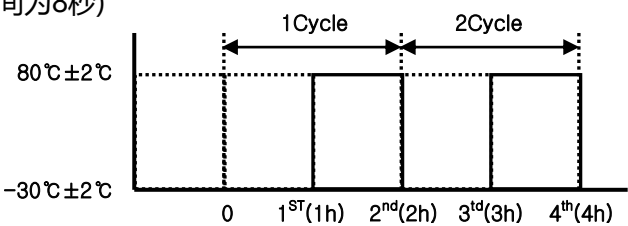
MATERIAL or METHODS Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

5-5	Temperature Cycle Test 温度循环测试	<p>Exposure to Heat test condition underline for 15time, then return to Ordinary Temperature and Humidity for 2hours. 在下列测试条件下循环15次后, 在正常温度和湿度下放置4小时。(转换温度时间为8秒)</p> 
5-6	Vibration Test 震动试验	<p>Vibration with 3mm, 10Hz-55Hz-10Hz per minute, X-Y-Z each direction for 10Minutes at Standard packing condition. 正常包装情况下, 每分钟10Hz-55Hz-10Hz循环, 振幅1.5mm条件下沿X-Y-Z 三个方向各振动10分钟。</p>
5-7	Drop Test 跌落试验	<p>Set the Motor to approximately 80gf (Including the package) weight of Block, Free drop by X-Y-Z directions 3 time each from height of 1.5M onto The concrete floor. 将电机固定在约80gf (包括包装) 的重块, 从1.5M的高度自由跌落到水泥地面,X-Y-Z三个方向各进行3次。</p>

6. Performance and Characteristics (性能与特性)

Should be satisfied with the requirements of table1 after Reliability test 5-1-5-7.

通过以上可靠性试验 5-1-5-7 以后应满足表 1 的要求。

表 1: 评估表

No. 序号	ITEM 项目	Contents 内容
6-1	Rated Current 额定电流	Initial Data: $\pm 30\%$ Max 最大不超过初始值的 $\pm 30\%$

MATERIAL or METHODS Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

6-2	Rated Speed 额定转速	Initial Data: $\pm 30\%$ Max 最大不超过初始值的 $\pm 30\%$
6-3	Life Test 寿命测试	Initial Data: $\pm 50\%$ Max 最大不超过初始值的 $\pm 50\%$
6-4	Starting Voltage 起动电压	DC 2.3V Max 最大不超过 DC2.3V
6-5	Others 其它	1)Should not fail in starting 应正常启动 2)Should not be unusual mechanical noise 无异常噪音

7. Cautions (注意事项)

1)Allowable Range for Use 工作范围

Pay attention to Voltage and Current ranges for use, and Use the vibration motor in the Condition accordance with this specifications, or else the life and performance should be considerably reduced.

注意电压及电流的使用范围，并且要按本规格书的要求使用电机，否则电机的使用寿命和性能将发生显著的下降。

2)Storage 储存

Standard Storage Temperature: $-5-30^{\circ}\text{C}$

Standard Storage Relative Humidity: $\leq 75\%$

Avoids Storing in high temperature, High humidity or corrosive Gas Environment.

标准储存温度: $-5-30^{\circ}\text{C}$

标准储存相对湿度: $\leq 75\%$

避免放置在温度，潮湿及有腐蚀性气体的环境中。

3)Handling of Motor 电机使用

~~Do not press the product with more than 0.5Kgf or drop it, It can cause the~~

TITLE: MOTOR VIBRATOR, 10 Diam \times 2.7Housing Length

Page 9 of 9

MATERIAL or METHODS Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

transformation of performance or external appearance.

不许在电机上面施加0.5Kgfl以上的压力或使其跌落，这样可能会影响其性能或使外观发生变形。

Do not drop into fluid. (such as Water, Alcohol, etc.)

要防止与液体接触。(水，酒精，等)

Do not expose this product to high temperature for extended periods of time, It may cause a decline in performance.

长时间放置在高温环境时有可能影响其电机的性能。

Please refrain from operating the Motors near Magnetic devices.

要避免放置在磁性物体附近。

The motor may cause slight electronic noise due to the contact between brush and Commutator.

由于电刷与整流子的接触电机有可能发生微弱的电子噪音。

8. Packing (包装)

1)Pack 4,000pcs standards in Outer box. (350L×260W×230H)

外包装箱包装 4,000 只标准品。(箱体规格为 350 长×260 宽×230 高)

2)The Inner box is 50pcs standards, One circle is 1,000pcs standards of 20 inner boxes, A outer box is 4 point circles 4,000pcs standard.

每个内包装盒包装 50 只产品，一捆为 20 盒 1,000 只标准品，一箱为 4 匝 4,000 只标准品。

3)Every Outer box attaches a Parking list, Certificate of quality.

每个外包装箱内装入一张装箱单及合格证。

4)Name of an Article of sign, Type, Quantity, Weight, Factory Name outside the Box.

箱外侧标识品名，型号，数量，重量，厂名。

MATERIAL or METHODS Specifications

ISSUE: 0

MODEL:10B27.3018

NUMBER:

100614

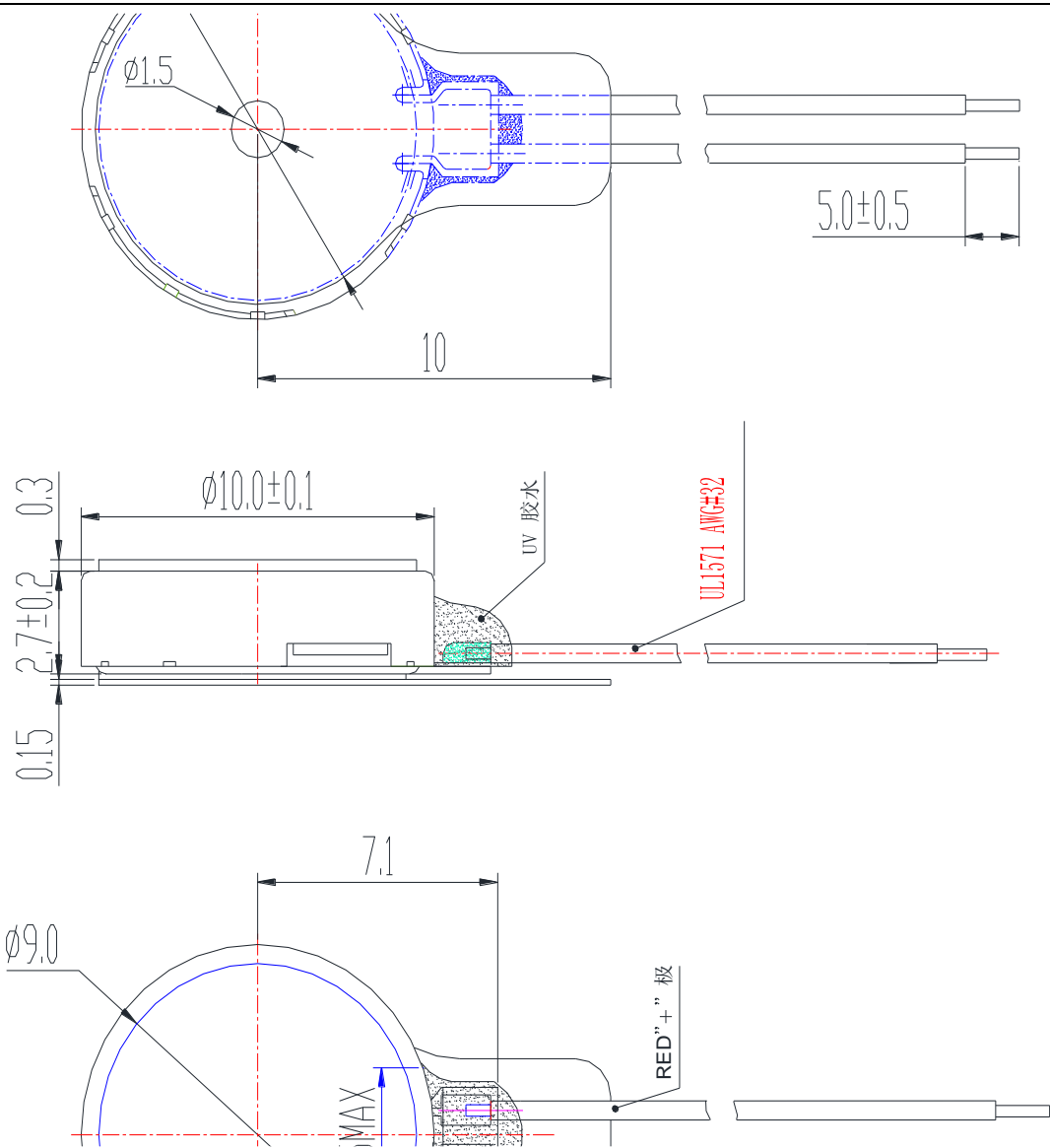
9 MECHANICAL DRAWING/机械图

9-1 Material Lead/导线材质: UL AWM 1571 AWG32

MATERIAL or METHODS
Specifications

ISSUE: 0
NUMBER:

MODEL:10B27.3018
100614



图表 1

Figure 1 Motor Housing Configuration

图 1 电机外形结构图