	<b>SPECIFICATION</b>	PRODUCT	SMT VIBRATOR MOTOR
		MODEL	LD-GS-3205
		REVISION NO.	REV.00

# 立得微电子（惠州）有限公司

Leader Micro Electronics (Huizhou) Co., Ltd.

## 产品规格说明书

### PRODUCT SPECIFICATION

<b>客户信息</b> Customer Information	客户名称/Customer	
	客户料号/Part No.	
	客户承认签/Customer Apprroved Signatures	

<b>产品信息</b> Product Information	文件编号/Spec No.	<b>LEADER-GS-3205</b>	
	品名/Description	<b>SMT Motor</b>	
	规格型号/Model	<b>LD-GS-3205</b>	
	日期/Date	<b>2019.04.13</b>	
	编制/Designed	审核/checked	批准/Approved
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		REVISION NO.	REV.00

## 规格书目录

### Specification Conten

No.	规格书内容/Specification content	Page
1	应用/ Applications	4/15
2	使用条件/Standard Operating conditions	4/15
3	测试条件/Measuring conditions	4/15
4	机械特性/Mechanical characteristics	5/15
5	电气性能/Electrical characteristics	6/15
6	可靠性试验/Reliability Test	6/15-10/15
7	可靠性试验后要求/Requirement After Reliable Test	11/15
8	印字标准/Lot manage	11/15
9	包装要求/Packing Require	12/15
10	注意事项/Cautions	14/15
11	电机外形图/Motor outline drawing	15/15



 	<b>SPECIFICATION</b>	PRODUCT	SMT VIBRATOR MOTOR
		MODEL	LD-GS-3205
		REVISION NO.	REV.00

### 1. 应用/ Applications

2. 本规格书适用于 LEADER 公司提供的 LD-GS-3205 型直流铁芯振动电机。



This specification can apply to model LD-GS-3205 DC core vibration motor, provided by LEADER.

### 2. 使用条件/Standard Operating conditions

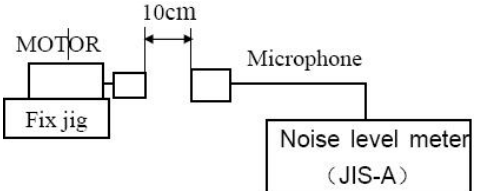
No	项目/Item	规格/Specifications
2-1	额定电压/Rated voltage	2.7V
2-2	工作电压范围/Operating voltage range	2.3-3.2V
2-3	电机位置/Motor position	All position
2-4	额定负荷/Rated Load	Counterweight (R1.7*L2.8)
2-5	旋转/Rotation	C.W
2-6	操作环境/Operating environment	-20℃ ~ +70℃ (0~95%RH)
2-7	储存环境/Storage environment	-40℃ ~ +85℃ (0~95%RH)



### 3. 测试条件/Measuring conditions

No	项目/Item	规格/Specifications
3-1	常温/Normal temperature	20℃ ± 2℃
3-2	正常湿度/Normal humidity	65 ± 5%
3-3	参考温度/Temperature for reference	5℃ ~ 35℃
3-4	参考湿度/Humidity for reference	30% ~ 90%
3-5	测试时电机位置 Motor position when testing	电机轴水平 Motor shaft horizontal

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		MODEL	LD-GS-3205
		REVISION NO.	REV.00

#### 4. 机械特性/Mechanical characteristics

No	项目/Item	规格 Specifications	条件/Conditions
4-1	外观/Appearance	目测/Visual	无划痕、锈迹、污渍和凹痕/No scar, rust, stain and dent
4-2	重量/Weight	0.6g	
4-3	CW 拔出强度 /Pull-out strength of cw	3 Kg Min	
4-4	轴向间隙/Axial play of shaft	0.3 mm Max	
4-5	振动力 (参考) Vibration force (reference)	0.35G with 100g Jig	在额定电压和负载下/Under rated voltage and load
4-6	上升时间/Rise time characteristics	0.2S Max	Counterweight rotates by impression of standard voltage
4-7	机械噪音 Mechanical noise	45dB Max (Background noise: 25dB Max)	<p>Measure at rated voltage and rated load (counterweight), according to shaft direction the distance between microphone and motor is 10cm.</p> 



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		MODEL	LD-GS-3205
		REVISION NO.	REV.00

### 5. 电气性能/Electrical characteristics

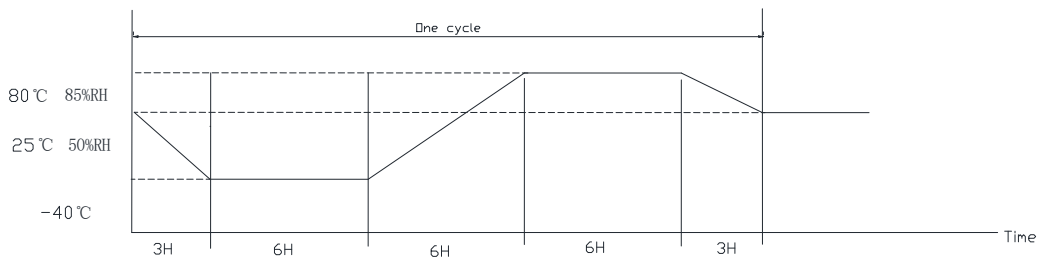
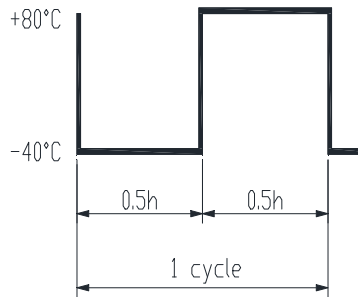
No	项目/Item	规格/Specifications
5-1	额定电压/Rated voltage	2.7V
5-2	额定电流/Rated current	75mA Max
5-3	额定转速/Rated speed	14000±3000rpm
5-4	启动电流/Starting current	90mA Max
5-5	启动电压/Starting voltage	2.3V Max
5-6	终端电阻/Terminal resistance	33±6Ω
5-7	绝缘电阻/Insulation resistance	1MΩ Min (在 50V DC 下)



### 6. 可靠性试验/Reliability test

No	项目/Item	规格/Specifications
6-1	高温储存试验 /High temperature storage test	. 温度/Temperature:80±2℃ . 持续时间/Duration:96hrs . 标准/Criterion:转速和其他参数必须在规定范围内, 试验后放置 4h 进行测试。 RPM and other parameters must be within spec defined. The measurement is conducted after 4hours of recovery after test.

 	<b>SPECIFICATION</b>	PRODUCT	SMT VIBRATOR MOTOR
		MODEL	LD-GS-3205
		REVISION NO.	REV.00



6-2	低温储存试验/ Low temperature storage test	<p>. 温度/Temperature: <math>-40 \pm 2^{\circ}\text{C}</math> . 持续时间/Duration: 96hrs</p> <p>. 标准/Criterion: 转速和其他参数必须在规定范围内, 试验后放置 4h 进行测试。</p> <p>RPM and other parameters must be within spec defined.</p> <p>The measurement is conducted after 4hours of recovery after test.</p>
6-3	热冲击 Heat stock test	<p>. 温度/Temperature : <math>-40^{\circ}\text{C} \sim 80^{\circ}\text{C}</math></p> <p>. 时间/Time: 0.5h</p> <p>. 循环次数/Circle cycle: 50cycles</p> <p>. 标准/Criterion: 转速和其他参数必须在规定范围内, 试验后放置 4h 进行测试。</p> <p>RPM and other parameters must be within spec defined.</p> <p>The measurement is conducted after 4hours of recovery after test.</p>
6-4	高低温湿度循环试验 High/ Low temperature humidity cycle test	<p>温度/Temperature: <math>-40^{\circ}\text{C} &lt;-&gt; 80^{\circ}\text{C}</math> 湿度/ Humidity: 85%</p> <p>循环次数/Circle cycle: 6cycles</p> <p>标准/Criterion: RPM and other parameters must be Within spec defined. The measurement is conducted after 4hours of recovery after test</p>





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		REVISION NO.	REV.00

6-4	自由跌落 Free fall	<p>. 高度/High: 1.5m</p> <p>. 次数/Times: 15 times</p> <p>. 地面/Floor: steel</p> <p>. 标准/Criterion: 转速和其他参数必须在规定范围内。</p> <p>. RPM and other parameters must be within spec defined.</p>
6-5	寿命试验 /Lift test	<p>. 电压/Voltage: 3.0V DC</p> <p>. 温湿度/Temperature&amp; humidity: 25±3℃, RH 50%</p> <p>. 将电机锁在测试夹具中（轴水平）Lock the motor in a test fixture (Shaft horizontal)</p> <p>. 测试模式/Test mode: 2.5 s on 2.5 soff; 100,000 cycles, continue test to 300,000 cycles.</p> <p>. 标准/Criterion: 100,000 次循环后, 所有参数必须在规定范围内, 300,000 次循环后马达应运行。</p> <p>After 100,000 cycles, all parameters must be within spec defined.</p> <p>After 300,000 cycles: The vibrator should operate.</p> <p>. 标准/Criterion: 转速和其他参数必须在规定范围内, 试验后放置 4h 进行测试。</p> <p>RPM and other parameters must be within spec defined.</p> <p>The measurement is conducted after 4hours of recovery after test.</p>





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		REVISION NO.	REV.00

6-6	低温寿命  Low  temperature  life test	<p>. 测试条件/Test condition: 使用额定电压驱动振动电机并设置 2.5 s on 2.5 soff .</p> <p>. Use the rated voltage to driving the vibrator motor and setting the on/off time to 2.5 s on 2.5 soff .</p> <p>. 测试环境/Test environmental: 温度 -20℃.</p> <p>. 试验次数/Test cycle: 53,000 cycles.</p> <p>. 检查次数/Check cycle: 每 20,000 cycles 测试所有马达性能。</p> <p>(应符合马达规格)。 Every 20,000 cycles to measure the all electrical characteristic.</p> <p>(Should be meet vibrator motor specification).</p> <p>. 标准/Criterion: 转速和其他参数必须在规定范围内, 试验后放置 4h 进行测试。</p> <p>. RPM and other parameters must be within spec defined.</p> <p>The measurement is conducted after 4hours of recovery after test.</p>
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		REVISION NO.	REV.00

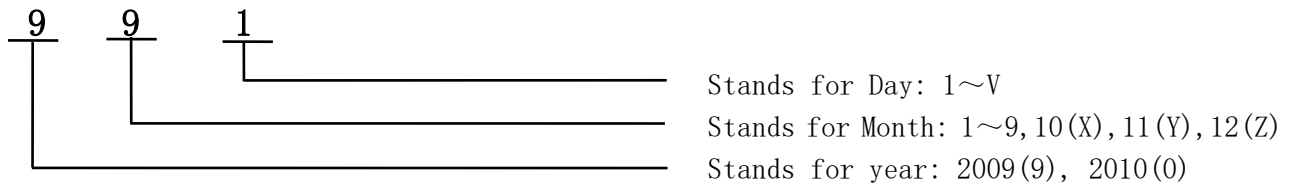
6-7	湿度试验 /Humidity test	<p>温度/Temperature: <math>+40 \pm 5^{\circ}\text{C}</math>;</p> <p>时间/Time: 96h</p> <p>湿度/Humidity: <math>90 \pm 5\%RH</math></p> <p>. 标准/Criterion: 转速和其他参数必须在规定范围内, 试验后放置 4h 进行测试。</p> <p>RPM and other parameters must be within spec defined.</p> <p>,The measurement is conducted after 4hours of recovery after test.</p>
6-8	冲击试验 /Shock test	<p>. 加速度/Acceleration: half-sinusoidal 500G</p> <p>. 持续时间/Duration time: 2ms</p> <p>. 测试时间/面/Test time/face: 3 time/6 faces. total 18 times. 3 次/6 个面。 共 18 次。</p> <p>. 标准/Criterion: 转速和其他参数必须在规定范围内, 试验后放置 4h 进行测试。</p> <p>RPM and other parameters must be within spec defined.</p> <p>,The measurement is conducted after 4hours of recovery after test.</p>

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		REVISION NO.	REV.00



### 7. 可靠性试验后要求/Requirement After Reliable Test

No	项目/Item	规格/Specification
10-1	额定转速/Rated speed	初始值/Initial data $\pm 30\%$
10-2	额定电流/Rated Current	初始值/Initial data $\pm 30\%$
10-3	启动电压/Starting voltage	$\leq 2.3V$

### 8. 印字要求/Lot manage

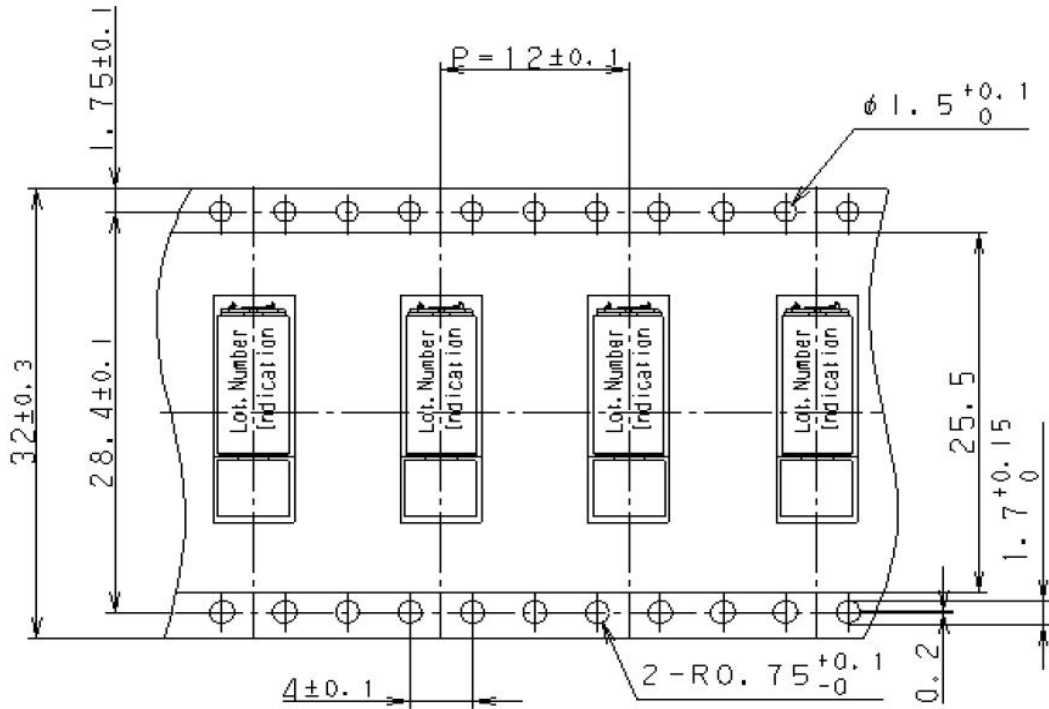


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Print	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G
day	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Print	H	E	J	K	L	M	N	O	P	Q	R	S	T	U	V	

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		MODEL	LD-GS-3205
		REVISION NO.	REV.00

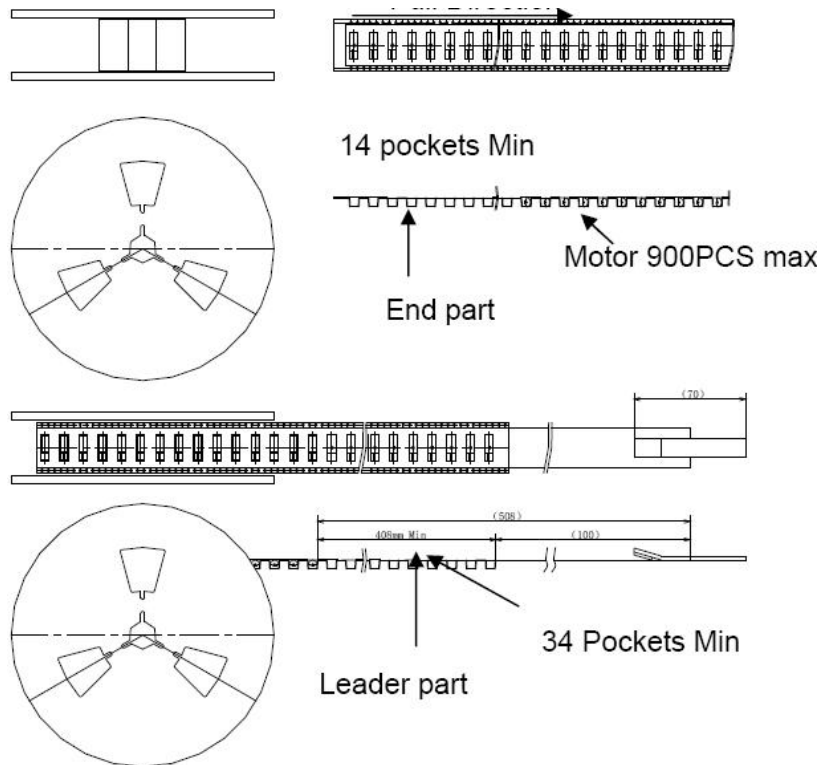
## 9. 包装 Packing



### 9-1 最小包装要求/ Smallest packing



### 9-2 卷盘包装条件/Reel packing condition

Pull Direction



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		REVISION NO.	REV.00

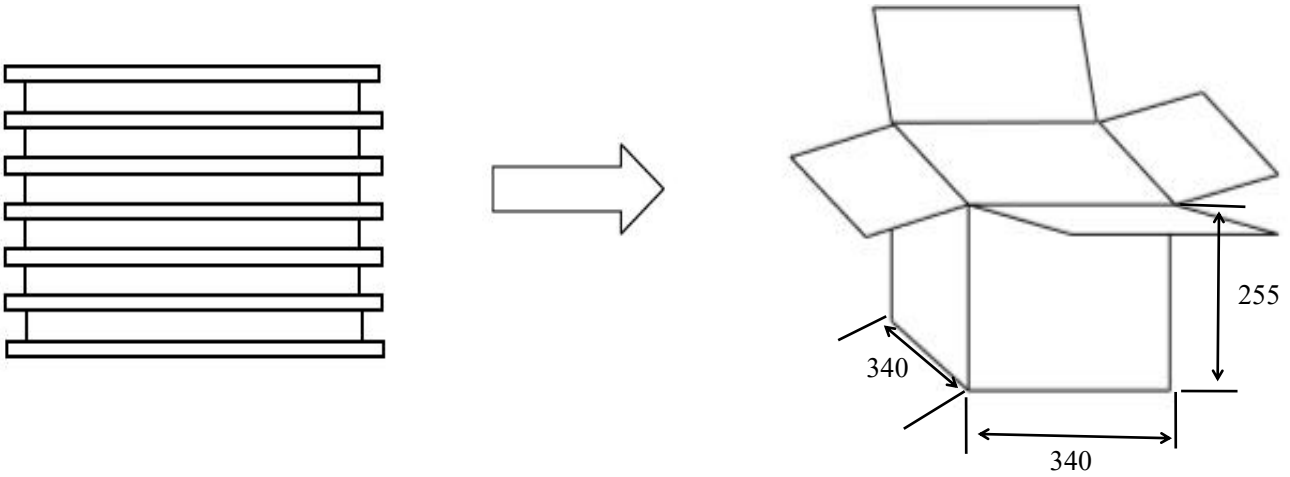
9-3 最终包装条件/Final Packing Condition



纸箱使用双层瓦楞纸板

Double wall corrugated

cardboard (external dimension)

The most: 1000pcs/1 reel × 6 reel = 6000pcs



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## 10. 注意事项/ Cautions

10-1 Whatever item not stated in this specification will not be guaranteed.

10-2 Do not subject the motor under locked condition for a long time.

10-3 Out-going test data will be attached (n~35) for:

Loaded rotation

Loaded current

Lock current

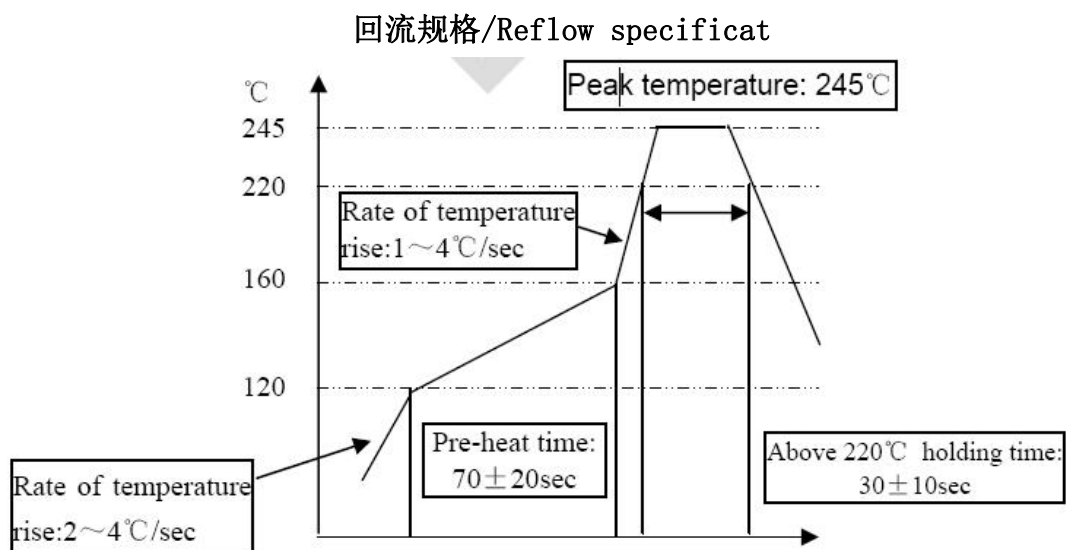
Starting voltage

Wiring resistance



10-4 The product can compliant with AWA requirement of HS management completely.

10-5 The inspection after reflow is implemented in production process.

10-6 Recommending reflow profile for Pb-free soldering.



. Peak temperature maximum 260°C/5sec

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## 11. 电机外形图/Motor outline drawing

