



中国认可
国际互认
检测
TESTING
CNAS L3767

检测报告

Test Report

报告编号 (Report No.): RTN-UN-1604-014

样品名称: 锂离子电池

Sample Name: Li-ion battery

样品型号: 642842

Sample Model: 642842

委托单位: 东莞新能源科技有限公司

Consignor: Dongguan Amperex Technology Limited

东莞新能源科技有限公司测试中心

Dongguan Amperex Technology Limited Test Center

样品名称 Sample name	锂离子电池 Li-ion battery	测试类别 Test category	委托检测 After testing
样品型号 Sample model	642842	样品接收日期 Accepted date	2016-04-15
样品规格 Sample specification	3.82V 4.0Wh	测试开始日期 Test start date	2016-04-15
样品数量(个) Sample quantity(pcs)	35	测试结束日期 Test end date	2016-05-04
委托单位 Consignor	东莞新能源科技有限公司 Dongguan Amperex Technology Limited		
委托单位地址 Consignor address	中国广东省东莞市松山湖科技园工业西路1号 West Industrial Road 1#, Songshan Lake Industry Park, Dongguan City, Guangdong Province, P. R. China		
制造商 Manufacturer	同委托单位 To entrust unit		
制造商地址 Manufacturer address	同委托单位地址 To entrust unit address		
测试环境条件 Test environment condition	环境温度: 15℃ - 25℃; 环境湿度: 45%~75% Ambient temperature: 15℃ - 25℃; Ambient humidity: 45%~75%		
样品外观 Appearance	银色尼龙/铝/聚丙烯复合膜 Silver nylon/Al/PP compound film		
测试方法和判定标准 Test method and criterion	联合国《关于危险货物运输的建议书 试验和标准手册》 ST/SG/AC.10/11 Rev5, amend 2, 38.3 UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev5, amend 2, 38.3		
测试项目 Test items	高度模拟、温度试验、振动、冲击、外部短路、挤压、强制放电 Altitude simulation, Thermal test, Vibration, Shock, External short circuit, Crush, Forced discharge		
测试结论 Conclusion	经测试, 该样品符合联合国《关于危险货物运输的建议书 试验和标准手册》 ST/SG/AC.10/11 Rev5, amend 2, 38.3 标准的要求 The sample has passed the test items of UNITED NATIONS "Recommendations on the TRANSPORT OF DANGEROUS GOODS" Manual of Tests and Criteria ST/SG/AC.10/11 Rev5, amend 2, 38.3		
测试人员 Testers	孙凯旋 2016.5.5 黎平彪 2016.5.5 王绪成 2016.5.5		
编制人员 Compiler	陈雅 2016.5.5		
审核 Checker	2016.5.6		
批准 Approval	2016.5.6 蔡京晶: 技术负责人 Cai JingJing: Technical Director 郭佳丽: 中心主任 Guo Jiali: Center Director		

东莞新能源科技有限公司
测试中心
Dongguan Amperex
Technology Limited Test Center
(签章)
(signature)

序号 No.	测试项目名称 Name of test	标准要求或标准条款号 Standard requirement or the clause number of standard	测试结果 Test result	本项结论 Test conclusion	备注 Remark	
1	高度模拟 Altitude simulation	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T1; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.5, amend 2, 38.3 Test 1	见附表 1 See Appendix 1	合格 Passed	/	
2	温度试验 Thermal	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T2; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.5, amend 2, 38.3 Test 2	见附表 2 See Appendix 2	合格 Passed	/	
3	振动 Vibration	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T3; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.5, amend 2, 38.3 Test 3	见附表 3 See Appendix 3	合格 Passed	/	
4	冲击 Shock	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T4; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.5, amend 2, 38.3 Test 4	见附表 4 See Appendix 4	合格 Passed	/	
5	外部短路 External short-circuit	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T5; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.5, amend 2, 38.3 Test 5	见附表 5 See Appendix 5	合格 Passed	/	
6	挤压/撞击 Crush/Impact	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T6; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.5, amend 2, 38.3 Test 6	见附表 6 See Appendix 6	合格 Passed	/	
7	过度充电 Overcharge	/	/	/	无须测试 unnecessary	
8	强制放电 Forced discharge	联合国《关于危险货物运输的建议书 试验和标准手册》试验 T8; UN Manual of Test and Criteria ST/SG/AC.10/11/Rev.5, amend 2, 38.3 Test 8	见附表 8 See Appendix 8	合格 Passed	/	
分包测试情况 Subcontracted test condition		测试项目 Test items	/			
		分包实验室 Subcontracted Laboratory	名称 Name	/	邮编 Post code	/
			地址 Address	/	电话 Tel.	/

序号 No.	1	测试项目名称 Name of test items		高度模拟 Altitude simulation				
样品编号 Sample No.	样品状态 Sample status	测试前 Before test		测试后 After test		质量损失 Mass loss (%)	剩余电压 Residual OCV (%)	测试结果 Test result
		电池质量 m_1 (g)	开路电压 U_1 (V)	电池质量 m_2 (g)	开路电压 U_2 (V)			
02163A120434	首次完全充电 1cyc fully charged	14.9951	4.381	14.9947	4.380	0.00%	99.98%	O
02163A120482	首次完全充电 1cyc fully charged	14.9415	4.379	14.9413	4.378	0.00%	99.98%	O
02163A120410	首次完全充电 1cyc fully charged	14.9937	4.381	14.9947	4.380	-0.01%	99.98%	O
02163A120104	首次完全充电 1cyc fully charged	14.9295	4.380	14.9296	4.379	0.00%	99.98%	O
02163A120307	首次完全充电 1cyc fully charged	14.7614	4.380	14.7612	4.379	0.00%	99.98%	O
02163A120317	首次完全充电 1cyc fully charged	14.8719	4.380	14.8719	4.379	0.00%	99.98%	O
02163A120645	首次完全充电 1cyc fully charged	14.9378	4.379	14.9378	4.378	0.00%	99.98%	O
02163A120732	首次完全充电 1cyc fully charged	14.9713	4.381	14.9707	4.380	0.00%	99.98%	O
02163A120096	首次完全充电 1cyc fully charged	15.0226	4.380	15.0225	4.379	0.00%	99.98%	O
02163A120744	首次完全充电 1cyc fully charged	14.9770	4.381	14.9768	4.380	0.00%	99.98%	O
以下空白								

注: L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏, 无排气, 无解体, 无破裂, 无起火。

Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No leakage, no venting, no disassembly, no rupture & no fire.

序号 No.	2	测试项目名称 Name of test items		温度试验 Thermal test				
样品编号 Sample No.	样品状态 Sample status	测试前 Before test		测试后 After test		质量损失 Mass loss (%)	剩余电压 Residual OCV (%)	测试结果 Test result
		电池质量 m_1 (g)	开路电压 U_1 (V)	电池质量 m_2 (g)	开路电压 U_2 (V)			
02163A120434	首次完全充电 1cyc fully charged	14.9947	4.380	14.9944	4.297	0.00%	98.11%	O
02163A120482	首次完全充电 1cyc fully charged	14.9413	4.378	14.9411	4.295	0.00%	98.10%	O
02163A120410	首次完全充电 1cyc fully charged	14.9947	4.380	14.9943	4.297	0.00%	98.11%	O
02163A120104	首次完全充电 1cyc fully charged	14.9296	4.379	14.9293	4.298	0.00%	98.15%	O
02163A120307	首次完全充电 1cyc fully charged	14.7612	4.379	14.7608	4.294	0.00%	98.06%	O
02163A120317	首次完全充电 1cyc fully charged	14.8719	4.379	14.8713	4.291	0.00%	97.99%	O
02163A120645	首次完全充电 1cyc fully charged	14.9378	4.378	14.9373	4.296	0.00%	98.13%	O
02163A120732	首次完全充电 1cyc fully charged	14.9707	4.380	14.9704	4.298	0.00%	98.13%	O
02163A120096	首次完全充电 1cyc fully charged	15.0225	4.379	15.0221	4.297	0.00%	98.13%	O
02163A120744	首次完全充电 1cyc fully charged	14.9768	4.380	14.9761	4.300	0.00%	98.17%	O
以下空白								

注：L-泄漏；V-排气；D-解体；R-破裂；F-起火；O-无泄漏，无排气，无解体，无破裂，无起火。
 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No leakage, no venting, no disassembly, no rupture & no fire.

序号 No.	3	测试项目名称 Name of test items		振动 Vibration				
样品编号 Sample No.	样品状态 Sample status	测试前 Before test		测试后 After test		质量损失 Mass loss (%)	剩余电压 Residual OCV (%)	测试结果 Test result
		电池质量 m_1 (g)	开路电压 U_1 (V)	电池质量 m_2 (g)	开路电压 U_2 (V)			
02163A120434	首次完全充电 1cyc fully charged	14.9944	4.297	14.9942	4.295	0.00%	99.95%	O
02163A120482	首次完全充电 1cyc fully charged	14.9411	4.295	14.9406	4.293	0.00%	99.95%	O
02163A120410	首次完全充电 1cyc fully charged	14.9943	4.297	14.9937	4.296	0.00%	99.98%	O
02163A120104	首次完全充电 1cyc fully charged	14.9293	4.298	14.9285	4.296	0.01%	99.95%	O
02163A120307	首次完全充电 1cyc fully charged	14.7608	4.294	14.7604	4.291	0.00%	99.93%	O
02163A120317	首次完全充电 1cyc fully charged	14.8713	4.291	14.8705	4.288	0.01%	99.93%	O
02163A120645	首次完全充电 1cyc fully charged	14.9373	4.296	14.9367	4.294	0.00%	99.95%	O
02163A120732	首次完全充电 1cyc fully charged	14.9704	4.298	14.9697	4.296	0.00%	99.95%	O
02163A120096	首次完全充电 1cyc fully charged	15.0221	4.297	15.0218	4.295	0.00%	99.95%	O
02163A120744	首次完全充电 1cyc fully charged	14.9761	4.300	14.9757	4.297	0.00%	99.93%	O
以下空白								

注: L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏, 无排气, 无解体, 无破裂, 无起火。

Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No leakage, no venting, no disassembly, no rupture & no fire.

序号 No.	4	测试项目名称 Name of test items		冲击 Shock				
样品编号 Sample No.	样品状态 Sample status	测试前 Before test		测试后 After test		质量损失 Mass loss (%)	剩余电压 Residual OCV (%)	测试结果 Test result
		电池质量 m_1 (g)	开路电压 U_1 (V)	电池质量 m_2 (g)	开路电压 U_2 (V)			
02163A120434	首次完全充电 1cyc fully charged	14.9942	4.295	14.9937	4.294	0.00%	99.98%	O
02163A120482	首次完全充电 1cyc fully charged	14.9406	4.293	14.9403	4.292	0.00%	99.98%	O
02163A120410	首次完全充电 1cyc fully charged	14.9937	4.296	14.9934	4.295	0.00%	99.98%	O
02163A120104	首次完全充电 1cyc fully charged	14.9285	4.296	14.9284	4.296	0.00%	100.00%	O
02163A120307	首次完全充电 1cyc fully charged	14.7604	4.291	14.7601	4.290	0.00%	99.98%	O
02163A120317	首次完全充电 1cyc fully charged	14.8705	4.288	14.8703	4.288	0.00%	100.00%	O
02163A120645	首次完全充电 1cyc fully charged	14.9367	4.294	14.9369	4.294	0.00%	100.00%	O
02163A120732	首次完全充电 1cyc fully charged	14.9697	4.296	14.9696	4.295	0.00%	99.98%	O
02163A120096	首次完全充电 1cyc fully charged	15.0218	4.295	15.0215	4.295	0.00%	100.00%	O
02163A120744	首次完全充电 1cyc fully charged	14.9757	4.297	14.9754	4.297	0.00%	100.00%	O
以下空白								

注: L-泄漏; V-排气; D-解体; R-破裂; F-起火; O-无泄漏, 无排气, 无解体, 无破裂, 无起火。
 Note: L-Leakage, V-Venting, D-Disassembly, R-Rupture, F-Fire, O- No leakage, no venting, no disassembly, no rupture & no fire.

序号 No.	5	测试项目名称 Name of test items	外部短路 External short circuit		
样品编号 Sample No.	样品状态 Sample status	样品表面最高温度 Max. External Temperature (℃)	测试结果 Test result	备注 Remark	
02163A120434	首次完全充电 1cyc fully charged	110.5	O	/	
02163A120482	首次完全充电 1cyc fully charged	100.8	O	/	
02163A120410	首次完全充电 1cyc fully charged	101.5	O	/	
02163A120104	首次完全充电 1cyc fully charged	110.2	O	/	
02163A120307	首次完全充电 1cyc fully charged	99.2	O	/	
02163A120317	首次完全充电 1cyc fully charged	105.1	O	/	
02163A120645	首次完全充电 1cyc fully charged	102.0	O	/	
02163A120732	首次完全充电 1cyc fully charged	106.7	O	/	
02163A120096	首次完全充电 1cyc fully charged	109.3	O	/	
02163A120744	首次完全充电 1cyc fully charged	106.7	O	/	
以下空白					
注: D-解体; R-破裂; F-起火; O-无解体, 无破裂, 无起火。 Note: D-Disassembly, R-Rupture, F-Fire, O- No disassembly, no rupture & no fire.					

[illegible]

注: D-解体; F-起火; O-无解体, 无起火。

Note: D-Disassembly, F-Fire, O- No disassembly, no fire.

序号 No.	8	测试项目名称 Name of test items	强制放电 Forced discharge
样品编号 Sample No.	样品状态 Sample status	测试结果 Test result	备注 Remark
02163A120131	首次完全放电 1cyc fully discharged	O	/
02163A120321	首次完全放电 1cyc fully discharged	O	/
02163A120082	首次完全放电 1cyc fully discharged	O	/
02163A120547	首次完全放电 1cyc fully discharged	O	/
02163A120342	首次完全放电 1cyc fully discharged	O	/
02163A120129	首次完全放电 1cyc fully discharged	O	/
02163A120928	首次完全放电 1cyc fully discharged	O	/
02163A120261	首次完全放电 1cyc fully discharged	O	/
02163A120888	首次完全放电 1cyc fully discharged	O	/
02163A120449	首次完全放电 1cyc fully discharged	O	/
02163A120709	50 次完全放电 50yc fully discharged	O	/
02163A120052	50 次完全放电 50yc fully discharged	O	/
02163A120609	50 次完全放电 50yc fully discharged	O	/
02163A120818	50 次完全放电 50yc fully discharged	O	/
02163A120306	50 次完全放电 50yc fully discharged	O	/
02163A120225	50 次完全放电 50yc fully discharged	O	/
02163A120087	50 次完全放电 50yc fully discharged	O	/
02163A120173	50 次完全放电 50yc fully discharged	O	/
02163A120936	50 次完全放电 50yc fully discharged	O	/
02163A120811	50 次完全放电 50yc fully discharged	O	/
注: D-解体; F-起火; O-无解体, 无起火。 Note: D-Disassembly, F-Fire, O- No disassembly, no fire.			

测试样品图片
Test sample image

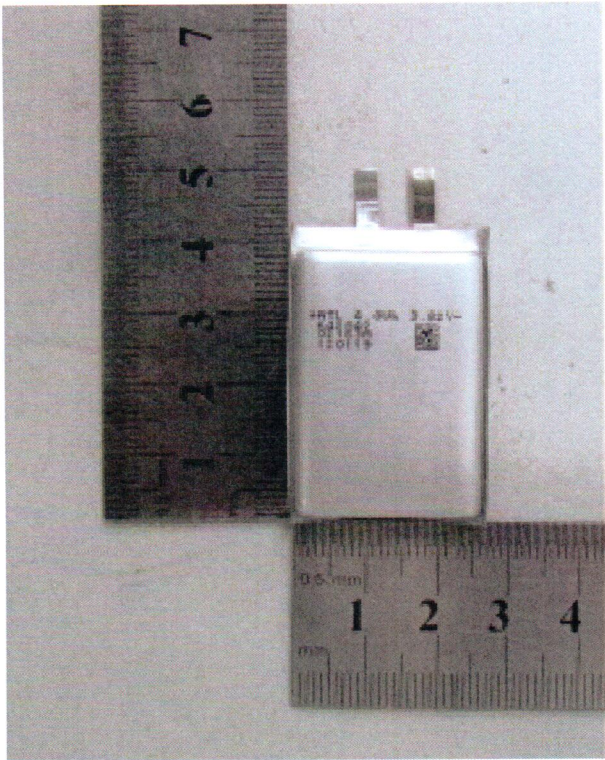


图 1：正面
Figure 1: positive

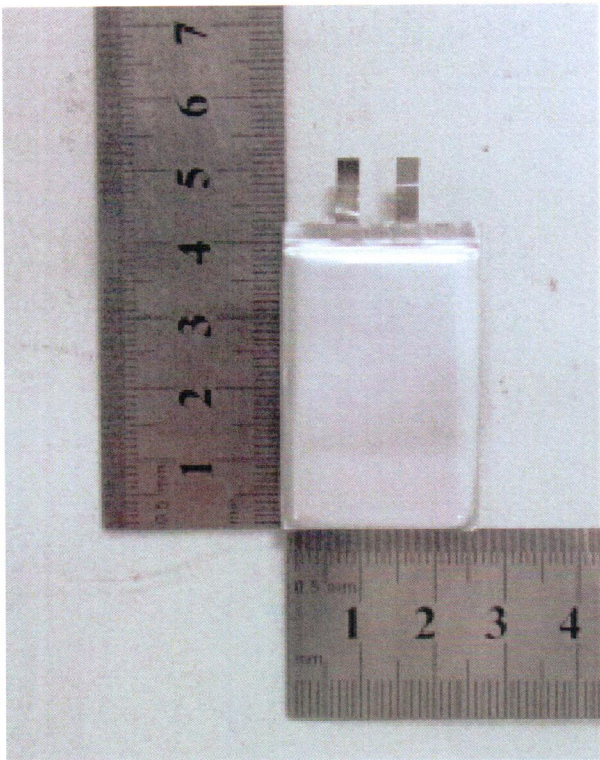


图 2：反面
Figure 2: negative

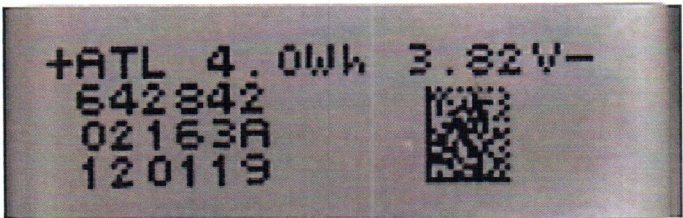


图 3：标识
Figure 3: Logo

声 明

Statement

1. 检测报告无本实验室公章无效。

The test report is invalid if not affixed the official seal of the laboratory to it.

2. 检测报告涂改无效。

The test report is invalid if it is blotted out.

3. 送样委托检测结果，仅对所送样品有效。

The conclusion of the consignment test is only valid for the provided sample.

4. 本报告未经本实验室书面许可，不可部分复制。

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