

测试报告

No. SHAEC2113111904

日期: 2021年07月05日 第1页,共11页

森美特半导体有限公司

高雄县永安乡永安工业区永工一路28号

以下测试之样品是由申请者所提供及确认: 二极管

SGS工作编号: SP21-019138 - SH
型号: SMD
客户参考信息: DO-214AC、DO-214AA
、DO-214AB、DO-218AB、SMAF、SMBF、SOD-123FL、SOD-323
、SOT-23、SOT-89、MBS、MBF、LL41、TO-277、TO-252、TO-263
SOD-523、SOD-723、SOD-923、LL34、ABS、SOP-4、TO-269AA、SOT-23-6、SOT-363、SOT-223
样品接收日期: 2021年06月25日
测试周期: 2021年06月25日 - 2021年07月05日
测试要求: 根据客户要求测试
测试方法: 请参见下一页
测试结果: 请参见下一页

结论: 基于所送样品进行的测试, 镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸酯(如邻苯二甲酸二丁酯(DBP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二(2-乙基己基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP))的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

通标标准技术服务(上海)有限公司
授权签名

潘雯舒

Sue Sheng 盛雯舒
批准签署人

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测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	SHA21-131119.001	银色金属
SN2	SHA21-131119.002	铜色金属
SN3	SHA21-131119.003	黑色固体

备注:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法: 参考IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015和IEC 62321-8:2017, 采用ICP-OES, UV-Vis和GC-MS进行分析。

测试项目	限值	单位	MDL	003
镉(Cd)	100	mg/kg	2	ND
铅(Pb)	1000	mg/kg	2	6
汞(Hg)	1000	mg/kg	2	ND
六价铬 (Cr(VI))	1000	mg/kg	8	ND
多溴联苯之和(PBBs)	1000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1000	mg/kg	-	ND
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND



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测试项目	限值	单位	MDL	003
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯(BBP)	1000	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	1000	mg/kg	50	ND

备注:

(1) 最大允许限值引用自RoHS指令(EU) 2015/863。

IEC 62321系列等同于 EN 62321 系列

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) 2021年7月22号开始, DEHP, BBP, DBP 和 DIBP的限制适用于医疗器械, 包括体外医疗器械, 监控仪表, 包括工业监测和控制仪器。

RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法: 参考滴定法, IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013和IEC 62321-7-1:2015, 采用ICP-OES和UV-Vis进行分析。

测试项目	限值	单位	MDL	001	002
镉 (Cd)	100	mg/kg	2	ND	ND
铅(Pb)	1000	mg/kg	2		ND
汞 (Hg)	1000	mg/kg	2	ND	ND
铅 (Pb)	0.1	%	-	93.88▲	
六价铬(Cr(VI))▼	-	µg/cm ²	0.10	ND	ND

备注:

(1) 最大允许限值引用自RoHS指令(EU) 2015/863。

IEC 62321系列等同于 EN 62321 系列

https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25

(2) ▼ = a. 当六价铬的浓度高于0.13 µg/cm²时, 样品为阳性, 即含有六价铬;

b. 当六价铬的浓度为ND(低于0.10 µg/cm²)时, 样品为阴性, 即未检测到六价铬;



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c. 当六价铬的浓度介于0.10 µg/cm²与0.13 µg/cm²之间时, 无法直接判定是否检测到六价铬, 因不同个体的样品表面差异可能会影响测定结果;

由于未获知样品的存储条件和生产日期, 样品的六价铬测试结果仅能代表测试时样品含六价铬的状态。

(3) ▲根据客户提供的声明, 编号001中的铅(Pb)被欧盟RoHS指令2011/65/EU豁免, 相应豁免条文(请以英文原文为准) [ANNEX III 7(a)]: 高熔点型焊料中的铅(如铅含量等于或大于85%的铅基合金焊料)。

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检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的, 仅供内部参考。

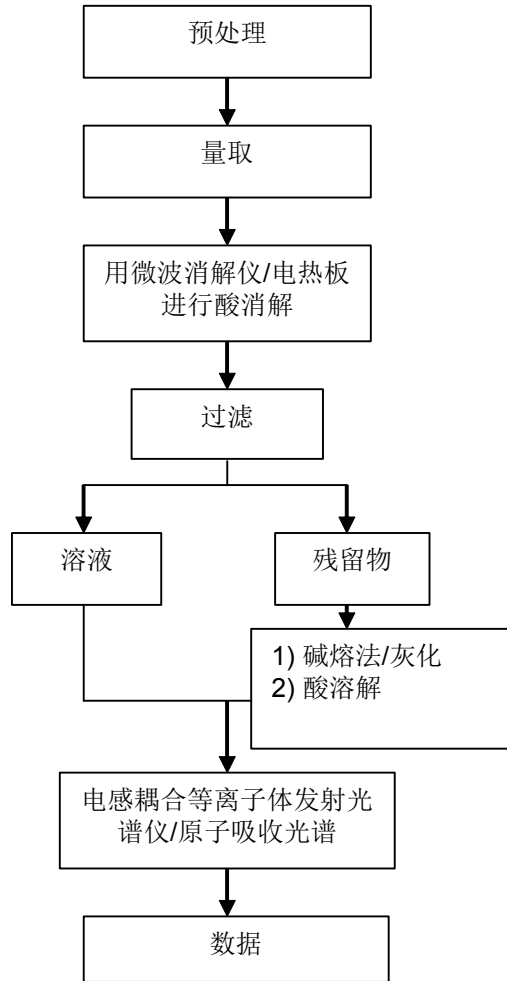


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元素(IEC62321) 测试流程图

1)样品按照下述流程被完全消解



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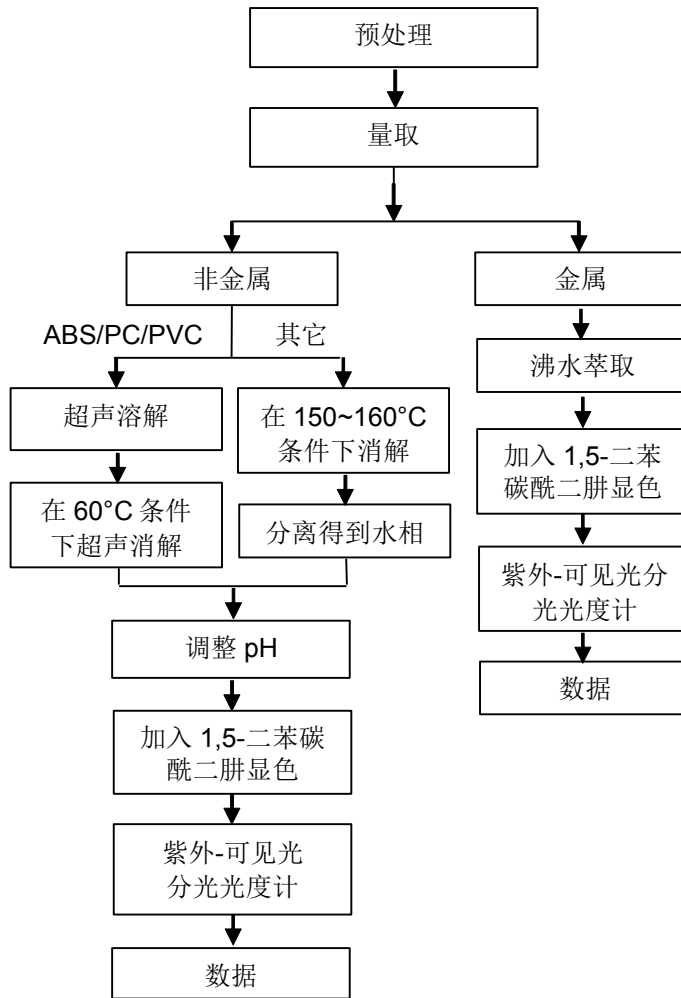
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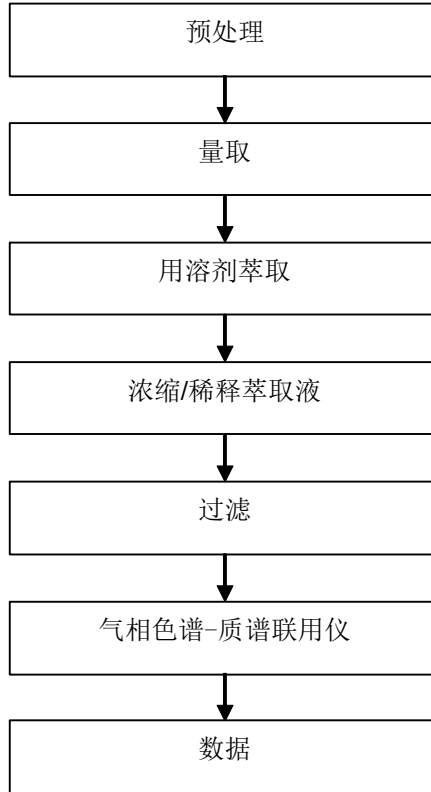
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附件

六价铬测试流程图



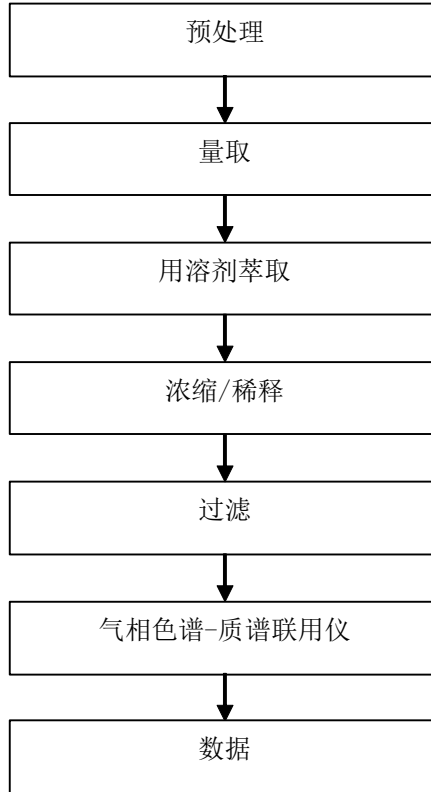
PBBs/PBDEs 测试流程图



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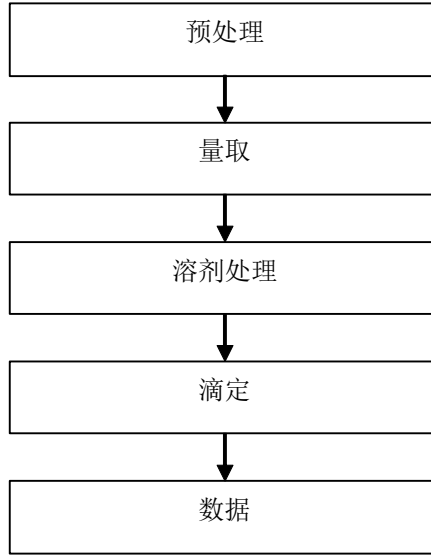
Phthalates 测试流程图



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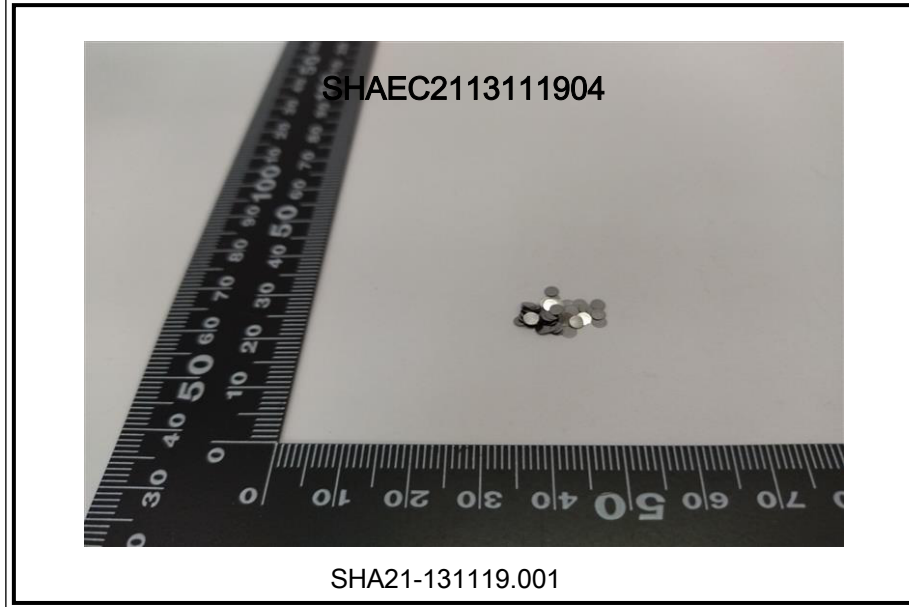
滴定测试流程图



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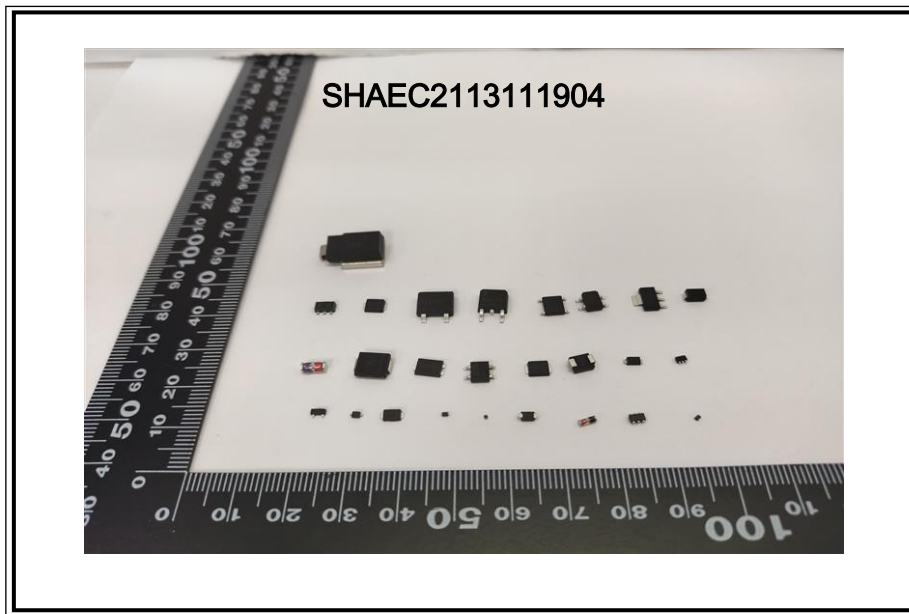
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