

检测报告

编号: SHAEC23006032902

日期: 2023年05月18日

第1页, 共11页

客户名称: 捷捷半导体有限公司
 客户地址: 南通市苏通科技产业园井冈山路6号

样品名称: 固态继电器

以上样品及信息由客户提供。

SGS 工作编号: TIC1020230511093359DROY
 样品接收时间: 2023年05月12日
 检测周期: 2023年05月12日 ~ 2023年05月18日
 检测要求: 根据客户要求检测。
 检测方法: 见后续页。
 检测结果: 见后续页。

检测要求	结论
欧盟 RoHS 指令 2011/65/EU 附录 II 的修正指令(EU) 2015/863- 铅、汞、镉、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、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)	符合
欧盟 RoHS 指令 2011/65/EU 附录 II 的修正指令(EU) 2015/863-铅、汞、镉和六价铬	符合
卤素	见检测结果

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倪俊

Tom Ni 倪俊
 批准签署人

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检测结果:

检测部件外观描述:

样品序号	样品编号	SGS 样品 ID	样品描述
SN1	A1	SHA23-0060329-0001.C001	黑色本体
SN2	A2	SHA23-0060329-0001.C002	黑色固体
SN3	A3	SHA23-0060329-0001.C003	银色金属

备注:

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

欧盟 RoHS 指令 2011/65/EU 附录 II 的修正指令(EU) 2015/863- 铅、汞、镉、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、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)

检测方法: 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。

检测项目	限值	单位	MDL	A1
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1000	mg/kg	2	2498▲
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(MonoBB)	-	mg/kg	5	ND
二溴联苯(DiBB)	-	mg/kg	5	ND
三溴联苯(TriBB)	-	mg/kg	5	ND
四溴联苯(TetraBB)	-	mg/kg	5	ND
五溴联苯(PentaBB)	-	mg/kg	5	ND
六溴联苯(HexaBB)	-	mg/kg	5	ND
七溴联苯(HeptaBB)	-	mg/kg	5	ND
八溴联苯(OctaBB)	-	mg/kg	5	ND
九溴联苯(NonaBB)	-	mg/kg	5	ND
十溴联苯(DecaBB)	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1000	mg/kg	-	ND
一溴二苯醚(MonoBDE)	-	mg/kg	5	ND
二溴二苯醚(DiBDE)	-	mg/kg	5	ND
三溴二苯醚(TriBDE)	-	mg/kg	5	ND
四溴二苯醚(TetraBDE)	-	mg/kg	5	ND
五溴二苯醚(PentaBDE)	-	mg/kg	5	ND



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检测项目	限值	单位	MDL	A1
六溴二苯醚(HexaBDE)	-	mg/kg	5	ND
七溴二苯醚(HeptaBDE)	-	mg/kg	5	ND
八溴二苯醚(OctaBDE)	-	mg/kg	5	ND
九溴二苯醚(NonaBDE)	-	mg/kg	5	ND
十溴二苯醚(DecaBDE)	-	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。
- (2) IEC 62321 系列等同于 EN 62321 系列。
- (3) 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。

欧盟 RoHS 指令 2011/65/EU 附录 II 的修正指令(EU) 2015/863-铅、汞、镉和六价铬

检测方法: 参考 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。

检测项目	限值	单位	MDL	A3
镉 (Cd)	100	mg/kg	2	ND
铅 (Pb)	1000	mg/kg	2	16
汞 (Hg)	1000	mg/kg	2	ND
六价铬(Cr(VI))▼	-	µg/cm ²	0.10	ND

备注:

- (1) 最大允许限值引用自RoHS指令(EU) 2015/863。
- (2) IEC 62321系列等同于 EN 62321系列。
- (3) ▼ = 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;
 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, 样品的六价铬检测结果仅能代表测试时样品含六价铬的状态。

卤素

检测方法: 参考 EN 14582:2016, 采用 IC 进行分析。

检测项目	单位	MDL	A2
氟 (F)	mg/kg	20	1436
氯 (Cl)	mg/kg	50	3366



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检测项目	单位	MDL	A2
溴 (Br)	mg/kg	50	ND
碘 (I)	mg/kg	50	ND

▲根据客户提供的声明，编号 A1 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(即铅含量等于或大于 85%的铅基合金焊料)。除非另有说明，参照 ILAC-G8:09/2019，使用简单接受 (w=0) 的二元判定规则进行符合性判定。除非另有说明，此报告结果仅对检测的样品负责。本报告未经本公司书面许可，不可部分复制。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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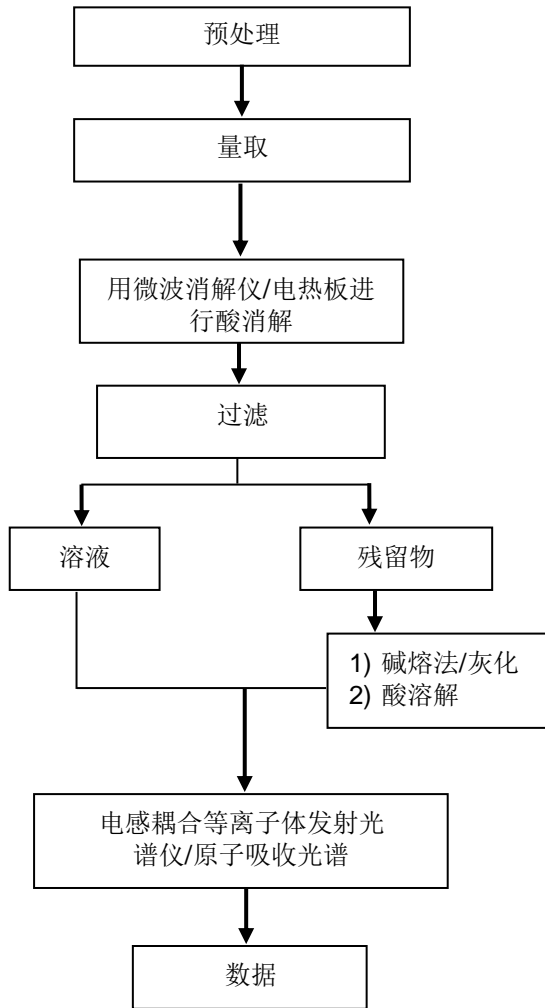
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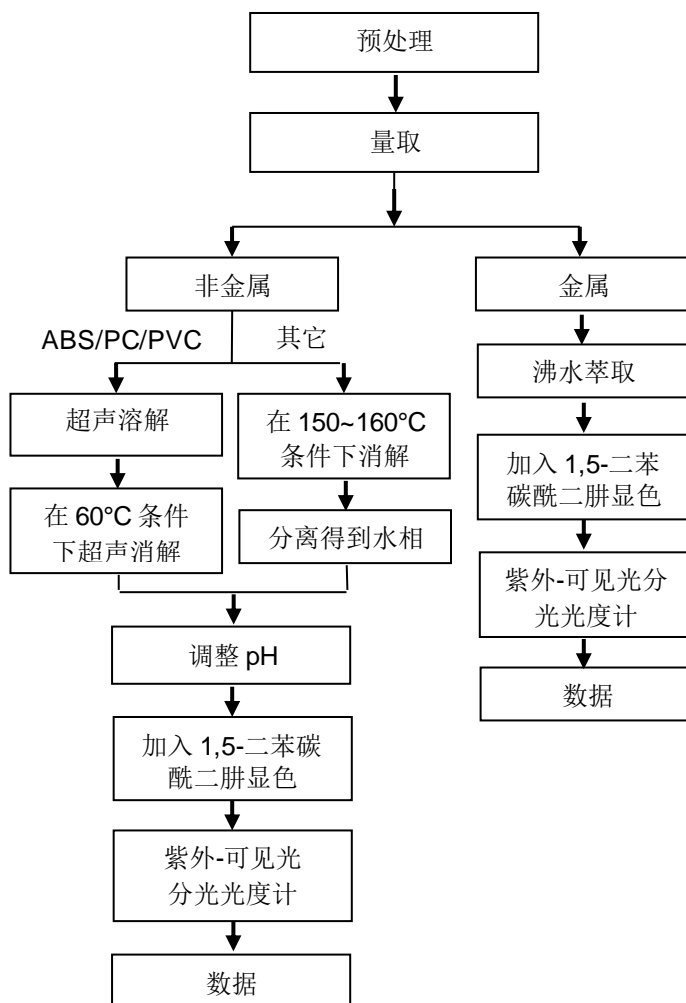
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元素检测流程图

样品按照下述流程被完全消解



六价铬检测流程图



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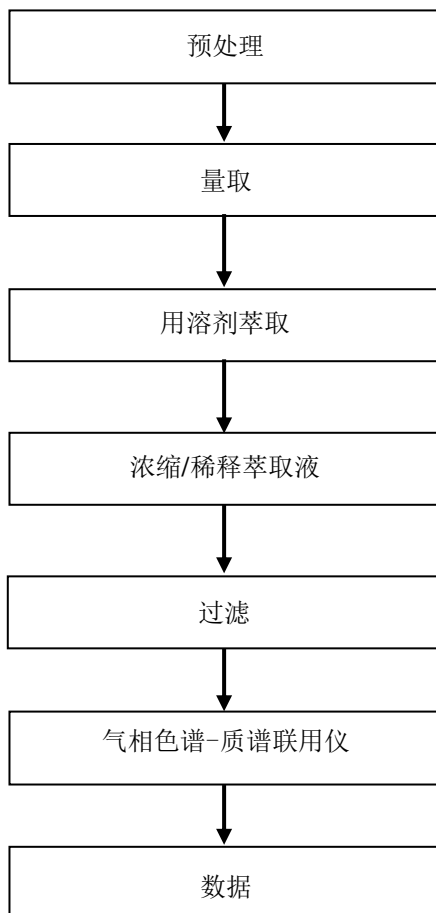
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PBBs/PBDEs 检测流程图



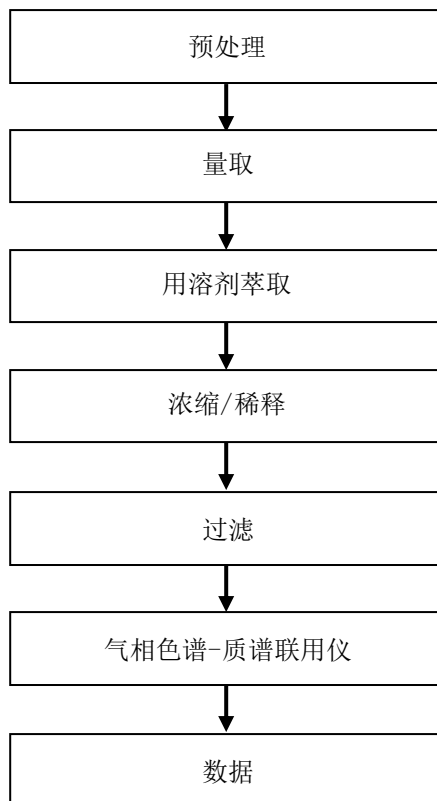
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Phthalates 检测流程图



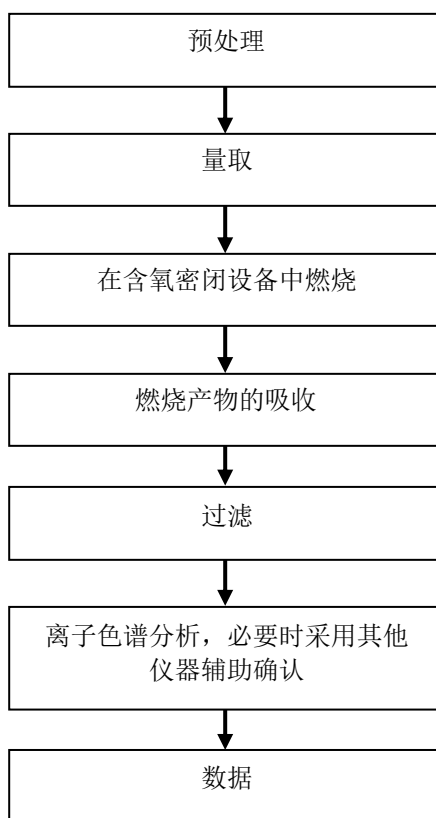
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卤素检测流程图



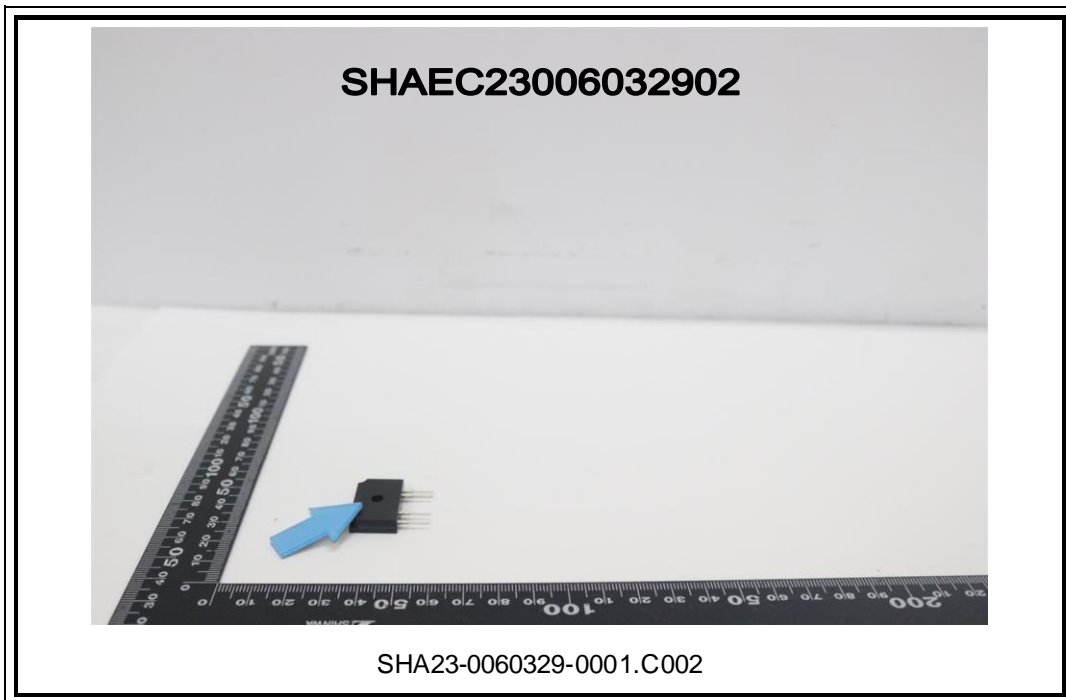
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中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21) 61156899 e sgs.china@sgs.com