

## 检测报告

编号: SHAEC24003061402

日期: 2024 年 03 月 01 日

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客户名称: 深圳辰达半导体有限公司/安徽辰达半导体有限公司  
客户地址: 深圳市龙华区民治街道民塘路 328 号鸿荣源天俊数字创新中心 B 座 13 楼/安徽省滁州市南谯区乌衣镇双迎路 790 号

样品名称: 半导体, 半导体

型号: SMA

客户参考信息: DO-214AC/SMA, DO-214AA/SMB, DO-214AB/SMC, SMAF, SMBF, SMCF, SOD-123, SOD-123FL, SOD-123SL, SOD-323, SOD-323FL, SOD-523, SOD-723, SOD-923, SOD-882, DFN1006, DFN1006-3L, DFN1610-6L, DFN2510-10L, DFN0603, QFN, SOT-23, SOT23-5, SOT23-6, SOT-143, SOT-223, SOT-323, SOT-523, SOT-343, SOT-353, SOT-363, SOT-563, SOT-553, SOT-723, SOT-923, SOT23-5, SOT-23-6L, SOT-89, WBFBP-03E, MELF, MINI-MELF, DO-213AA, DO-213AB, TO-252/D-PAK, TO-263/D2PAK, DO-218AB, R-1, A-405, DO-34, DO-35, DO-41, DO-15, R-3, DO-27/DO-201AD, R-6, TO-220AC, TO-220AB, ITO-220AC, ITO-220AB, TO-277A, TO-277B, TO-247, TO-3P, TO-264, TO-126, TO-251/IPAK, TO-92, DIP, UMB, MB-S, MBF, DBS, ABF, CDS, ABS, TBS, LBF, UMSB, TMBF, MB-M, DB-1, WOM, KBP, KBP-K, D3K, KBL, KBU, RS, GBP, GBL, GBU, KBJ, GBJ, KBPC, KBPC-W, GBPC, GBPC-W, TTF

以上样品及信息由客户提供。

SGS 工作编号: SHP24-004295

样品接收时间: 2024 年 02 月 22 日

检测周期: 2024 年 02 月 22 日 ~ 2024 年 03 月 01 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。

通标标准技术服务(上海)有限公司  
授权签名

Jenny Lan 兰柳珍  
批准签署人

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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 (PBB)、多溴二苯醚 (PBDE)、邻苯二甲酸二(2-乙基己基)酯 (DEHP)、邻苯二甲酸丁苄酯 (BBP)、邻苯二甲酸二丁酯 (DBP)和邻苯二甲酸二异丁酯 (DIBP)	符合

## 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	SHA24-0030614-0001.C001	黑色本体带黄色印字
SN2	A2	SHA24-0030614-0001.C002	银色金属引脚

## 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 (PBB)、多溴二苯醚 (PBDE)、邻苯二甲酸二(2-乙基己基)酯 (DEHP)、邻苯二甲酸丁苄酯 (BBP)、邻苯二甲酸二丁酯 (DBP)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/AAS, UV-Vis 和 GC-MS 进行分析。

检测项目	限值	单位	MDL	A1
铅 (Pb)	1000	mg/kg	2	15467 <sup>▲</sup>
汞 (Hg)	1000	mg/kg	2	ND
镉 (Cd)	100	mg/kg	2	ND
六价铬 (Cr(VI))	1000	mg/kg	8	ND
多溴联苯之和 (PBB)	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 (PBDE)	1000	mg/kg	-	ND
一溴二苯醚 (MonoBDE)	-	mg/kg	5	ND



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检测项目	限值	单位	MDL	A1
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
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(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND

## 备注:

(1) 最大允许极限值引用自 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。

(4) ▲根据客户提供的声明, 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)。

更多豁免相关信息, 可以从以下链接获取:

<https://rohs.sgsonline.com.cn/PDFLinks/zh-cn/RSTS-TP-037%20RoHS%20Exemption%20%28CN%29.pdf>

检测方法: 参考 IEC 62321-4:2013+AMD1:2017, IEC 62321-5:2013, IEC 62321-7-1:2015, IEC 62321-6:2015 和 IEC 62321-8:2017, 采用 ICP-OES/AAS, UV-Vis 和 GC-MS 进行分析。

检测项目	限值	单位	MDL	A2
铅 (Pb)	1000	mg/kg	2	7
汞 (Hg)	1000	mg/kg	2	ND
镉 (Cd)	100	mg/kg	2	ND
六价铬 (Cr(VI))▼	-	µg/cm <sup>2</sup>	0.10	ND
多溴联苯之和 (PBB)	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 (PBDE)	1000	mg/kg	-	ND



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检测项目	限值	单位	MDL	A2
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
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(2-乙基己基)酯 (DEHP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯 (BBP)	1000	mg/kg	50	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯 (DIBP)	1000	mg/kg	50	ND

## 备注:

(1) 最大允许极限值引用自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 $0.13 \mu\text{g}/\text{cm}^2$ 时, 样品为阳性, 即含有六价铬;  
b. 当六价铬的浓度为ND (低于 $0.10 \mu\text{g}/\text{cm}^2$ ) 时, 样品为阴性, 即未检测到六价铬;  
c. 当六价铬的浓度介于 $0.10 \mu\text{g}/\text{cm}^2$ 与 $0.13 \mu\text{g}/\text{cm}^2$ 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检测时样品含六价铬的状态。

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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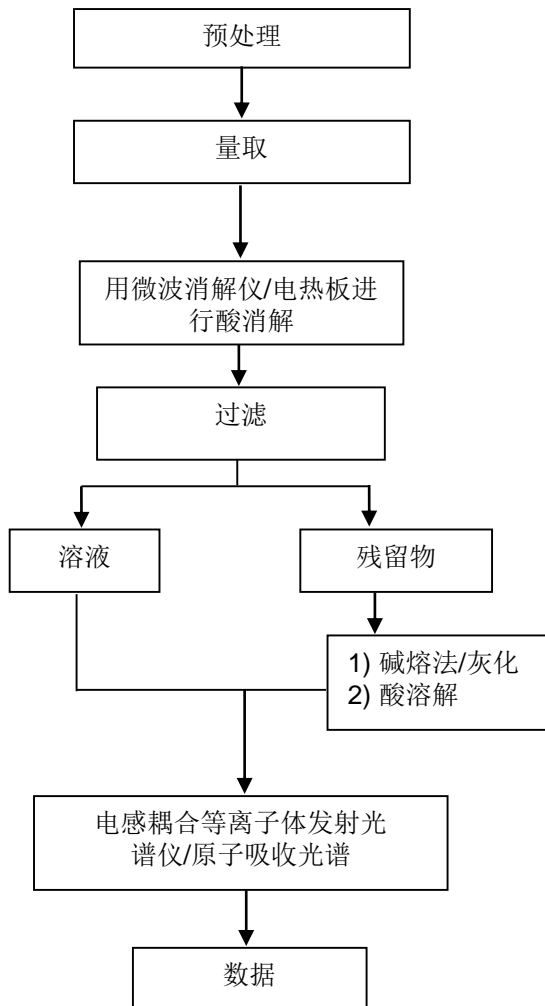
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附件

## 元素检测流程图

样品按照下述流程被完全消解



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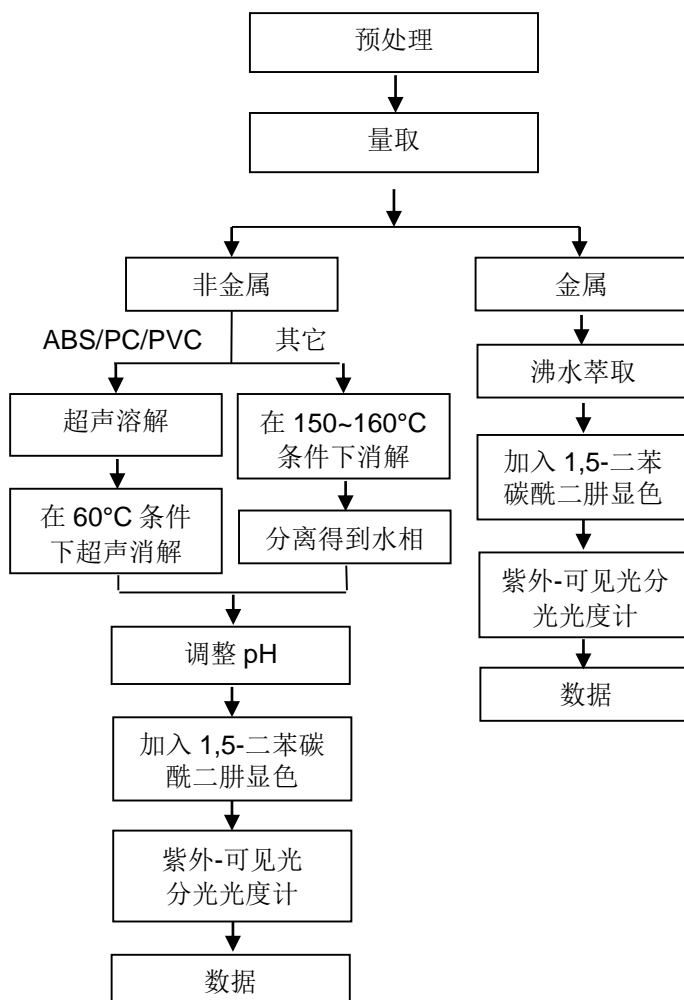
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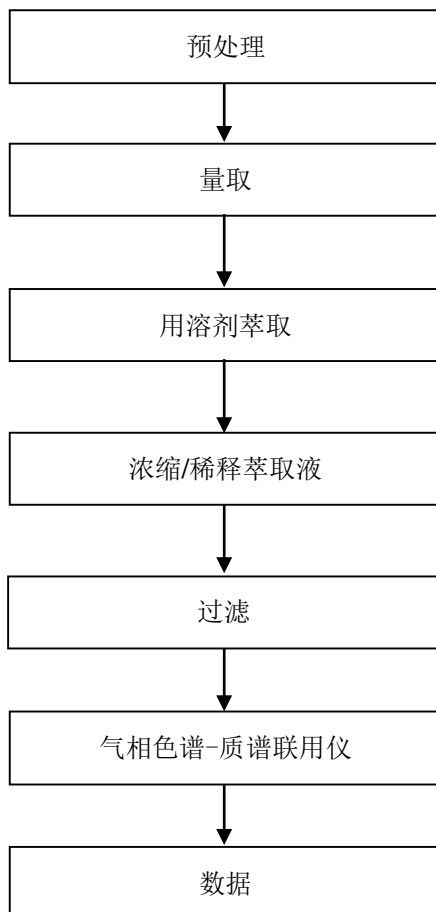
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## 六价铬检测流程图



## PBB/PBDE 检测流程图



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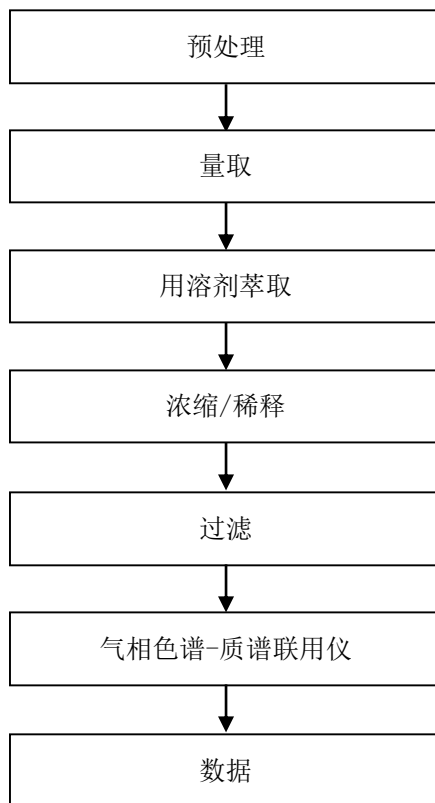
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## Phthalates 检测流程图



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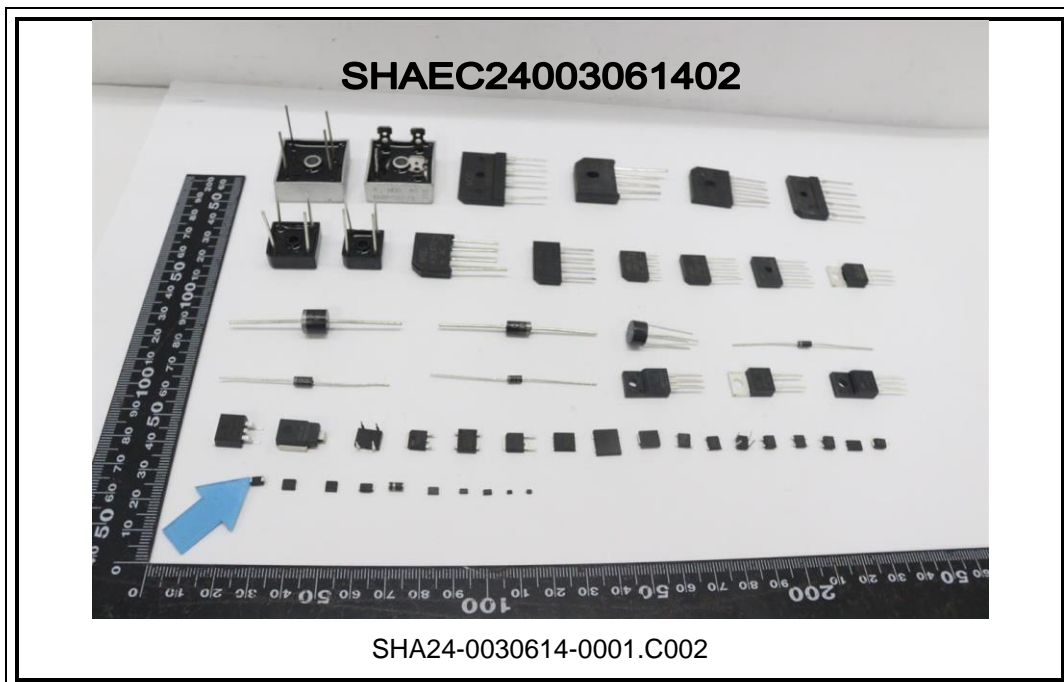
## 检测报告

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