

## 检测报告

编号: SZXEC25005192804

日期: 2026年01月09日

第1页, 共7页

客户名称: 福建威旺半导体有限公司  
 客户地址: 福建省龙岩市武平县工业园区工业大道16号

样品名称: 半导体分立器件  
 型号: TO-220F  
 客户参考信息: KBL, KBP, KBU, KBJ, GBU, GBJ, GBP, GBL, DBS, DBM, DBF, D3K, MB, MBF, MBS, MBM, ABS, RS, KBPC, GBPC, UMSB, ULBF, 2W series  
 TO-220F, TO-220AB, TO-220AC, TO-220FAC, TO-220C, TO-220, ITO-220, TO-251, TO-252, TO-252-2L, TO-262, TO-263, TO-263C, TO-247, TO-247S, TO-277, TO-126C, TO-92, TO-3P, PDFN5\*6, PDFN3\*3  
 SOD-123, SOD-123FL, SOD-323, SOD-523, SOD-123FL series  
 SMA, SMAF, SMAS, SMB, SMBF, SMC series  
 SOT-23, SOT-23-3L, SOT-223, SOT-223-2L, SOT-223-3L, SOT-263, SOT-323, SOT-363, SOT-523, SOT-563, SOT-89 series  
 DO-15, DO-27, DO-41, DO-34, DO-35, DO-201AD, DO-213AA, DO-213AB, DO-214AA, DO-214AC, DO-214AD, LL-34, MINI-MELF, R-1, R-3, R-6, A-405 series

以上样品及信息由客户提供。

SGS 工作编号: SZP25-067272  
 样品接收时间: 2025年12月31日  
 检测周期: 2025年12月31日 ~ 2026年01月09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 (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

通标标准技术服务有限公司深圳分公司  
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Andy Ni 倪磊  
 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、镉和六价铬	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	SZX25-0051928-0001.C001	黑色塑胶
SN2	A2	SZX25-0051928-0001.C002	银色金属脚

### 备注:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL= 方法检出限
- (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 和 IEC 62321-12:2023, 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	ND
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	25	ND
二溴联苯 (DiBB)	-	mg/kg	25	ND
三溴联苯 (TriBB)	-	mg/kg	25	ND
四溴联苯 (TetraBB)	-	mg/kg	25	ND
五溴联苯 (PentaBB)	-	mg/kg	25	ND
六溴联苯 (HexaBB)	-	mg/kg	25	ND
七溴联苯 (HeptaBB)	-	mg/kg	25	ND
八溴联苯 (OctaBB)	-	mg/kg	25	ND
九溴联苯 (NonaBB)	-	mg/kg	25	ND
十溴联苯 (DecaBB)	-	mg/kg	25	ND
多溴二苯醚之和 (PBDE)	1000	mg/kg	-	ND
一溴二苯醚 (MonoBDE)	-	mg/kg	25	ND
二溴二苯醚 (DiBDE)	-	mg/kg	25	ND
三溴二苯醚 (TriBDE)	-	mg/kg	25	ND



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第3页, 共7页

检测项目	限值	单位	MDL	A1
四溴二苯醚 (TetraBDE)	-	mg/kg	25	ND
五溴二苯醚 (PentaBDE)	-	mg/kg	25	ND
六溴二苯醚 (HexaBDE)	-	mg/kg	25	ND
七溴二苯醚 (HeptaBDE)	-	mg/kg	25	ND
八溴二苯醚 (OctaBDE)	-	mg/kg	25	ND
九溴二苯醚 (NonaBDE)	-	mg/kg	25	ND
十溴二苯醚 (DecaBDE)	-	mg/kg	25	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/AAS 和 UV-Vis 进行分析。

检测项目	限值	单位	MDL	A2
铅 (Pb)	1000	mg/kg	2	14
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

**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/cm<sup>2</sup>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/cm<sup>2</sup>) 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/cm<sup>2</sup>与0.13 µg/cm<sup>2</sup>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。

备注: 本报告中的检测结果和图片引用自报告 SZXEC25005192801。

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。  
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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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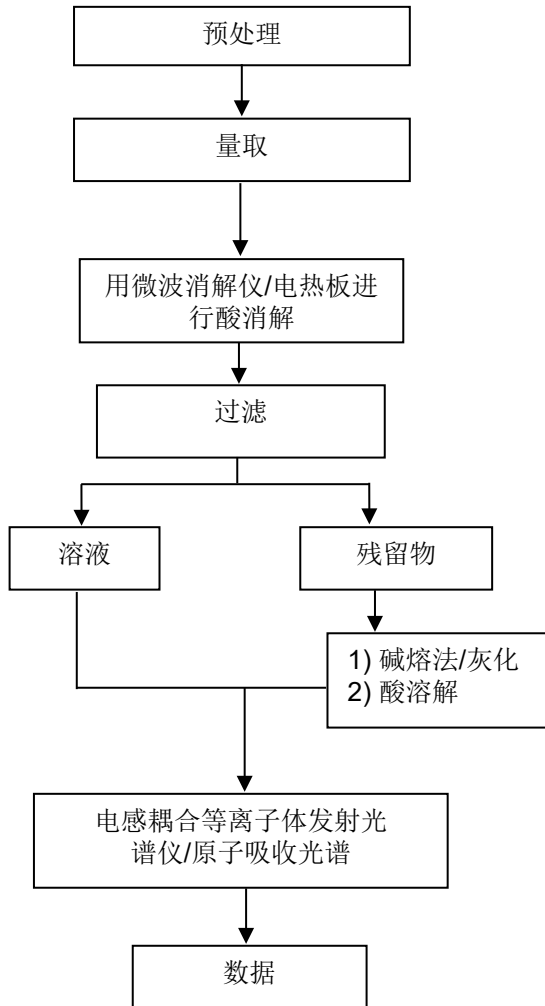
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附件

### 元素检测流程图

样品按照下述流程被完全消解



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### 六价铬检测流程图



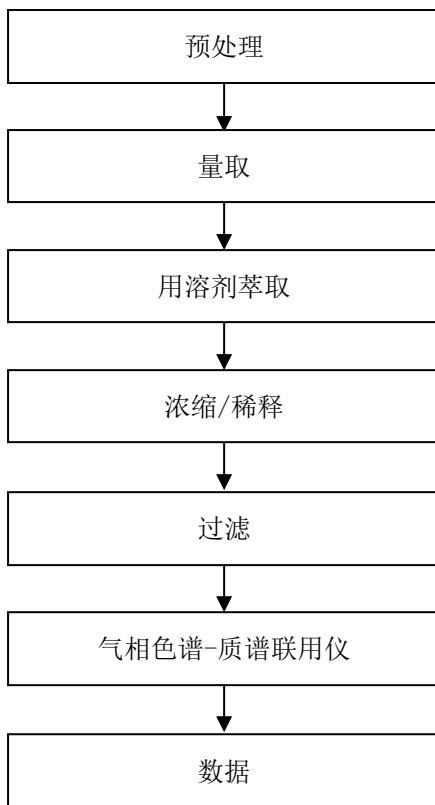
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### PBB(s)/PBDE(s)/Phthalates 检测流程图



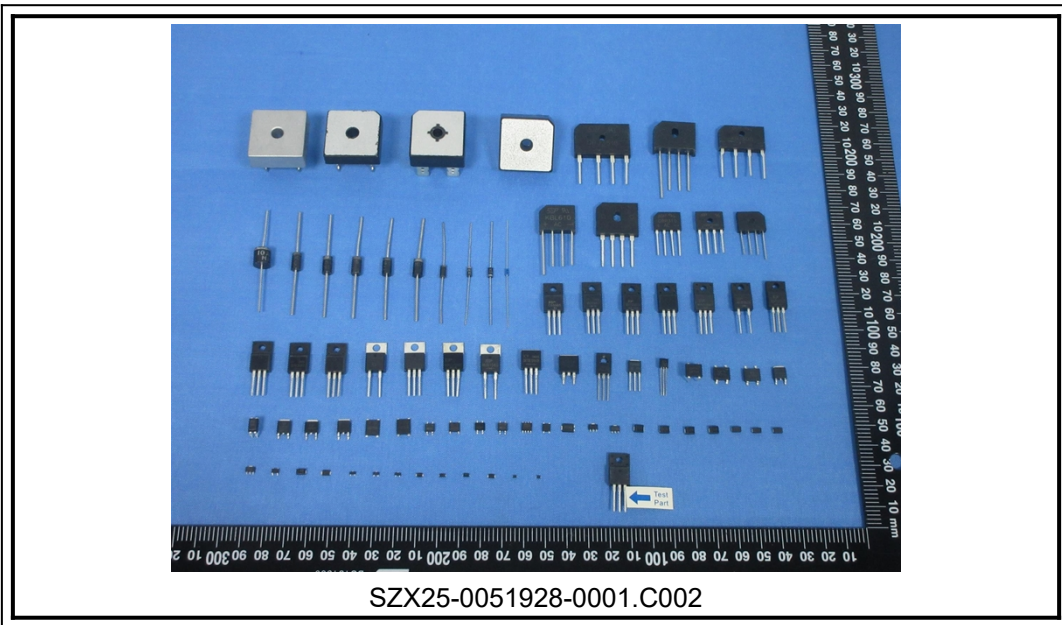
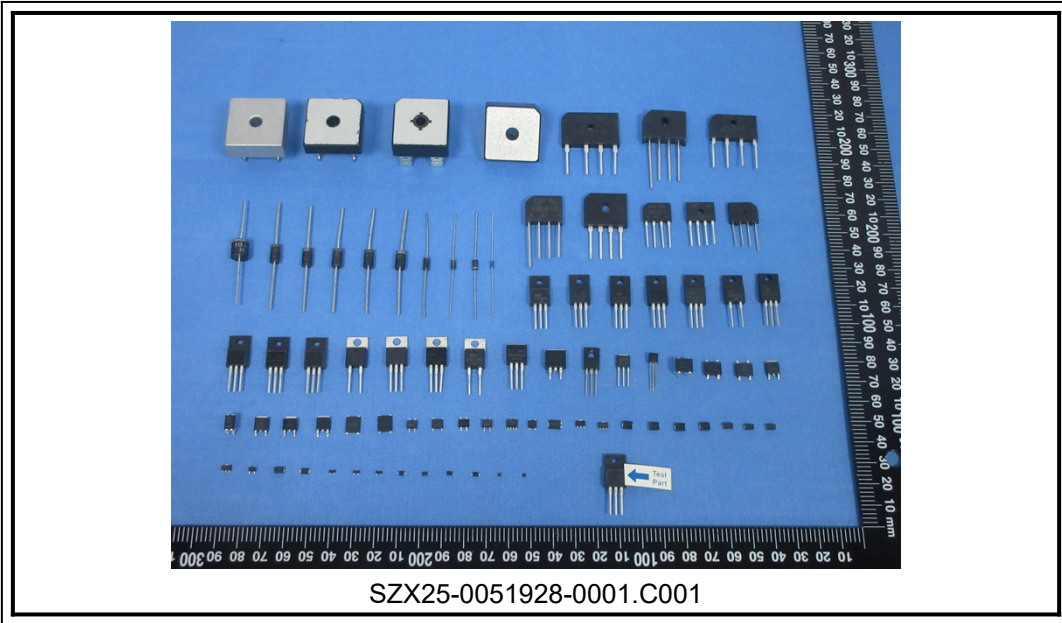
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