

## 检测报告

编号: TAOEC2306019514

日期: 2023年09月27日 第1页,共12页

客户名称: 宜兴中鑫世纪电子有限公司  
 客户地址: 江苏省宜兴市张渚镇善卷村宜广公路善卷段12号

样品名称: 桥堆/可控硅/MOS管/功率器件  
 型号: 整流桥  
 客户参考信息: 可控硅、MOS管、功率器件  
 GBU/GBP/GBJ/GBL/KBP/KBL/KBJ/KBU/TO-220/ITO220/TO-277A/TO-247/TO-252/TO-263/TO-3P ABS/ABF/MBS/MBF/MBM/TBS/TMB/DB/DBS/DF/DFM/DFS

以上样品及信息由客户提供。

SGS工作编号: SUP23-001266 - QD  
 样品接收日期: 2023年08月23日  
 检测周期: 2023年08月23日 - 2023年08月31日  
 检测要求: 根据客户要求检测  
 检测方法: 请参见下一页  
 检测结果: 请参见下一页  
 检测结果概要:

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), 邻苯二甲酸丁苯酯(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, 六价铬, 多溴联苯(PBBs), 多溴二苯醚(PBDEs), 邻苯二甲酸二丁酯 (DBP), 邻苯二甲酸丁苯酯(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

通标标准技术服务(青岛)有限公司  
 授权签名



Zhang Bo, Justin 张波  
 批准签署人



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编号: TAOEC2306019514

日期: 2023年09月27日 第2页,共12页

检测结果:

### 检测样品描述:

样品编号	SGS样品ID	描述
SN1	TAO23-060195.001	灰色固体
SN2	TAO23-060195.003	灰色膏体
SN3	TAO23-060195.005	铜色金属
SN4	TAO23-060195.007	黑色固体
SN5	TAO23-060195.008	银色金属
SN6	TAO23-060195.010	银色金属

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

**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), 邻苯二甲酸丁苯酯(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 62321-5:2013, IEC 62321-4:2013+AMD1:2017, 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	001	003	007
镉(Cd)	100	mg/kg	2	ND	ND	ND
铅(Pb)	1000	mg/kg	2	ND	915379▲	ND
汞(Hg)	1000	mg/kg	2	ND	ND	ND
六价铬 (Cr(VI))	1000	mg/kg	8	ND	ND	ND
多溴联苯之和(PBBs)	1000	mg/kg	-	ND	ND	ND
一溴联苯	-	mg/kg	5	ND	ND	ND
二溴联苯	-	mg/kg	5	ND	ND	ND
三溴联苯	-	mg/kg	5	ND	ND	ND
四溴联苯	-	mg/kg	5	ND	ND	ND
五溴联苯	-	mg/kg	5	ND	ND	ND
六溴联苯	-	mg/kg	5	ND	ND	ND
七溴联苯	-	mg/kg	5	ND	ND	ND
八溴联苯	-	mg/kg	5	ND	ND	ND
九溴联苯	-	mg/kg	5	ND	ND	ND
十溴联苯	-	mg/kg	5	ND	ND	ND



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检测项目	限值	单位	MDL	001	003	007
多溴二苯醚之和(PBDEs)	1000	mg/kg	-	ND	ND	ND
一溴二苯醚	-	mg/kg	5	ND	ND	ND
二溴二苯醚	-	mg/kg	5	ND	ND	ND
三溴二苯醚	-	mg/kg	5	ND	ND	ND
四溴二苯醚	-	mg/kg	5	ND	ND	ND
五溴二苯醚	-	mg/kg	5	ND	ND	ND
六溴二苯醚	-	mg/kg	5	ND	ND	ND
七溴二苯醚	-	mg/kg	5	ND	ND	ND
八溴二苯醚	-	mg/kg	5	ND	ND	ND
九溴二苯醚	-	mg/kg	5	ND	ND	ND
十溴二苯醚	-	mg/kg	5	ND	ND	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸丁苄酯(BBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二异丁酯(DIBP)	1000	mg/kg	50	ND	ND	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, 编号003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)。

**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 62321-5:2013, IEC 62321-4:2013+AMD1:2017, 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	005	008	010
镉 (Cd)	100	mg/kg	2	ND	ND	ND
铅(Pb)	1000	mg/kg	2	4	32	ND
汞 (Hg)	1000	mg/kg	2	ND	ND	ND
六价铬(Cr(VI))▼	-	µg/cm <sup>2</sup>	0.10	ND	ND	ND
多溴联苯之和(PBBs)	1000	mg/kg	-	ND	ND	ND
一溴联苯	-	mg/kg	5	ND	ND	ND
二溴联苯	-	mg/kg	5	ND	ND	ND
三溴联苯	-	mg/kg	5	ND	ND	ND



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检测项目	限值	单位	MDL	005	008	010
四溴联苯	-	mg/kg	5	ND	ND	ND
五溴联苯	-	mg/kg	5	ND	ND	ND
六溴联苯	-	mg/kg	5	ND	ND	ND
七溴联苯	-	mg/kg	5	ND	ND	ND
八溴联苯	-	mg/kg	5	ND	ND	ND
九溴联苯	-	mg/kg	5	ND	ND	ND
十溴联苯	-	mg/kg	5	ND	ND	ND
多溴二苯醚之和(PBDEs)	1000	mg/kg	-	ND	ND	ND
一溴二苯醚	-	mg/kg	5	ND	ND	ND
二溴二苯醚	-	mg/kg	5	ND	ND	ND
三溴二苯醚	-	mg/kg	5	ND	ND	ND
四溴二苯醚	-	mg/kg	5	ND	ND	ND
五溴二苯醚	-	mg/kg	5	ND	ND	ND
六溴二苯醚	-	mg/kg	5	ND	ND	ND
七溴二苯醚	-	mg/kg	5	ND	ND	ND
八溴二苯醚	-	mg/kg	5	ND	ND	ND
九溴二苯醚	-	mg/kg	5	ND	ND	ND
十溴二苯醚	-	mg/kg	5	ND	ND	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸丁苄酯(BBP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	1000	mg/kg	50	ND	ND	ND
邻苯二甲酸二异丁酯(DIBP)	1000	mg/kg	50	ND	ND	ND

备注:

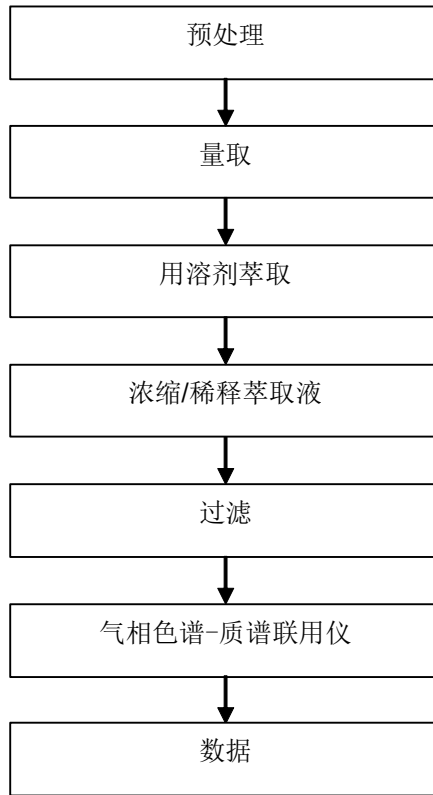
- (1) 最大允许限值引用自RoHS指令(EU) 2015/863.
- (2) IEC 62321系列等同于 EN 62321系列
- (3) ▼ = a. 当六价格的浓度高于0.13 μg/cm<sup>2</sup>时, 样品为阳性, 即含有六价格;  
 b. 当六价格的浓度为ND(低于0.10 μg/cm<sup>2</sup>)时, 样品为阴性, 即未检测到六价格;  
 c. 当六价格的浓度介于0.10 μg/cm<sup>2</sup>与0.13 μg/cm<sup>2</sup>之间时, 无法直接判定是否检测到六价格, 因不同个体的样品表面差异可能会影响测定结果;  
 由于未获知样品的存储条件和生产日期, 样品的六价格检测结果仅能代表检测时样品含六价格的状态.
- (4) 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。  
 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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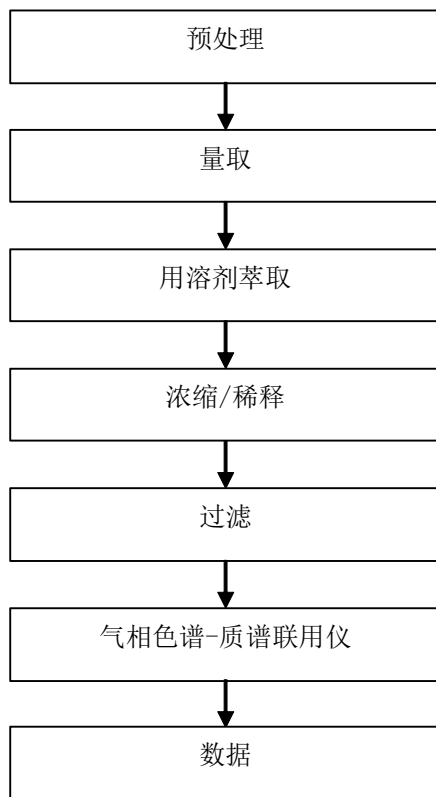
### PBBs/PBDEs 检测流程图



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## Phthalates 检测流程图

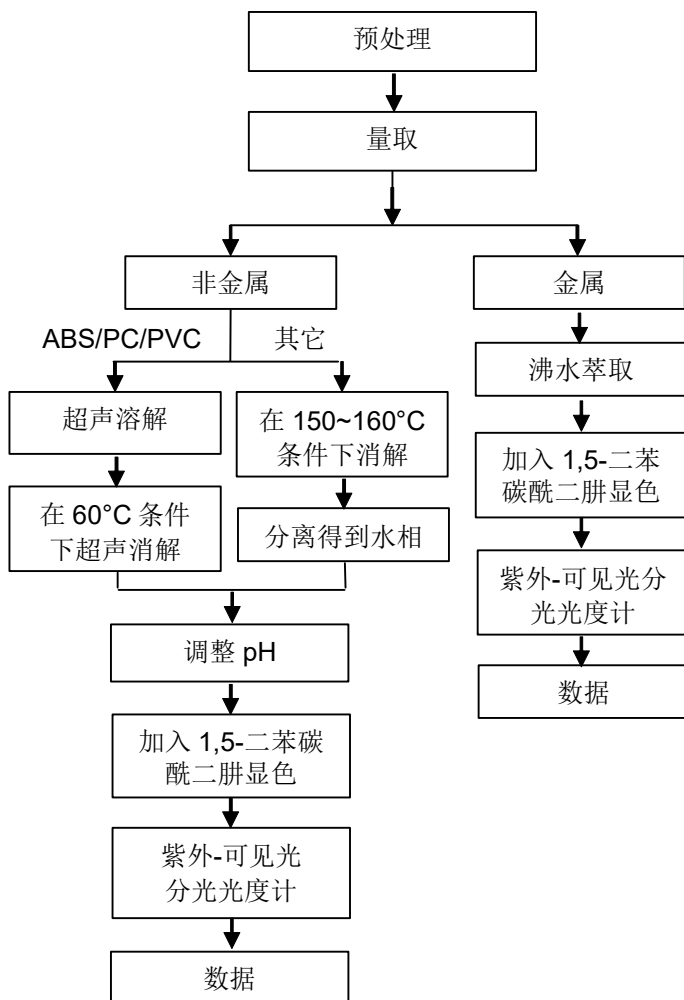


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附件

### 六价铬检测流程图

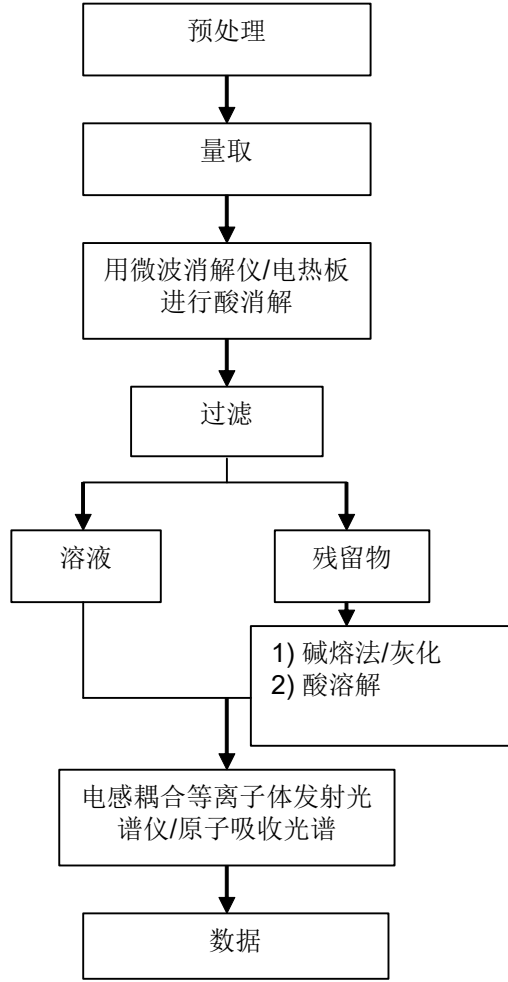


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## 元素(IEC62321) 检测流程图

1)样品按下述流程被完全消解



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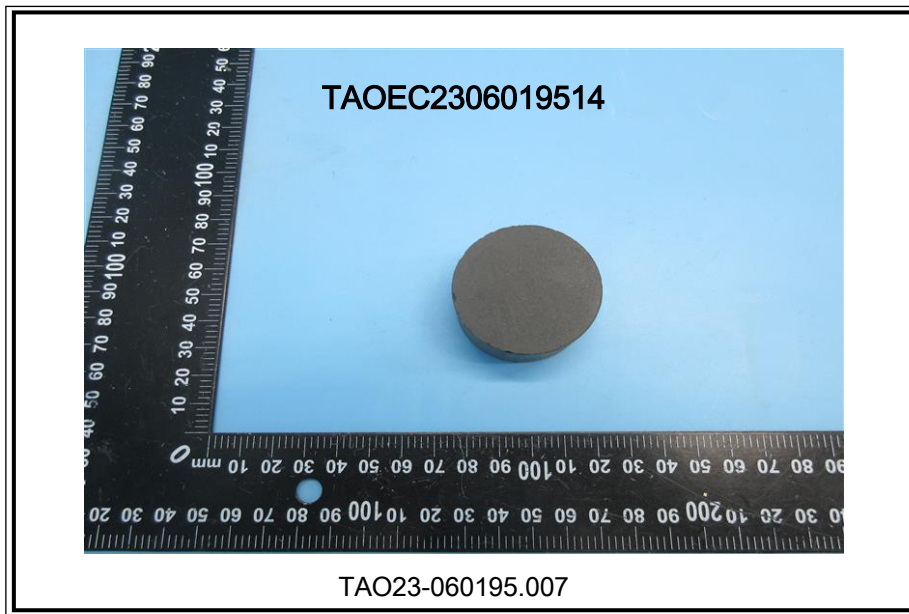
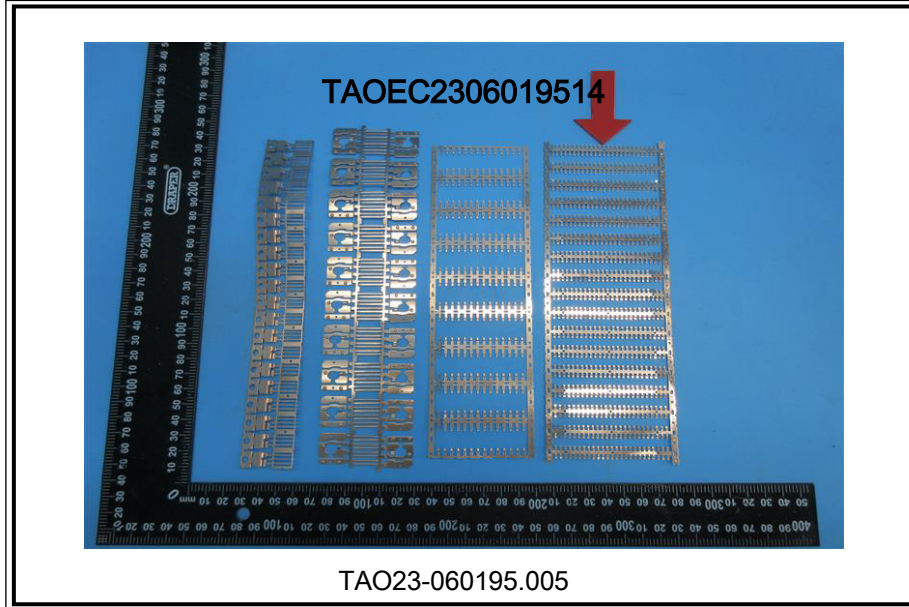


样品照片:



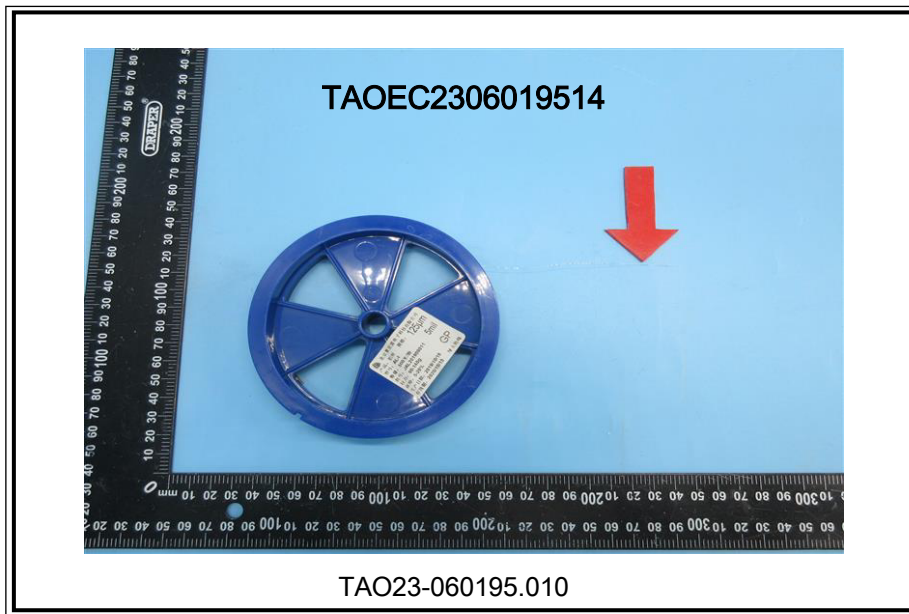
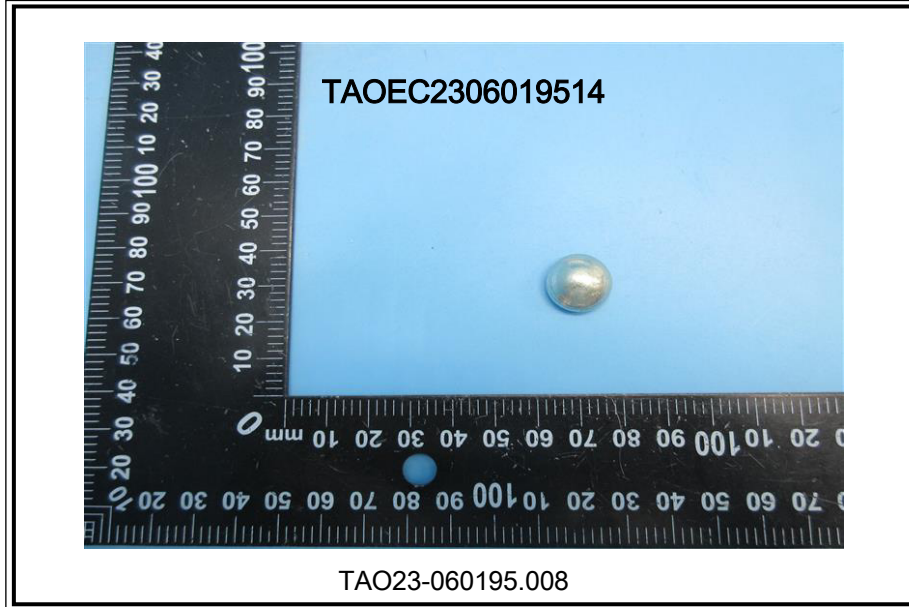
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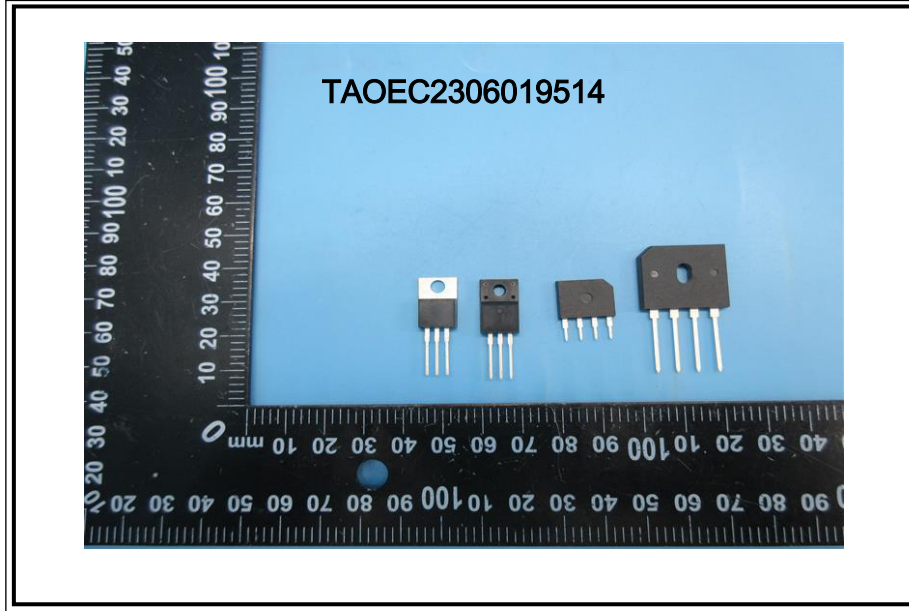
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