

## 測試報告 Test Report

號碼(No.): CE/2010/15945

日期(Date): 2010/02/08

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智威科技股份有限公司

ZOWIE TECHNOLOGY CORPORATION

台北縣新店市復興路43號3樓


3/F., NO. 43, FUSING RD., SINDIAN CITY, TAIPEI COUNTY 23150, TAIWAN



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下 (The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description) : SINTERED GLASS PASSIVATED JUNCTION BRIDGE RECTIFIERS  
樣品型號(Style/Item No.) : DFS、DFM、GBP、KBL、GBL、KBJ、GBU、GBJ、MBS、SERIAL  
收件日期(Sample Receiving Date) : 2010/01/28  
測試期間(Testing Period) : 2010/01/28 TO 2010/02/08

=====  
**測試需求(Test Requested)** : 參照 RoHS 2002/95/EC 及其修定指令要求. (In accordance with the RoHS Directive 2002/95/EC, and its amendment directives).  
**測試方法(Test Method)** : 參考 IEC 62321: 2008 方法檢測. (With reference to IEC 62321: 2008. Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products).  
(1) 以感應耦合電漿原子發射光譜儀檢測鎘含量. / Determination of Cadmium by ICP-AES.  
(2) 以感應耦合電漿原子發射光譜儀檢測鉛含量. / Determination of Lead by ICP-AES.  
(3) 以感應耦合電漿原子發射光譜儀檢測汞含量. / Determination of Mercury by ICP-AES.  
(4) 以 UV-VIS 檢測六價鉻含量. / Determination of Hexavalent Chromium by UV/Vis Spectrometry.  
(5) 以 Spot test / boiling water extraction 方法檢測六價鉻含量. / Determination of Hexavalent Chromium by Spot test / boiling water extraction Method.  
(6) 以氣相層析儀/質譜儀檢測多溴聯苯和多溴聯苯醚含量. / Determination of PBB and PBDE by GC/MS.  
**測試結果(Test Results)** : 請見下一頁 (Please refer to next pages).

  
Chenyu Kung / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory – Taipei

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### 測試結果(Test Results) 單位(Unit): mg/kg

測試項目 (Test Items)	測試方法 Method (Refer to)	結果 (Result)			方法偵測 極限值 (MDL)
		No.1	No.2	No.3	
鎘 / Cadmium (Cd)	(1)	n.d.	n.d.	n.d.	2
鉛 / Lead (Pb)	(2)	9280	55	8	2
汞 / Mercury (Hg)	(3)	n.d.	n.d.	n.d.	2
六價鉻 / Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	---	---	2
六價鉻 / Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(5)	---	Negative	Negative	See Note 4
<b>多溴聯苯總和 / Sum of PBBs</b>	(6)	n.d.	---	---	-
一溴聯苯 / Monobromobiphenyl		n.d.	---	---	5
二溴聯苯 / Dibromobiphenyl		n.d.	---	---	5
三溴聯苯 / Tribromobiphenyl		n.d.	---	---	5
四溴聯苯 / Tetrabromobiphenyl		n.d.	---	---	5
五溴聯苯 / Pentabromobiphenyl		n.d.	---	---	5
六溴聯苯 / Hexabromobiphenyl		n.d.	---	---	5
七溴聯苯 / Heptabromobiphenyl		n.d.	---	---	5
八溴聯苯 / Octabromobiphenyl		n.d.	---	---	5
九溴聯苯 / Nonabromobiphenyl		n.d.	---	---	5
十溴聯苯 / Decabromobiphenyl		n.d.	---	---	5
<b>多溴聯苯醚總和 / Sum of PBDEs</b>		n.d.	---	---	-
一溴聯苯醚 / Monobromodiphenyl ether		n.d.	---	---	5
二溴聯苯醚 / Dibromodiphenyl ether		n.d.	---	---	5
三溴聯苯醚 / Tribromodiphenyl ether		n.d.	---	---	5
四溴聯苯醚 / Tetrabromodiphenyl ether		n.d.	---	---	5
五溴聯苯醚 / Pentabromodiphenyl ether		n.d.	---	---	5
六溴聯苯醚 / Hexabromodiphenyl ether		n.d.	---	---	5
七溴聯苯醚 / Heptabromodiphenyl ether		n.d.	---	---	5
八溴聯苯醚 / Octabromodiphenyl ether		n.d.	---	---	5
九溴聯苯醚 / Nonabromodiphenyl ether	n.d.	---	---	5	
十溴聯苯醚 / Decabromodiphenyl ether	n.d.	---	---	5	

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# 測試報告

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### 測試部位描述 (TEST PART DESCRIPTION):

- NO.1 : 本體 (9款) (BODY (NINE TYPES))
- NO.2 : 銀色金屬鍍層 (9款) (PLATING LAYER OF SILVER COLORED METAL (NINE TYPES))
- NO.3 : 銀色金屬底材 (9款) (BASE MATERIAL OF SILVER COLORED METAL (NINE TYPES))

### 備註(Note):

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. Spot-test:

Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),

Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);

The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.

(當該測項無法確認時, 測試樣品可藉由boiling-water-extraction測試方法進一步確認)

#### Boiling-water-extraction:

Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),

Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);

the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

該溶液濃度 $\geq$ 0.02 mg/kg with 50 cm<sup>2</sup> (sample surface area)

5. "-" = Not Regulated (無規格值)
6. "---" = Not Conducted (未測項目)

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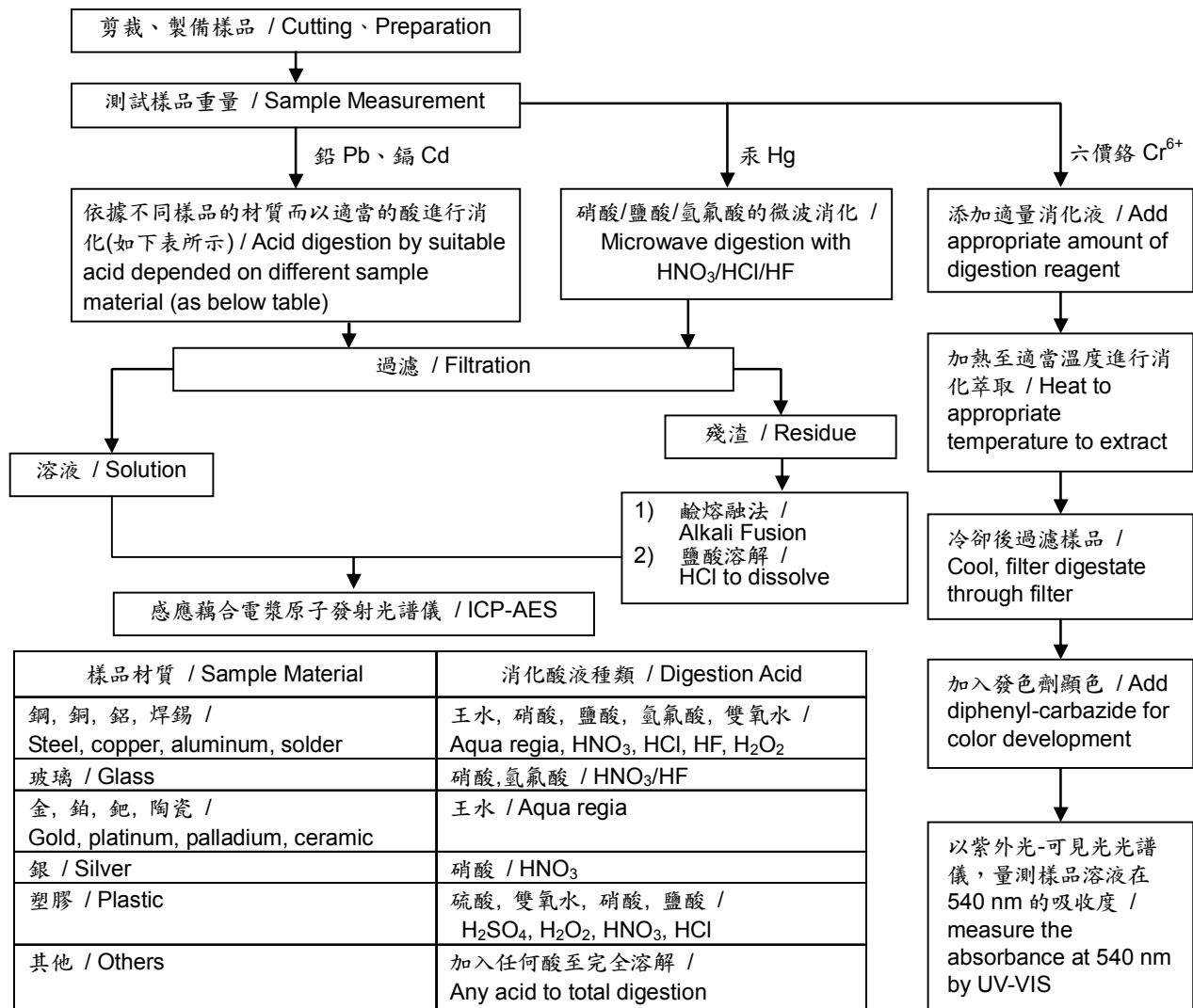
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NO.1 AND NO.3

- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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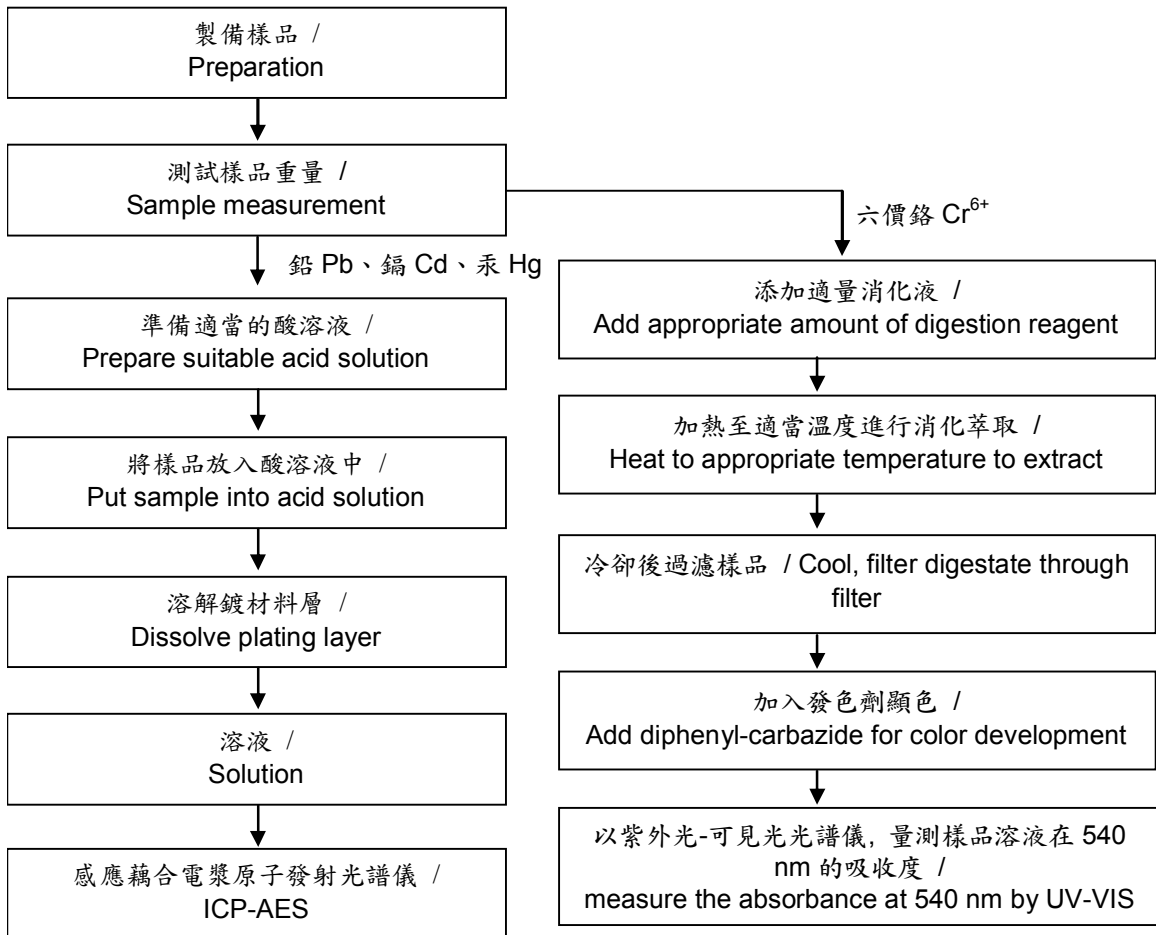
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NO.2

- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

### 鍍層重金屬測試流程圖 / Flow Chart of Stripping method for metal analysis



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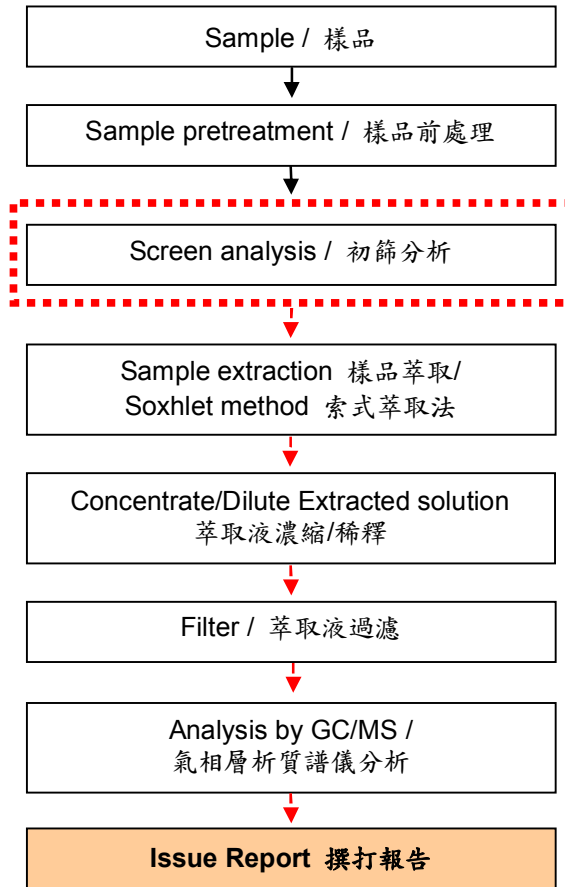
### 多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

- 1) 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 2) 測試負責人：陳新智 / Name of the person in charge of measurement: Shinjyh Chen

初次測試程序 / First testing process —————>

選擇性篩檢程序 / Optional screen process .....>

確認程序 / Confirmation process - - - ->



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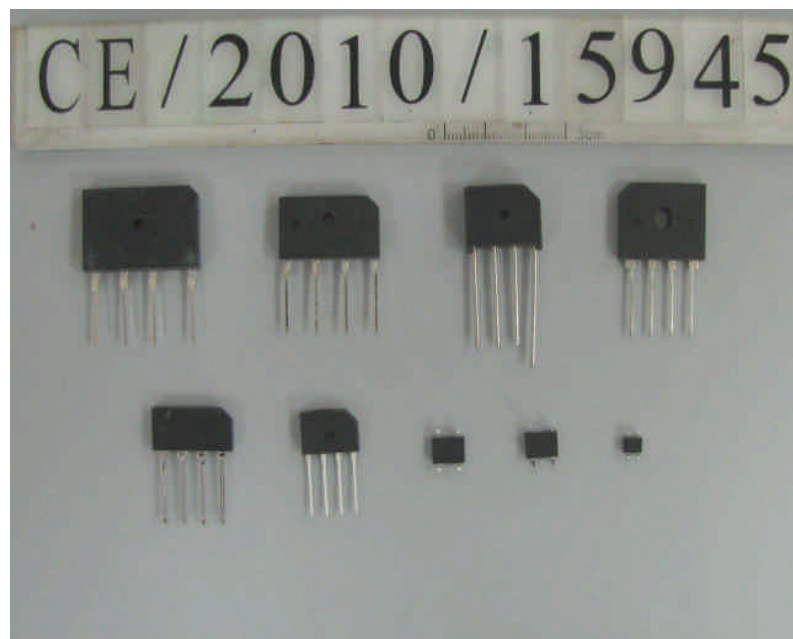
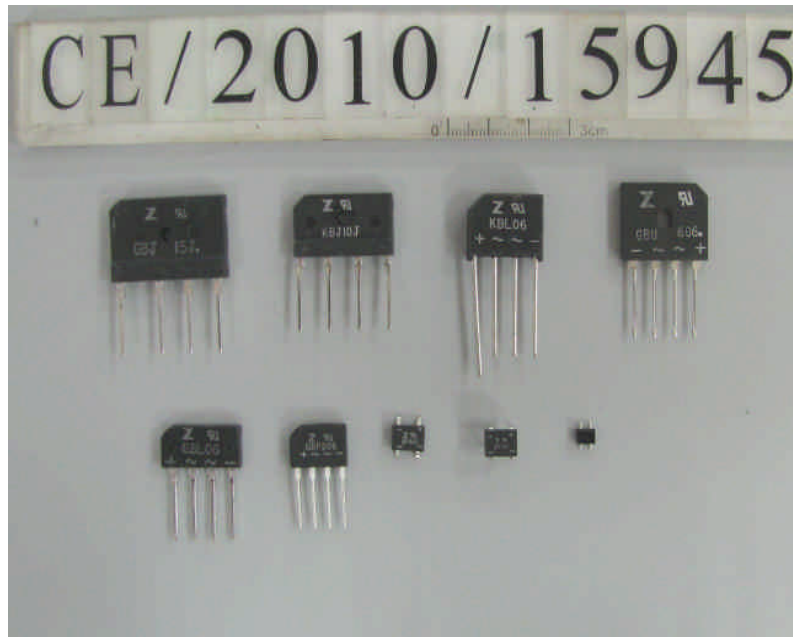
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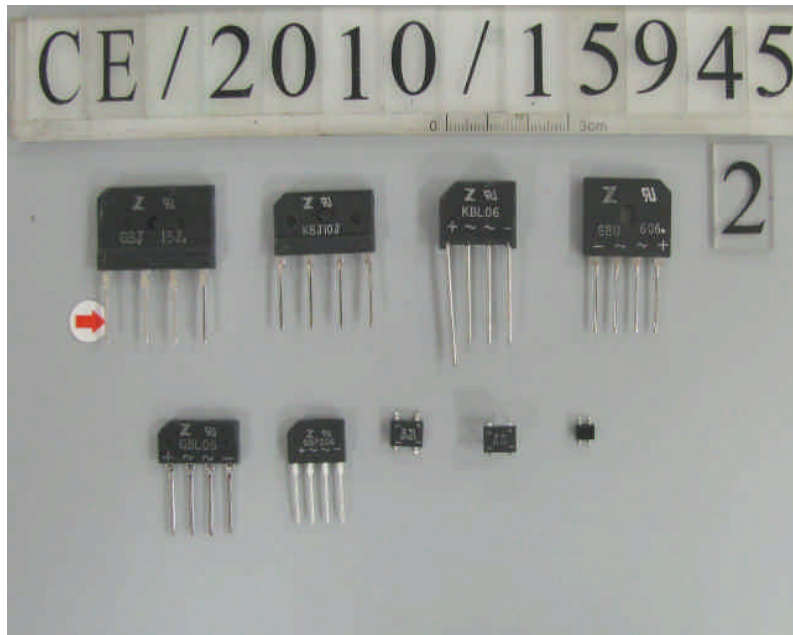
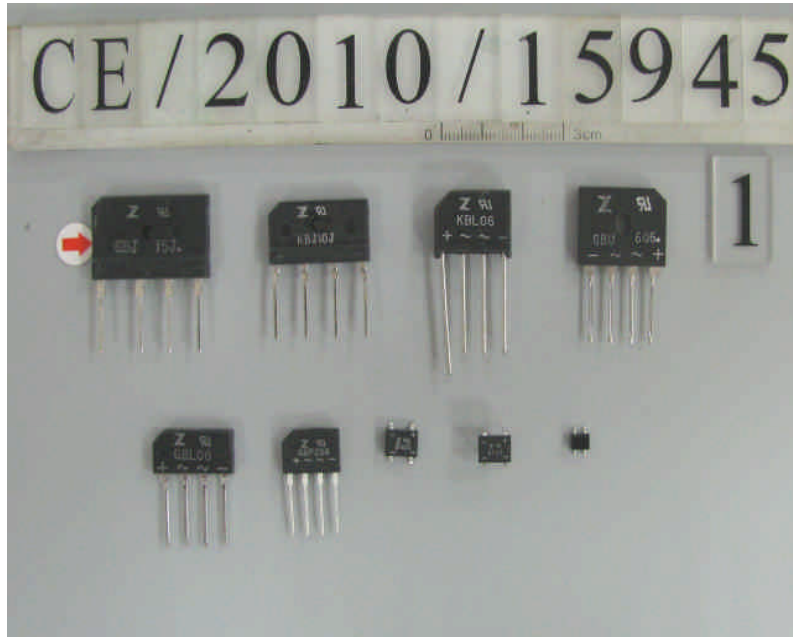
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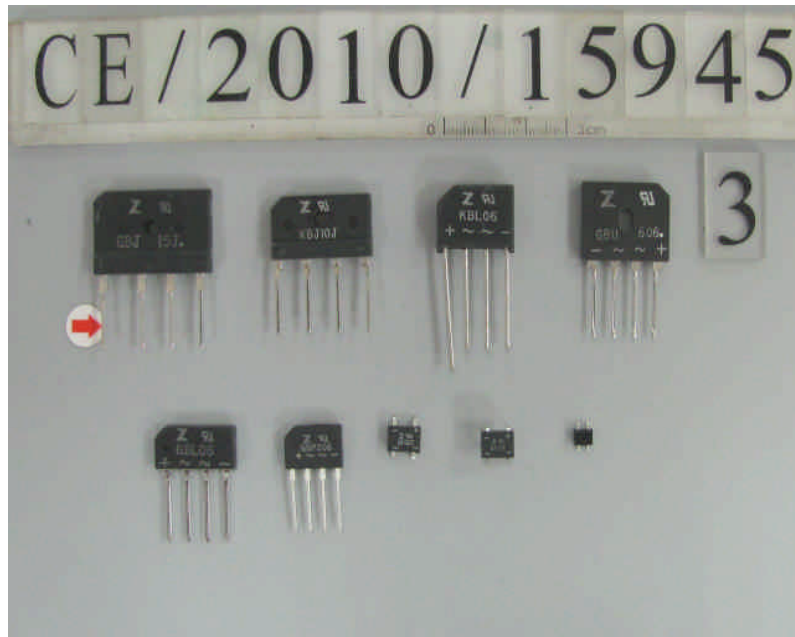
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