

# Specification for Approval

**Date:** 2012/12/07

**Customer :** 天河

**TAI-TECH P/N:** SDSL10D50F-220M

**CUSTOMER P/N:** \_\_\_\_\_

**DESCRIPTION:** \_\_\_\_\_

**QUANTITY:** \_\_\_\_\_ pcs

<b>REMARK:</b>		
Customer Approval Feedback		

西北臺慶科技股份有限公司  
**TAI-TECH Advanced Electronics Co., Ltd**

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R&D Center

APPROVED	CHECKED	DRAWN
許智良 Chig-liang Shu	張榮泉 Nick Chang	徐允珮 Shelly Hsu

**SMD Type Power Inductor**

SDSL10D50F-220M

**ECN HISTORY LIST**

REV	DATE	DESCRIPTION	APPROVED	CHECKED	DRAWN
1.0	12/12/07	新發行	許智良	張榮泉	徐允珮
備註					

# SMD Type Power Inductor

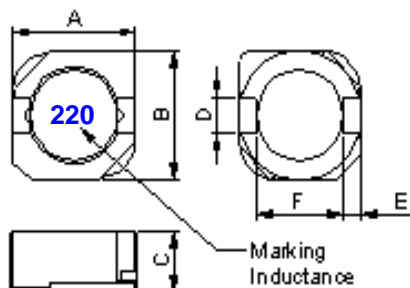
SDSL10D50F-220M

## 1. Features

- 1.Low profile very effective in space-conscious applications.
- 2.Low resistance and high energy storage.
- 3.100% Lead(Pb) & Halogen-Free and RoHS compliant.



## 2. Dimension



Series	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)
SDSL10D50F	10.5 max.	10.3 max.	5.0 max.	3.0 ref.	1.2±0.15	7.7±0.3

Units: mm

## 3. Part Numbering



A: Series

B: Dimension

C: Lead free type

D: Inductance

E: Inductance Tolerance

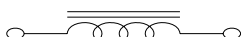
220=22uH

M=±20%

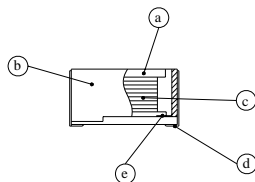
## 4. Specification

TAI-TECH Part Number	Inductance (uH)	Test Frequency (Hz)	DCR (mΩ) max.	I sat (A) max.	I rms (A) typ.
SDSL10D50F-220M	22±20%	0.1V/100K	61.0	2.90	2.95

## 5. Schematic Diagram

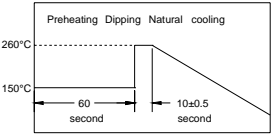
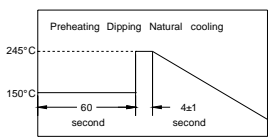


## 6. Materials

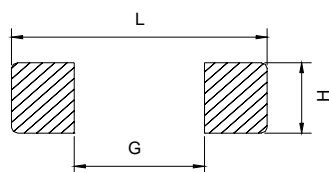


No.	Description	Specification
a.	Core	Ferrite DR Core
b.	Core	Ferrite RI Core
c.	Wire	Enamelled Copper Wire
d.	Terminal	Tinned Copper Plate
e.	Adhesive	Epoxy

### 7. Reliability and Test Condition

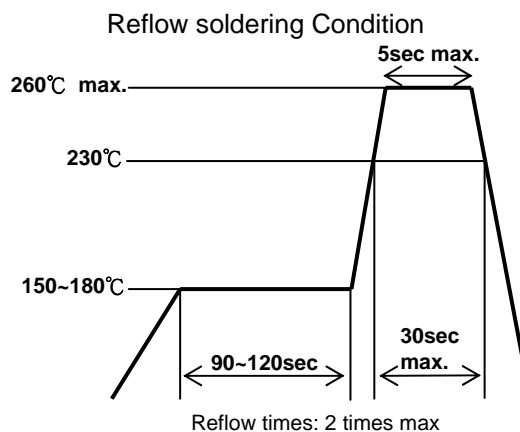
Item	Performance	Test Condition															
Operating Temperature	-40~+125°C																
Storage temperature	-40~+85°C (For products in unopened tape package, less than 40°C)																
Rated Current	Base on temp. rise & $\Delta L/LOA=35\%$ typ.																
Temperature Rise Test	40°C max. ( $\Delta t$ )																
Solder heat Resistance	Appearance: No significant abnormality. Inductance change: Within $\pm 20\%$ .	 <p>Preheat:150°C,60sec. Solder : Sn-Ag3.0-Cu0.5 Solder temperature:260±5°C Flux: rosin Dip time:10±0.5sec.</p>															
Solderability	More than 90% of the terminal electrode should be covered with solder.	 <p>Preheat:125±25°C,60sec. Solder : Sn-Ag3.0-Cu0.5 Solder temperature:245±5°C Flux: rosin Dip time:4±1sec.</p>															
Thermal shock	Appearance: no damage. Inductance: within±20%of initial value.	<table border="1" data-bbox="746 840 1045 1070"> <thead> <tr> <th>Phase</th> <th>Temperature(°C)</th> <th>Time(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25±2°C</td> <td>30±3</td> </tr> <tr> <td>2</td> <td>Room Temp.</td> <td>15</td> </tr> <tr> <td>3</td> <td>+85±2°C</td> <td>30±3</td> </tr> <tr> <td>4</td> <td>Room Temp.</td> <td>15</td> </tr> </tbody> </table> <p>For SDSL Condition for 1 cycle Step1:-25±2°C 30±3 min. Step2:Room temperature 15 min. Step3:+85±5°C 30±3 min. Step4: Room temperature 15 min. Number of cycles:50 Measured:50 times</p>	Phase	Temperature(°C)	Time(min)	1	-25±2°C	30±3	2	Room Temp.	15	3	+85±2°C	30±3	4	Room Temp.	15
Phase	Temperature(°C)	Time(min)															
1	-25±2°C	30±3															
2	Room Temp.	15															
3	+85±2°C	30±3															
4	Room Temp.	15															
Humidity Resistance Test	Appearance: no damage. Inductance: within±20%of initial value.	Temperature:40±2°C. Applied current:rated current. Duration:500 hrs. Humidity:90~95%															
High Temperature Resistance Test	Appearance: no damage. Inductance: within±20%of initial value.	Temperature:85±2°C. Applied current:rated current. Duration:500 hrs.															
Random Vibration Test	Appearance: Cracking, shipping and any other defects harmful to the characteristics should not be allowed. Inductance: within±20%of initial value.	Frequency: 10-55-10Hz for 1 min. Amplitude: 1.52mm Directions and times: X, Y, Z directions for 2 hours. A period of 2 hours in each of 3 mutually perpendicular directions (Total 6 hours).															

### 8. Recommended PC Board Pattern



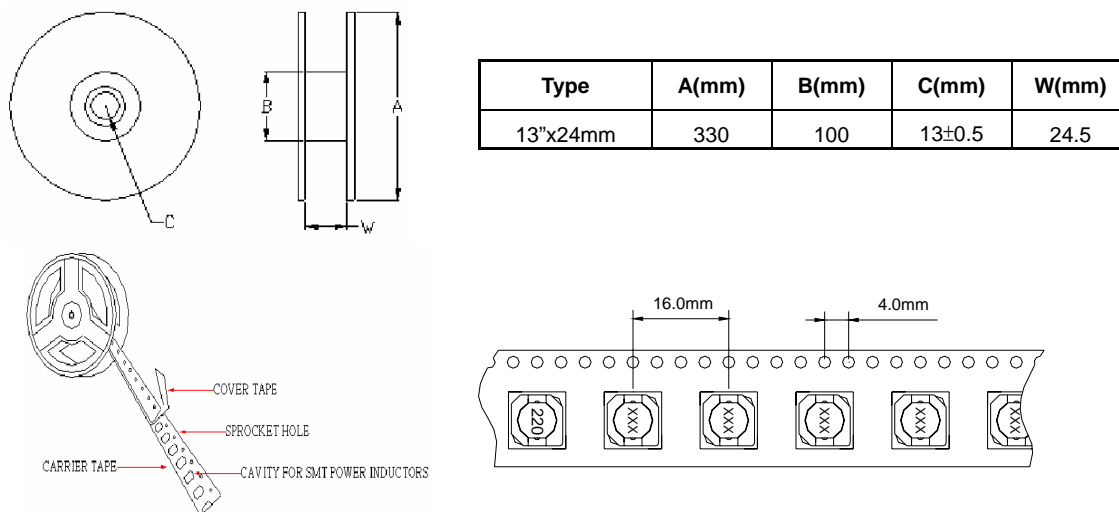
SDSL	10D50F
L	10.5
G	7.3
H	3.2

Units: mm



## 9. Packaging Information

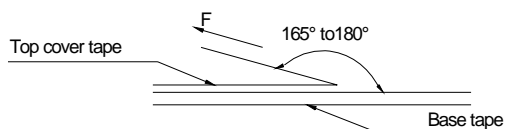
### 9-1. Reel Dimension & Tape Dimension



### 9-2. Packaging Quantity

SDSL	10D50F
Chip / Reel	750
Carton	4500
Reel Style	13"x24mm

### 9-3. Tearing Off Force



The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions(referenced ANSI/EIA-481-C-2003 of 4.11 stadnard).

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed mm/min
5~35	45~85	860~1060	300

#### Application Notice

- Storage Conditions  
To maintain the solderability of terminal electrodes:
  1. Temperature and humidity conditions: Less than 40°C and 60% RH.
  2. Recommended products should be used within 12 months form the time of delivery.
  3. The packaging material should be kept where no chlorine or sulfur exists in the air.
- Transportation
  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

# 測試報告

## Test Report

號碼(No.) : CE/2012/21594 日期(Date) : 2012/02/20 頁數(Page) : 1 of 8

西北臺慶科技股份有限公司 / TAI-TECH ADVANCED ELECTRONICS CO., LTD.

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(江蘇省昆山市蓬朗昆嘉高科技工業區郭澤路 / GUO-ZE ROAD, KUNJIA HI-TECH INDUSTRIAL PARK, KUN-SHAN, JIANG-SU, CHINA)



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) : SSL、SPL、SSLM、SDSW、SDSL、SDSG SERIES

樣品型號(Style/Item No.) : SSL、SPL、SSLM、SDSW、SDSL、SDSG SERIES

收件日期(Sample Receiving Date) : 2012/02/14

測試期間(Testing Period) : 2012/02/14 TO 2012/02/20

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

1. 簽字日期: 2012/02/20

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

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## 測試報告 Test Report

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### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 整體混測 (MIXED ALL PARTS)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321: 2008 and performed by ICP-AES.	2	n.d.
鉛 / Lead (Pb)	mg/kg		2	n.d.
汞 / Mercury (Hg)	mg/kg		2	n.d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考IEC 62321: 2008方法, 以UV-VIS檢測. / With reference to IEC 62321: 2008 and performed by UV-VIS.	2	n.d.
鹵素 / Halogen				
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	參考BS EN 14582:2007, 以離子層析儀分析. / With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)	mg/kg		50	n.d.
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg		50	n.d.
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.

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# 測試報告

## Test Report

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)
				No.1
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321: 2008方法, 以氣相層析儀/ 質譜儀檢測. / With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
一溴聯苯 / Monobromobiphenyl	mg/kg		5	n.d.
二溴聯苯 / Dibromobiphenyl	mg/kg		5	n.d.
三溴聯苯 / Tribromobiphenyl	mg/kg		5	n.d.
四溴聯苯 / Tetrabromobiphenyl	mg/kg		5	n.d.
五溴聯苯 / Pentabromobiphenyl	mg/kg		5	n.d.
六溴聯苯 / Hexabromobiphenyl	mg/kg		5	n.d.
七溴聯苯 / Heptabromobiphenyl	mg/kg		5	n.d.
八溴聯苯 / Octabromobiphenyl	mg/kg		5	n.d.
九溴聯苯 / Nonabromobiphenyl	mg/kg		5	n.d.
十溴聯苯 / Decabromobiphenyl	mg/kg		5	n.d.
多溴聯苯醚總和 / Sum of PBDEs	mg/kg		-	n.d.
一溴聯苯醚 / Monobromodiphenyl ether	mg/kg		5	n.d.
二溴聯苯醚 / Dibromodiphenyl ether	mg/kg		5	n.d.
三溴聯苯醚 / Tribromodiphenyl ether	mg/kg		5	n.d.
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg		5	n.d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg		5	n.d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg		5	n.d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg		5	n.d.
八溴聯苯醚 / Octabromodiphenyl ether	mg/kg		5	n.d.
九溴聯苯醚 / Nonabromodiphenyl ether	mg/kg	5	n.d.	
十溴聯苯醚 / Decabromodiphenyl ether	mg/kg	5	n.d.	

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### 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. "-" = Not Regulated (無規格值)
5. 樣品的測試是基於申請人要求混合測試，報告中的混合測試結果不代表其中個別單一材質的含量。(The samples was/were analyzed on behalf of the applicant as mixing sample in one testing. The above results was/were only given as the informality value.)

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## 測試報告 Test Report

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(東莞臺慶精密電子有限公司 / TAI-TECH ADVANCED ELECTRONICS (DONGGUAN) CO., LTD.)

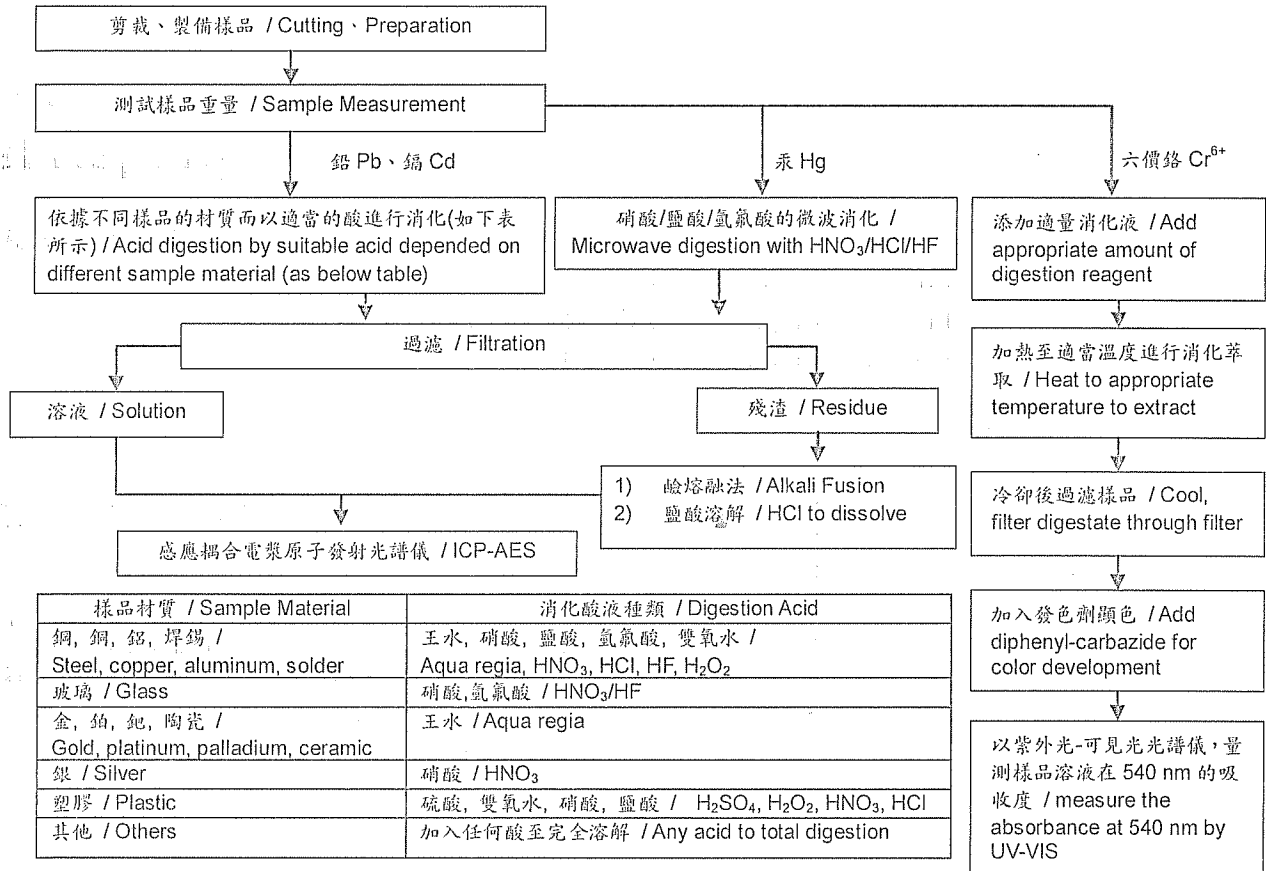
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- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
-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



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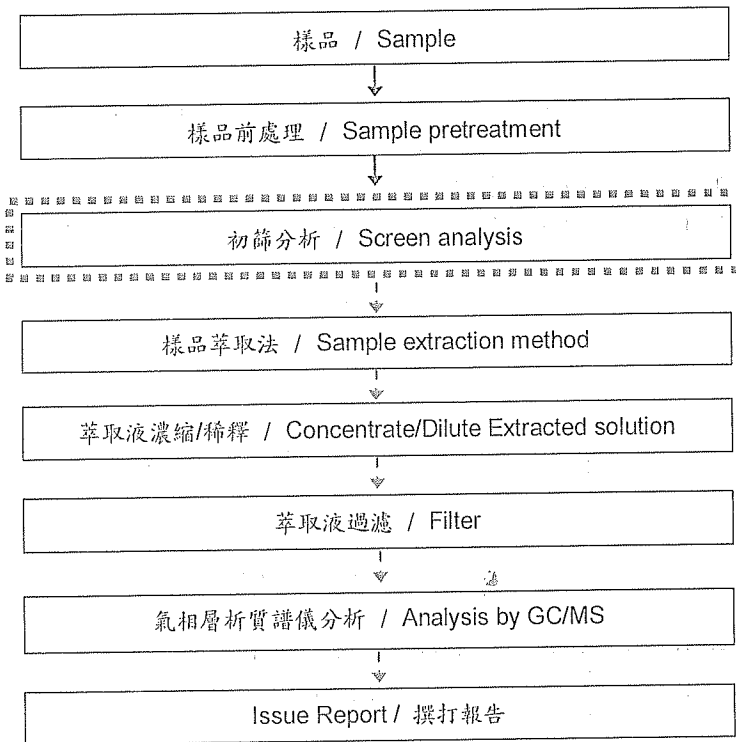
### 分析流程圖 / Analytical flow chart

■ 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong

■ 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

【測試項目(Test Items): 多溴聯苯/多溴聯苯醚、四溴雙酚-A-雙 / PBB/PBDE, TBBP-A-bis】

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 →

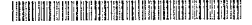


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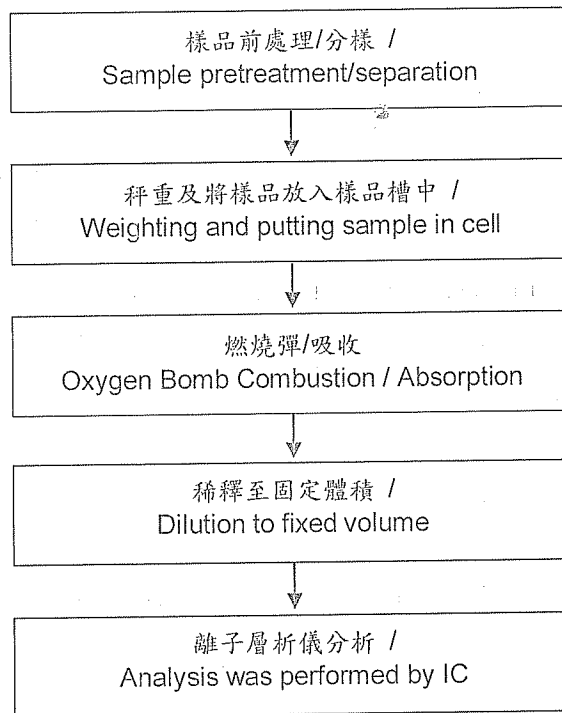
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### 鹵素分析流程圖 / Analytical flow chart of halogen content

- 1) 測試人員：陳恩臻 / Name of the person who made measurement: Rita Chen
- 2) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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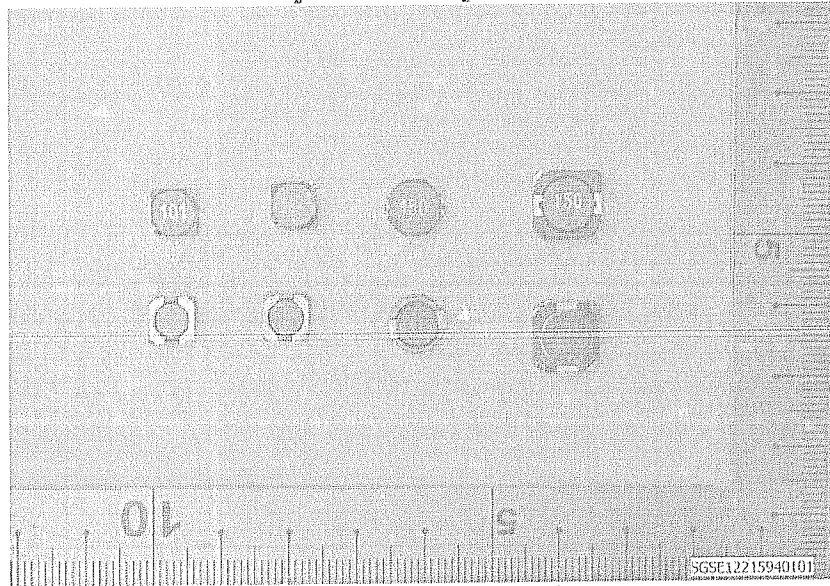
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\* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。\*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

### CE/2012/21594



\*\* 報告結尾 (End of Report) \*\*

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