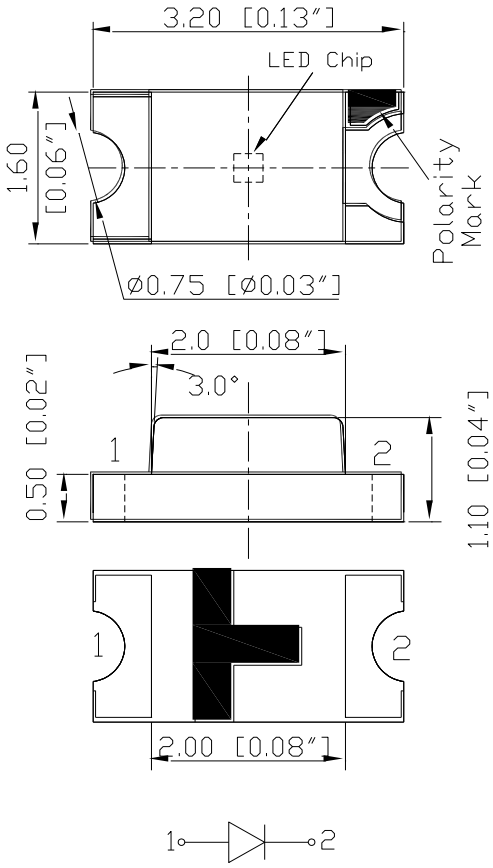
SURFACE MOUNT LED LAMPS

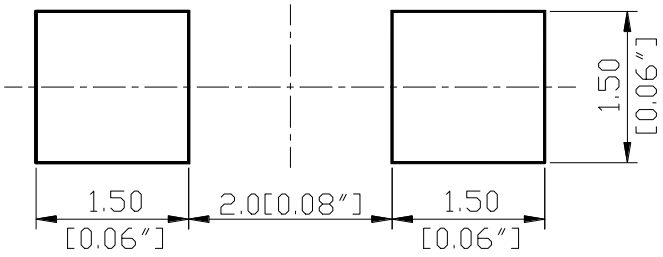
S150 Series SMD Chip LED Lamps

Part Number: N0G17S90

Package outlines



RECOMMEND PAD LAYOUT



ITEM	MATERIALS
Resin (mold)	Epoxy
Bonding Wire	Ø 25 μm Au
Lens color	Water transparent
Printed circuit board	BT (white)
Dice	AlGaInP/GaAs
Emitted color	Green

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

NOTES:
1. All dimensions are in millimeters (inches);
2. Tolerances are ±0.1mm (0.004inch) unless otherwise noted.

Rev :	Date	Drawn by :	Checked by :	Approved by :
A	2010/06/15	李梅英	許媚鳳	黃靜文

SURFACE MOUNT LED LAMPS

Part Number: N0G17S90

Absolute maximum ratings (T_A=25℃)

Parameter	Symbol	Value	Unit
Forward current	If	30	mA
Reverse voltage	Vr	5	V
Power dissipation	Pd	75	mW
Operating temperature range	Top	-40 ~+80	℃
Storage temperature range	Tstg	-40 ~+85	℃
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125	mA

Electro-optical characteristics (T_A=25℃)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	If=20mA	λpeak	--	570	--	nm
Spectral half bandwidth	If=20mA	△λ	--	17	--	nm
Dominant wavelength	If=20mA	λdom	565	--	576	nm
Forward voltage	If=20mA	Vf	1.7	--	2.5	V
Luminous intensity	If=20mA	Iv	32	60	--	mcd
Viewing angle at 50% Iv	If=10mA	2θ1/2	--	140	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

SURFACE MOUNT LED LAMPS

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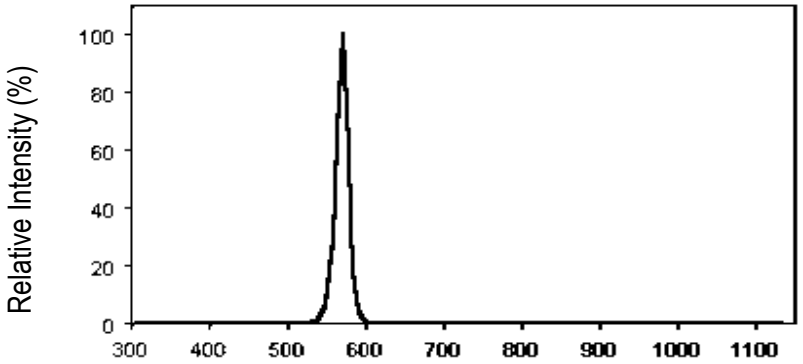
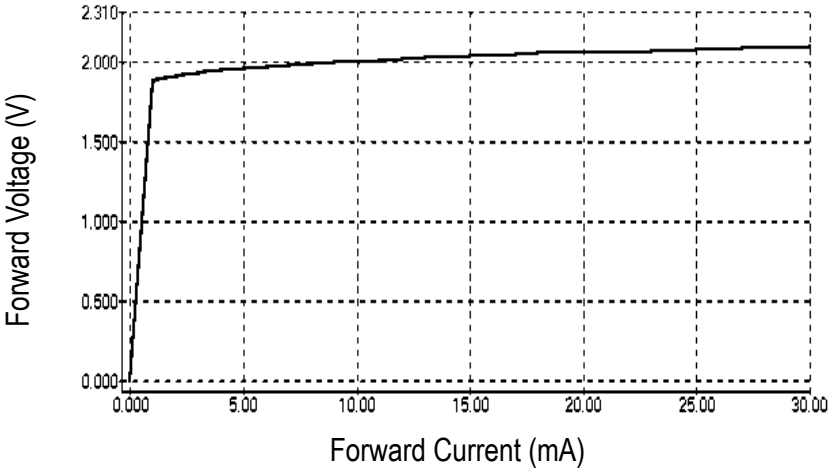
OPTICAL CHARACTERISTIC CURVES

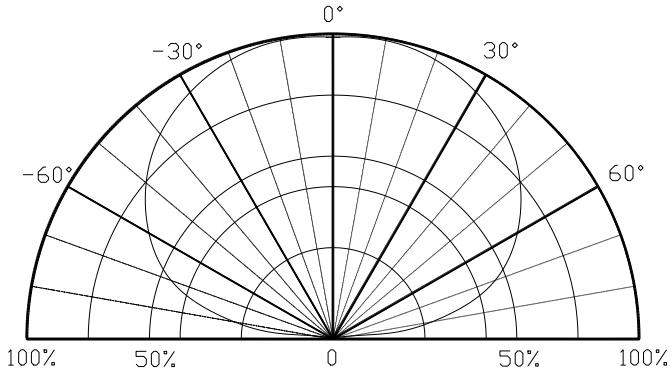
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



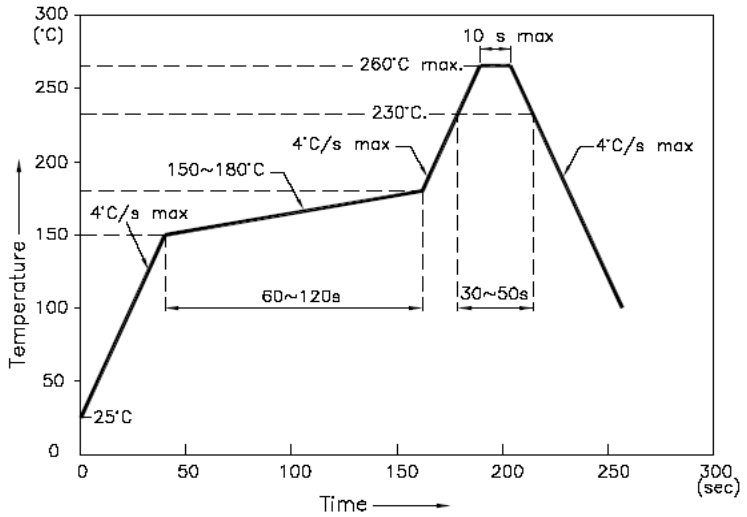
Directive Characteristics



SURFACE MOUNT LED LAMPS

Reflow Profile

■ Reflow Temp/Time



NOTES:

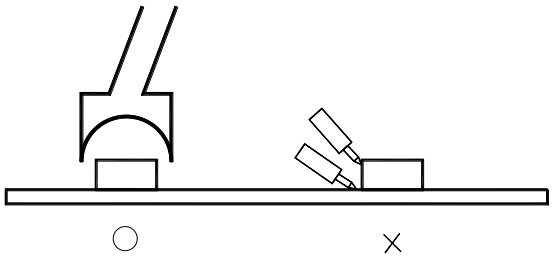
1. We recommend the reflow temperature 245℃(±5℃).the maximum soldering temperature should be limited to 260℃.
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■Soldering iron

Basic spec is ≤ 5sec when 260°C. If temperature is higher, time should be shorter (+10°C→ -1sec).Power dissipation of iron should be smaller than 20W, and temperatures should be controllable .Surface temperature of the device should be under 230°C .

■Rework

1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

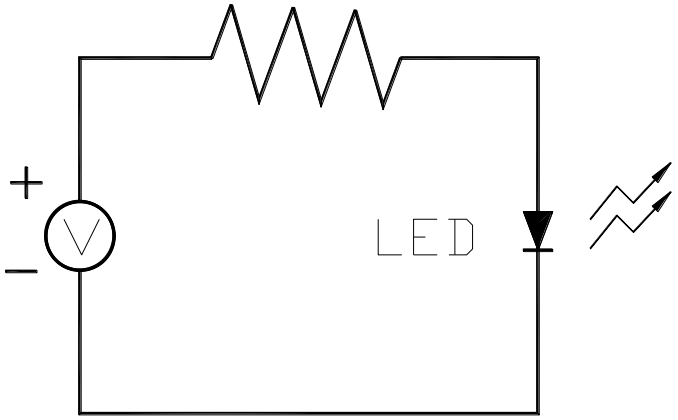


■ **Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.**

SURFACE MOUNT LED LAMPS

Test circuit and handling precautions

■ Test circuit



■ Handling precautions

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2.Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5℃~30℃(41℉~86℉)

2.2 Shelf life in sealed bag: 12 month at ＜5℃~30℃ and ＜30% R.H. after the package is Opened, the products should be used within a week or they should be keeping to stored at ≦20 R.H. with zip-lock sealed.

3.Baking

It is recommended to baking before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1 60±3℃ x(12~24hrs) and ＜5%RH, taped reel type

3.2 100±3℃ x(45min~1hr), bulk type

3.3 130±3℃ x(15~30min), bulk type

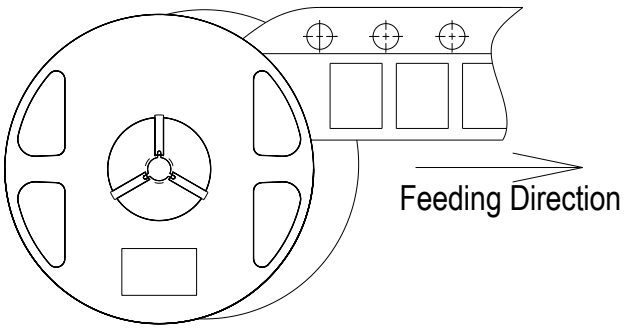
SURFACE MOUNT LED LAMPS

Test items and results of reliability

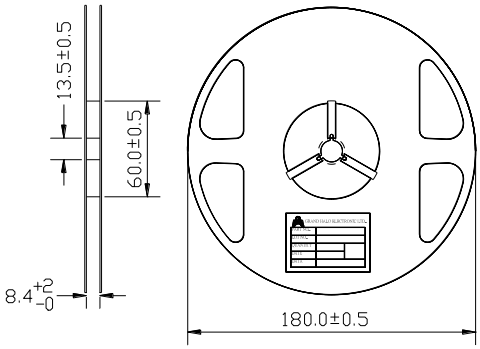
Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20℃ 30min ↑ ↓ 80℃ 30min	100 cycle	0/22
	Thermal Shock	-20℃ 15min ↑ ↓ 80℃ 15min	100 cycle	0/22
	High Humidity Heat Cycle	30℃⇔ 65℃ 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T_a=80℃	1000 hrs	0/22
	Humidity Heat Storage	T_a=60℃ RH=90%	1000 hrs	0/22
	Low Temperature Storage	T_a=-30℃	1000 hrs	0/22
Operation Sequence	Life Test	T_a=25℃ I_F=20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60℃ RH=90% I_F=10mA	500 hrs	0/22
	Low Temperature Life Test	T_a=-20℃ I_F=20mA	1000 hrs	0/22

S150 Series SMD Chip LED Lamps Packaging Specifications

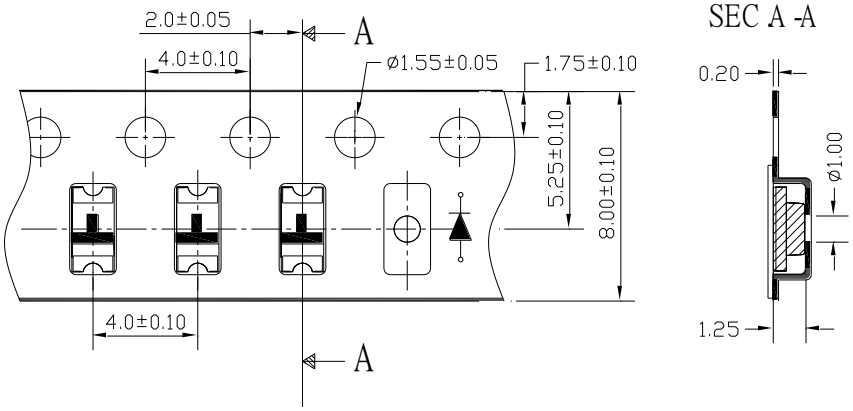
- **Feeding Direction**



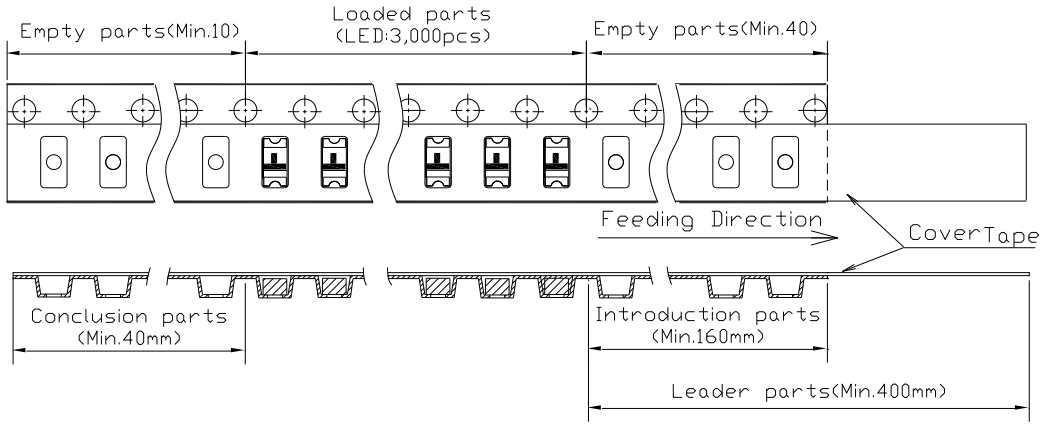
- **Dimensions of Reel (Unit: mm)**



- **Dimensions of Tape (Unit: mm)**



- **Arrangement of Tape**

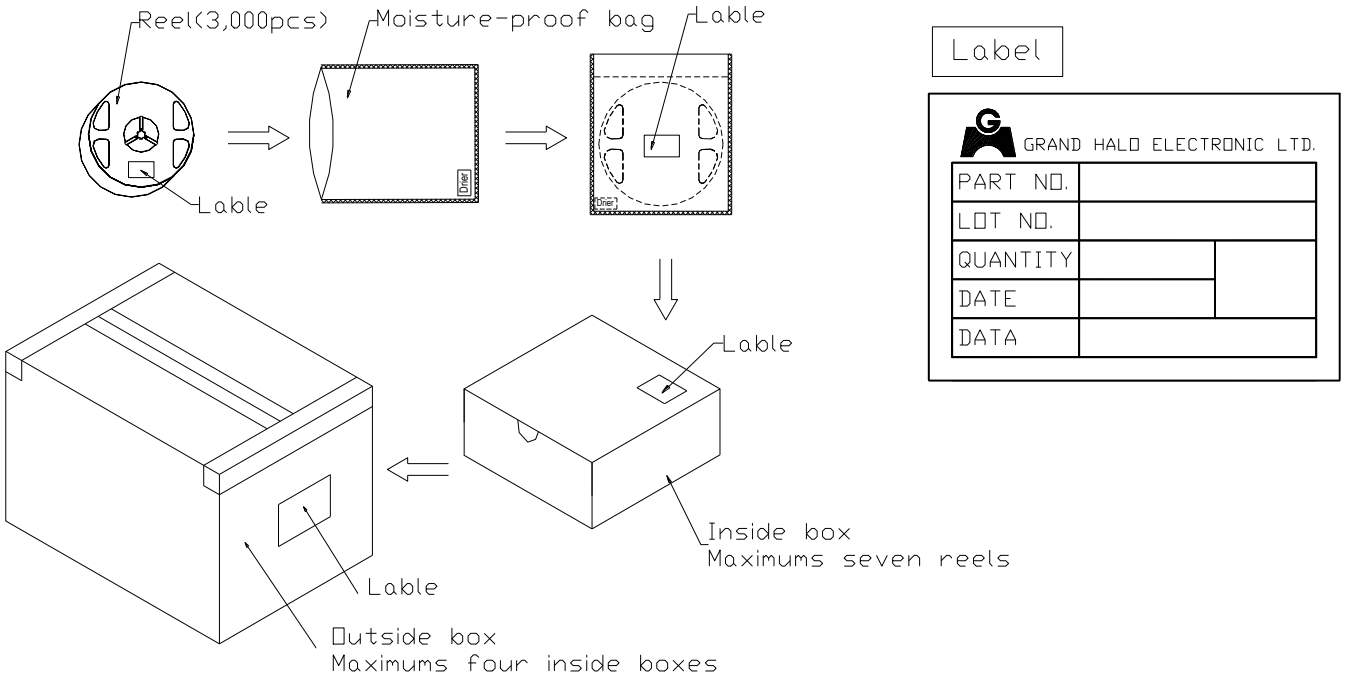


NOTES

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.
4. 3,000 pcs/Reel

S150 Series SMD Chip LED Lamps Packaging Specifications

- **Packaging specifications**



NOTES:

Reeled products (numbers of products are 3,000pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, Seven moisture-proof bag of maximums (total maximum number of products are 21,000pcs) packed in an inside box (size: about 238mm x about 194mm x about 102mm) and four inside boxes of maximums are put in the outside box (size: about 410mm x about 254mm x about 229mm) Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has it to three steps.

SURFACE MOUNT LED LAMPS
表面黏著型發光二極體指示燈

Part Number: N0G17S90

Forward Voltage Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
□	1.7	2.5	V

Luminous Intensity Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
E	32	40	mcd
F	40	50	
G	50	63	
H	63	80	
I	80	--	

Dominant wavelength Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
h	565	568	nm
i	568	572	
j	572	576	

Group Name on Label (Example DATA: □Gi 20)

DATA: □Gi 20	Vf(V)	Iv (mcd)	λd (nm)	Test Condition
□→G→i→20	1.7~2.5	50~63	568~572	IF=20mA

* NOTE:

1. The tolerance of luminous intensity (Iv)is ±15％.
2. The tolerance of dominant wavelength is ±1nm.
3. This specification is preliminary.

Number : TWNC00142798

Test Conducted

(1) Test Result Summary 測試結果 :

Testing Item 測試項目	Result 結果 (ppm) Submitted Samples (Mixed All Parts)
Heavy Metal / 重金屬	
Cadmium (Cd) content / 鎘含量	ND
Lead (Pb) content / 鉛含量	ND
Mercury (Hg) content / 汞含量	ND
Chromium VI (Cr^{6+}) content / 六價鉻含量	ND
Polybrominated Biphenyls (PBBs) / 多溴聯苯	
Monobrominated Biphenyls (MonoBB) / 單溴聯苯	ND
Dibrominated Biphenyls (DiBB) / 二溴聯苯	ND
Tribrominated Biphenyls (TriBB) / 三溴聯苯	ND
Tetrabrominated Biphenyls (TetraBB) / 四溴聯苯	ND
Pentabrominated Biphenyls (PentaBB) / 五溴聯苯	ND
Hexabrominated Biphenyls (HexaBB) / 六溴聯苯	ND
Heptabrominated Biphenyls (HeptaBB) / 七溴聯苯	ND
Octabrominated Biphenyls (OctaBB) / 八溴聯苯	ND
Nonabrominated Biphenyls (NonaBB) / 九溴聯苯	ND
Decabrominated Biphenyl (DecaBB) / 十溴聯苯	ND
Polybrominated Diphenyl Ethers (PBDEs) / 多溴聯苯醚	
Monobrominated Diphenyl Ethers (MonoBDE) / 單溴聯苯醚	ND
Dibrominated Diphenyl Ethers (DiBDE) / 二溴聯苯醚	ND
Tribrominated Diphenyl Ethers (TriBDE) / 三溴聯苯醚	ND
Tetrabrominated Diphenyl Ethers (TetraBDE) / 四溴聯苯醚	ND
Pentabrominated Diphenyl Ethers (PentaBDE) / 五溴聯苯醚	ND
Hexabrominated Diphenyl Ethers (HexaBDE) / 六溴聯苯醚	ND
Heptabrominated Diphenyl Ethers (HeptaBDE) / 七溴聯苯醚	ND
Octabrominated Diphenyl Ethers (OctaBDE) / 八溴聯苯醚	ND
Nonabrominated Diphenyl Ethers (NonaBDE) / 九溴聯苯醚	ND
Decabrominated Diphenyl Ether (DecaBDE) / 十溴聯苯醚	ND

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Number : TWNC00142798

Test Conducted

(I) Test Result Summary 測試結果 :

Testing Item 測試項目	Result 結果 (ppm) Submitted Samples (Mixed All Parts)
Halogen Content / 鹵素含量	
Fluorine (F) / 氟	305
Chlorine (Cl) / 氯	278
Bromine (Br) / 溴	ND
Iodine (I) / 碘	ND
Others 其他	
Perfluorooctane Sulfonates (PFOS) / 全氟辛磺酸	ND
Perfluorooctanoic Acid (PFOA) / 全氟辛酸	ND

Remarks: ppm = parts per million based on weight of tested sample = mg/kg
備註 = 百萬分之一，依據測試樣品重量計算
ND = Not Detected = 未檢測出

Responsibility Of Chemist 分析人員 : Irene Chiou / Kevin Liu / Cathy Chen

Date Sample Received 樣品收件日期 : Dec 17, 2009
Testing Period 樣品測試期間 : Dec 19, 2009 To Dec 24, 2009

(II) RoHS Requirement 限值:

Restricted Substances 限用物質	Limits 限值
Cadmium (Cd) content / 鎘含量	0.01% (100ppm)
Lead (Pb) content / 鉛含量	0.1% (1000ppm)
Mercury (Hg) content / 汞含量	0.1% (1000ppm)
Chromium VI (Cr^{6+}) content / 六價鉻含量	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs) /多溴聯苯	0.1% (1000ppm)
Polybrominated Diphenyl Ehters (PBDEs) / 多溴聯苯醚	0.1% (1000ppm)

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.
本限值是依據歐盟指令2002/95/EC與其更新指令2005/618/EC針對均質材質所訂定。

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Test Conducted

(Ⅲ) Test Method 測試方法:

Testing Item 測試項目	Testing Method 測試方法	Reporting Limit 報告極限
Cadmium (Cd) content 鎘含量	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. 參考IEC 62321, 2008年第一版第8/9/10章, 以微波消化法測試樣品直到樣品完全溶解並用感應耦合電漿原子放射光譜儀分析。	2 ppm
Lead (Pb) content 鉛含量	With reference to IEC 62321 edition 1.0:2008 in clause 8/9/10, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. 參考IEC 62321, 2008年第一版第8/9/10章, 以微波消化法測試樣品直到樣品完全溶解並用感應耦合電漿原子放射光譜儀分析。	2 ppm
Mercury (Hg) content 汞含量	With reference to IEC 62321 edition 1.0:2008 in clause 7, by microwave digestion until the tested samples are totally dissolved and determined by ICP-OES. 參考IEC 62321, 2008年第一版第7章, 以微波消化法測試樣品直到樣品完全溶解並用感應耦合電漿原子放射光譜儀分析。	2 ppm
Chromium VI (Cr^{6+}) content 六價鉻含量	With reference to IEC 62321 edition 1.0:2008 in annex C, by alkaline digestion and determined by UV-Vis spectrophotometer. 參考IEC 62321, 2008年第一版附錄C, 以鹼液消化並用紫外光-可見光分光光度計分析。	1 ppm
Polybrominated Biphenyls (PBBs) 多溴聯苯	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary 參考IEC 62321, 2008年第一版附錄A, 以溶劑萃取並用氣相層析質譜儀分析, 必要時會以高效能液相層析-二極體陣列偵檢器進行確認。	5 ppm

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Number : TWNC00142798

Test Conducted

(Ⅲ) Test Method 測試方法:

Testing Item 測試項目	Testing Method 測試方法	Reporting Limit 報告極限
Polybrominated Diphenyl Ethers (PBDEs) 多溴聯苯醚	With reference to IEC 62321 edition 1.0:2008 in annex A, by solvent extraction and determined by GC-MSD and further HPLC confirmation when necessary 參考IEC 62321, 2008年第一版附錄A, 以溶劑萃取並用氣相層析質譜儀分析, 必要時會以高效能液相層析-二極體陣列偵檢器進行確認。	5 ppm
Halogen Content 鹵素含量	With reference to EN 14582:2007 by combustion flask with oxygen and determined by ion chromatography 參考EN 14582:2007, 以氧氣燃燒瓶燃燒集氣法並用離子層析儀分析。	50 ppm
Perfluorooctane Sulfonates (PFOS) 全氟辛磺酸	By solvent extraction and determined by LC-MS 以溶劑萃取並用液相層析質譜儀分析。	10 ppm
Perfluorooctanoic Acid (PFOA) 全氟辛酸	By solvent extraction and determined by LC-MS 以溶劑萃取並用液相層析質譜儀分析。	10 ppm

Remark: Reporting Limit = Quantitation limit of analyte in sample
備註 報告極限 = 測試樣品之定量偵測極限

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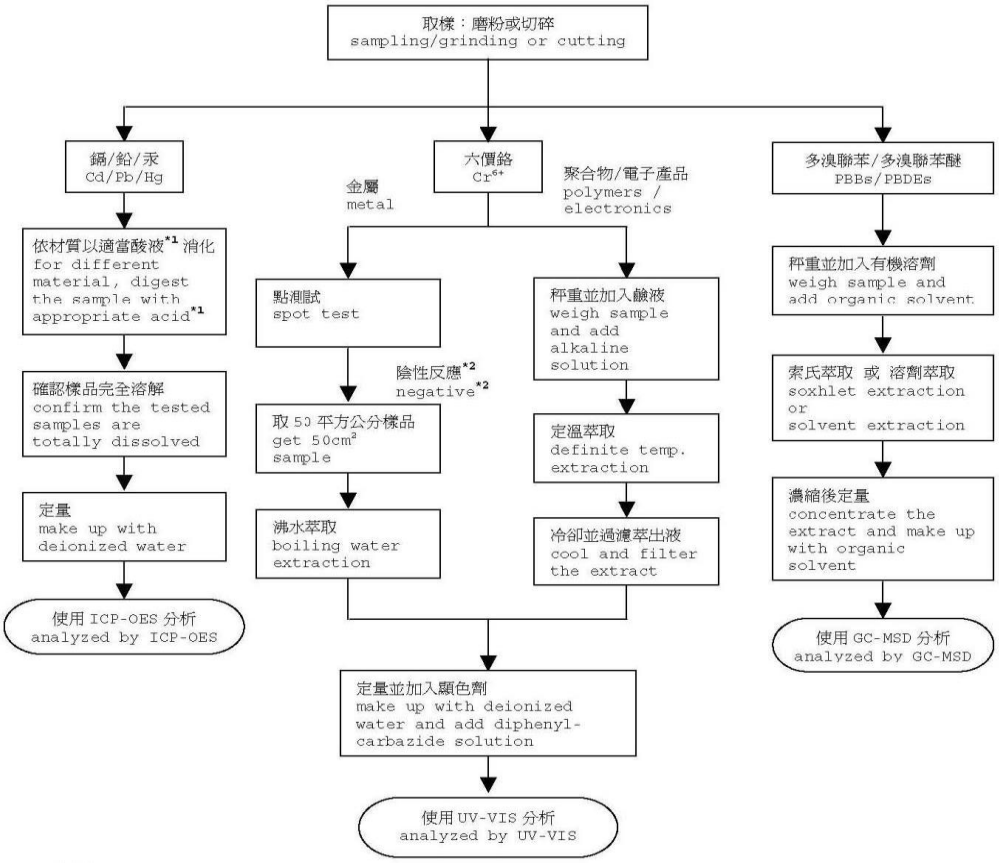
Test Conducted

(Ⅳ) Measurement Flowchart 測試流程圖:

Test For Cd/Pb/Hg/Chromium (VI)/PBBs/PBDEs Contents RoHS六項測試流程圖
Reference Standard 參考方法: IEC 62321 edition 1.0:2008



Remarks 備註:

*1: List Of Appropriate Acid 各材質添加酸液如下表:

Material 樣品材質	Acid Added For Digestion 添加酸液種類
Polymers / 聚合物	HNO_3,HCl,HF,H_2O_2,H_3BO_3 硝酸、鹽酸、氫氟酸、雙氧水、硼酸
Metals / 金屬	HNO_3,HCl,HF 硝酸、鹽酸、氫氟酸
Electronics / 電子產品	HNO_3,HCl,H_2O_2,HBF_4 硝酸、鹽酸、雙氧水、氟硼酸

*2: If the result of spot test is positive, Chromium VI would be determined as detected.
若點測試的結果爲陽性反應，則直接判定爲測試樣品含有六價鉻。

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Test Conducted

(Ⅳ) Measurement Flowchart 測試流程圖:

Test For Halogen Content 鹵素測試流程圖
Reference Standard 參考方法：EN 14582

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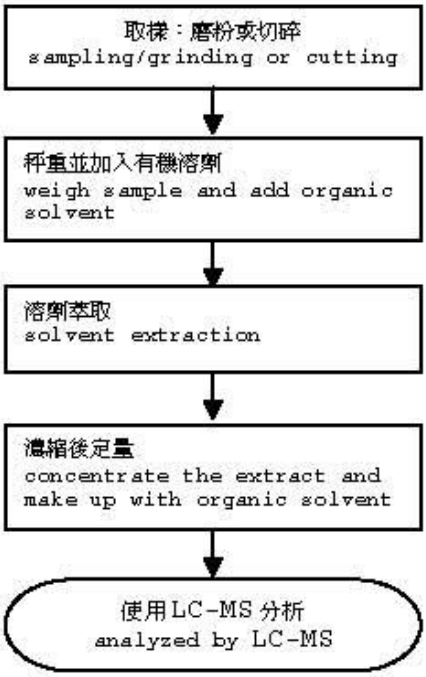
Test Conducted

(Ⅳ) Measurement Flowchart 測試流程圖:

Test For Perfluorooctane Sulfonates (PFOS) / Perfluorooctanoic Acid (PFOA)
Contents 全氟辛磺酸 /全氟辛酸測試流程圖
Reference Method 參考方法: Solvent Extraction 溶劑萃取法



End Of Report

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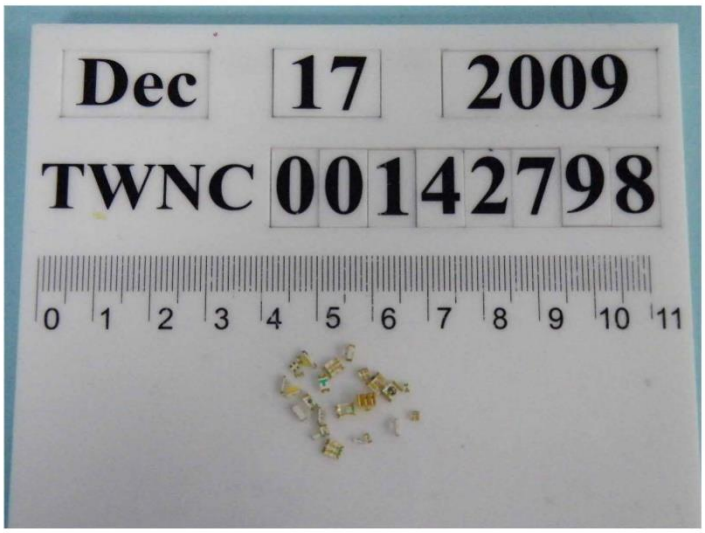
Test Conducted

Photo



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