Wire Wound Type Common Mode Filter

DCM3532F2SF-800T02

	ECN HISTORY LIST								
REV	DATE	DESCRIPTION	APPROVED	CHECKED	DRAWN				
1.0	18/07/02	新發行	楊祥忠	林志鴻	張展耀				
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Wire Wound Type Common Mode Filter

DCM3532F2SF-800T02

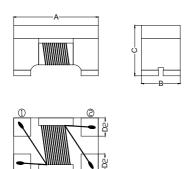
1. Features

- 1. High common mode impedance at high frequency effects excellent noise suppression performance.
- 2. DCM3532F2SF series realizes small size and low profile. 3.5x3.2x2.2 mm
- 3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.

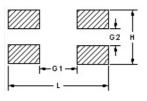




2. Dimension



Recommended PC Board Pattern



Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	L(mm)	H(mm)	G1(mm)	G2(mm)
3532F2SF	3.5±0.2	3.2±0.2	2.2±0.2	0.63±0.05	1.18±0.05	4.40	3.80	2.45	0.90

Units: mm

3. Part Numbering



A: Series

B: Dimension

C: Material Ferrite Core
D: Number of Lines 2=2 lines
E: Type S=Shielded

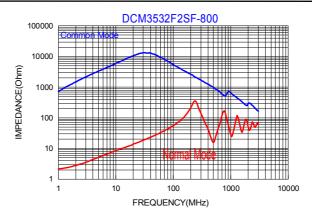
F: Lead free

G: Inductance 800=80 μ H H: Rated Current 02=200mA

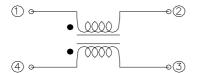
4. Specification

TAI-TECH Inductance (μ H) [100kHz]		DC Resistance (Ω) max.	Rated Current (mA)	Rated Volt. (Vdc)	IR (Ω) min.
DCM3532F2SF-800T02	75~160	1.3	200	50	10M

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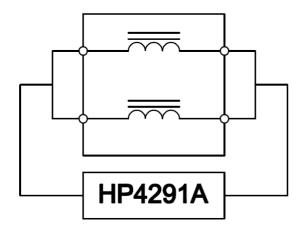


5.Schematic Diagram

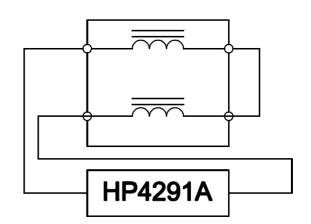


6. MEASURING CIRCUITS 2LINE

Common mode

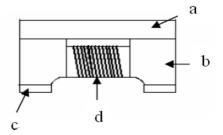


Differential mode



7. Materials

No.	Description	Specification
a.	Upper Plate	Ferrite
b.	Core	Ferrite Core
С	Termination	Tin (Pb Free)
d	Wire	Enameled Copper Wire



8. Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40~+125℃ (Including self - temperature rise)	
Storage temperature	-40~+125℃ (on board)	
Electrical Performance Te	st	
Z(common mode)		Agilent-4291A+ Agilent -16197A
DCR	Refer to standard electrical characteristics list.	Agilent-4338B
I.R.		Agilent4339
Temperature Rise Test	Rated Current < 1A ΔT 20°C Max Rated Current ≧1A ΔT 40°C Max	Applied the allowed DC current. Temperature measured by digital surface thermometer
Reliability Test		
Life Test		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles) Temperature: 125±2°C Applied current: rated current Duration: 1000±12hrs Measured at room temperature after placing for 24±2 hrs
Load Humidity		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles Humidity: 85±2%R.H, Temperature: 85°C±2°C Duration: 1000hrs Min. with 100% rated current
Moisture Resistance	Appearance: No damage. Inductance: within±10% of initial value Impedance: within±15% of initial value RDC: within ±15% of initial value and shall not exceed the specification value	Measured at room temperature after placing for 24±2 hrs Preconditioning: Run through IR reflow for 2 times. (IPC/JEDEC J-STD-020DClassification Reflow Profiles 1. Baked at50°C for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs. 3. Raise temperature to 65±2°C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs, keep at 25°C for 2 hrs then keep at -10°C for 3 hrs 4. Keep at 25°C 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.
Thermal shock		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles Condition for 1 cycle $Step1: -40\pm2^{\circ}C = 30\pm5min$ $Step2: 25\pm2^{\circ}C = 0.5min$ $Step3: 125\pm2^{\circ}C = 30\pm5min$ $Number of cycles: 500$
Vibration		Measured at room temperature after placing for 24±2 hrs Oscillation Frequency: 10 ~ 2K ~ 10Hz for 20 minutes Equipment: Vibration checker Total Amplitude:1.52mm±10% Testing Time: 12 hours(20 minutes, 12 cycles each of 3 orientations).

Item	Performance	Test Condition				
Bending	Appearance: No damage. Impedance: within±15% of initial value	Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm <0805 inch(2012mm):40x100x0.8mm Bending depth: >=0805 inch(2012mm):1.2mm <0805 inch(2012mm):0.8mm duration of 10 sec.				
	Inductance: within±10% of initial value RDC: within ±15% of initial value and shall not exceed the specification value	Type Peak Value duration (D) Wave form (Vi)ft/sec				
Shock		SMD 50 11 Half-sine 11.3				
		Lead 50 11 Half-sine 11.3				
Solder ability	More than 95% of the terminal electrode should be covered with solder。	Preheat: 150°C,60sec.。 Solder: Sn96.5% Ag3% Cu0.5% Temperature: 245±5°C° Flux for lead free: Rosin. 9.5%° Dip time: 4±1sec° Depth: completely cover the termination				
Resistance to Soldering Heat		Depth: completely cover the termination Temperature(°C) Time(s) Temperature ramp/immersion and emersion rate heat cycles 260 ±5 (solder temp) 10 ±1 25mm/s ±6 mm/s 1				
Terminal	Appearance: No damage. Impedance: within±15% of initial value Inductance: within±10% of initial value RDC: within ±15% of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles With the component mounted on a PCB with the device to be tested, apply a force(>0805:11kg), <=0805:0.5kg)to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.				
Strength		DUT wide thick substrate press tool				

9. Soldering and Mounting

9-1. Soldering

Mildly activated rosin fluxes are preferred. TAI-TECH terminations are suitable for all wave and re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

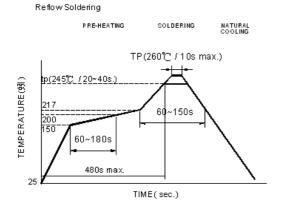
9-1.1 Solder re-flow:

Recommended temperature profiles for re-flow soldering in Figure 1.

9-1.2 Soldering Iron(Figure 2):

Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

- Preheat circuit and products to 150°C
 Never contact the ceramic with the iron tip
 Use a 20 watt soldering iron with tip diameter of 1.0mm
 1.0mm tip diameter (max)
 Limit soldering time to 4~5 sec.
- 350°C tip temperature (max)



Reflow times: 3 times max.

Fig.1

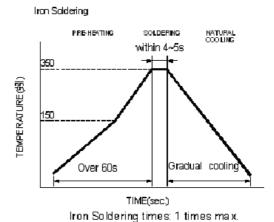
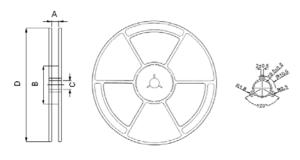


Fig.2

10. Packaging Information

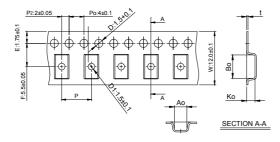
10-1. Reel Dimension



13 "x12mm

Type	A(mm)	B(mm)	C(mm)	D(mm)
13"x12mm	12±1.5	100±0.5	13.2±0.5	330±0.5

10-2. Tape Dimension / 12mm

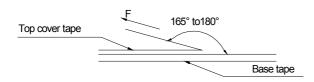


Series	size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	t(mm)
DCM3532F2S	3532	3.80±0.1	3.40±0.1	2.50±0.1	8.0±0.1	0.26±0.05

10-3. Packaging Quantity

Chip size	Chip/Reel	Inner Box	Carton	
DCM3532F2S	2000	4000	32000	

9-4. Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

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

Application Notice

- · Storage Conditions(component level)
- To maintain the solderability of terminal electrodes:
- 1. TAI-TECH products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
- 3. Recommended products should be used within 12 months form the time of delivery.
- 4. 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.

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JIANG-SU, CHINA)

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以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

樣品名稱(Sample Description)

: WIREWOUND SERIES

樣品型號(Style/Item No.)

WCM、WCL、HSF、HDMI、DVI、BCM、PCM、TCM、LCM、LPF、TXF、ACM、DCM、WIH、

BPH · TNH · YCM · STF SERIES

收件日期(Sample Receiving Date)

2018/03/15

測試期間(Testing Period)

2018/03/15 TO 2018/03/22

測試結果(Test Results) :

請參閱下一頁 (Please refer to following pages).



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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 極限値 (MDL)	結果 (Result) No.1
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5 (2013),以感應耦合 電漿原子發射光譜儀檢測. / With	2	n. d.
鉛 / Lead (Pb)	mg/kg	reference to IEC 62321-5 (2013) and performed by ICP-AES.	2	n. d.
汞 / Mercury (Hg)	mg/kg	参考IEC 62321-4 (2013),以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4 (2013) and performed by ICP-AES.	2	n. d.
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	参考IEC 62321-7-2 (2017),以UV-VIS 檢測. / With reference to IEC 62321-7-2 (2017) and performed by UV-VIS.	8	n. d.
多溴聯苯總和 / Sum of PBBs	mg/kg		-	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	参考IEC 62321-6 (2015),以氣相層析	5	n. d.
五溴聯苯 / Pentabromobiphenyl	mg/kg	/質譜儀檢測. / With reference to	5	n. d.
六溴聯苯 / Hexabromobiphenyl	mg/kg	IEC 62321-6 (2015) and performed by GC/MS.	5	n. d.
七溴聯苯 / Heptabromobiphenyl	mg/kg	by GO/ MO.	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.

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測試項目 (Test Items)	單位 (Unit)	测試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No.1
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	4 k IBQ 00001 0 (0015) F 1 B 1.	5	n. d.
四溴聯苯醚 / Tetrabromodiphenyl ether	mg/kg	參考 IEC 62321-6 (2015),以氣相層析	5	n. d.
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg	/質譜儀檢測. / With reference to IEC 62321-6 (2015) and performed	5	n. d.
六溴聯苯醚 / Hexabromodiphenyl ether	mg/kg	by GC/MS.	5	n. d.
七溴聯苯醚 / Heptabromodiphenyl ether	mg/kg	by dc/mo.	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.
六溴環十二烷及所有主要被辨別出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α - HBCDD, β - HBCDD, γ - HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	参考IEC 62321 (2008),以氣相層析/ 質譜儀檢測. / With reference to IEC 62321 (2008). Analysis was performed by GC/MS.	5	n. d.
鹵素 / Halogen				
鹵素(氟)/ Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg		50	n. d.
鹵素(氣)/ Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	参考BS EN 14582 (2016),以離子層析 儀分析. / With reference to BS EN	50	n. d.
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	14582 (2016). Analysis was performed by IC.	50	n. d.
鹵素(碘)/ Halogen-Iodine(I)(CAS No.: 14362-44-8)	mg/kg		50	n. d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) No. 1
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n. d.
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n. d.
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg	参考IEC 62321-8 (2017),以氣相層析 儀/質譜儀檢測. / With reference to IEC 62321-8 (2017). Analysis was performed by GC/MS.	50	n. d.
鄰苯二甲酸二異丁酯 / DIBP (Di- isobutyl phthalate) (CAS No.: 84-69- 5)	mg/kg		50	n. d.
鄰苯二甲酸二異癸酯 / DIDP (Di- isodecyl phthalate) (CAS No.: 26761- 40-0; 68515-49-1)	mg/kg		50	n. d.
鄰苯二甲酸二異壬酯 / DINP (Di- isononyl phthalate) (CAS No.: 28553- 12-0; 68515-48-0)	mg/kg		50	n. d.
鄰苯二甲酸二正辛酯 / DNOP (Di-n-octyl phthalate) (CAS No.: 117-84-0)	mg/kg		50	n. d.
鄰苯二甲酸二正己酯 / DNHP (Di-n- hexyl phthalate) (CAS No.: 84-75-3)	mg/kg		50	n. d.
鄰苯二甲酸二戊酯 / DNPP (Di-n-pentyl phthalate) (CAS No.: 131-18-0)	mg/kg		50	n. d.
錦 / Antimony (Sb)	mg/kg	参考US EPA 3052 (1996),以感應耦合 電漿原子發射光譜儀檢測. / With	2	n. d.
鈹 / Beryllium (Be)	mg/kg	reference to US EPA 3052 (1996). Analysis was performed by ICP-AES.	2	n. d.

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法侦测 極限值 (MDL)	結果 (Result) No.1
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)		参考US EPA 3550C (2007),以液相層析/質譜儀檢測. / With reference to US EPA 3550C (2007). Analysis was performed by LC/MS.	10	n. d.
全氟辛酸 / PFOA (CAS No.: 335-67-1)	mg/kg		10	n. d.
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測. / Analysis was performed by FTIR and FLAME Test.	_	Negative

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. **= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7. 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.)

PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗層材料中不得超過 $1\mu g/m^2$ 。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above $1\mu g/m^2$.)

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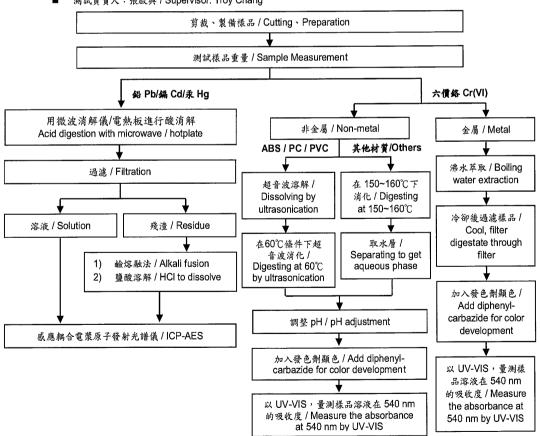
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<u> 重金屬流程圖 / Analytical flow chart of Heavy Metal</u>

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. (Cr⁶⁺ test method excluded)

測試人員:王志瑋 / Technician: JR Wang

測試負責人:張啟興 / Supervisor: Troy Chang



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LUTADEL ANNO ARRIVO DU DE LUDO PITO PER ANCIDE DES CONTRATA DO CARA

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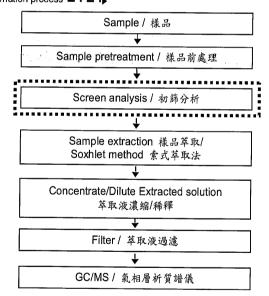
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多溴聯苯/多溴聯苯醚分析流程圖 / Analytical flow chart - PBB/PBDE

- 測試人員:涂雅苓 / Technician: Yaling Tu
- 測試負責人:張啟興 / Supervisor: Troy Chang

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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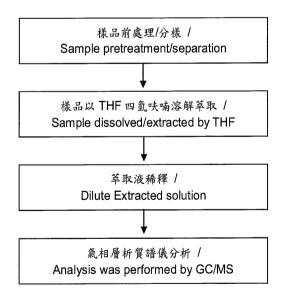
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可塑劑分析流程圖 / Analytical flow chart - Phthalate

測試人員:徐毓明 / Technician: Andy Hsu

測試負責人:張啟興 / Supervisor: Troy Chang

【测試方法/Test method: IEC 62321-8】



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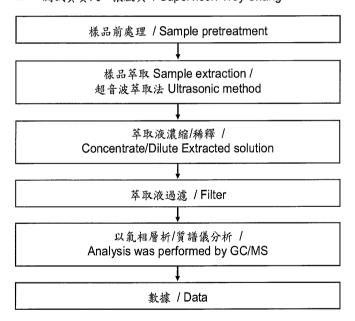
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六溴環十二烷分析流程圖 / Analytical flow chart - HBCDD

- 測試人員:涂雅苓 / Technician: Yaling Tu
- 測試負責人:張啟興 / Supervisor: Troy Chang



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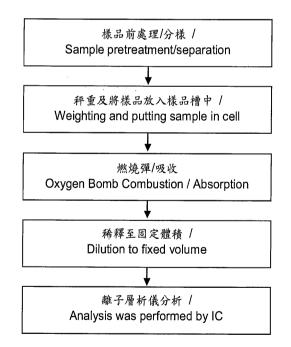
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<u> 鹵素分析流程圖 / Analytical flow chart - Halogen</u>

- 測試人員:陳恩臻 / Technician: Rita Chen
- 測試負責人:張啟興 / Supervisor: Troy Chang



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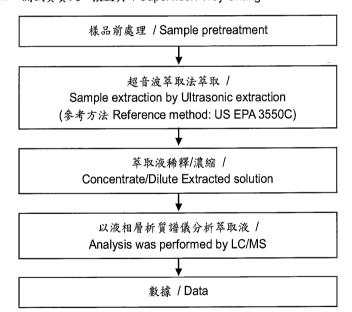
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全氟辛酸/全氟辛烷磺酸分析流程圖 / Analytical flow chart - PFOA/PFOS

- 測試人員:涂雅苓 / Technician: Yaling Tu
- 測試負責人:張啟興 / Supervisor: Troy Chang



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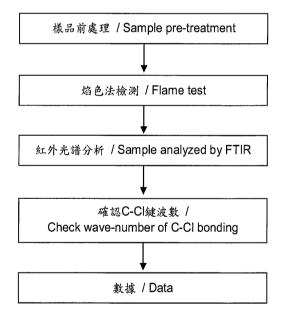
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聚氯乙烯物質判定分析流程圖 / Analysis flow chart - PVC

- 測試人員:涂雅苓 / Technician: Yaling Tu
- 測試負責人:張啟興 / Supervisor: Troy Chang



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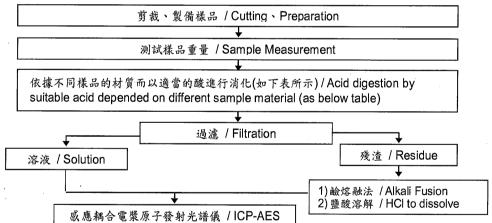
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根據以下的流程圖之條件,樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.

- 測試人員:王志瑋 / Technician: JR Wang
- 測試負責人:張啟興 / Supervisor: Troy Chang

元素以 ICP-AES 分析的消化流程圖 (Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 / Aqua regia, HNO3, HCI, HF, H ₂ O ₂
玻璃 / Glass	硝酸,氫氟酸 / HNO ₃ /HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO ₃
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCI
其他 / Others	加入適當的試劑至完全溶解 / Added appropriate reagent to total digestion

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測試報告

號碼(No.): CE/2018/34305

日期(Date): 2018/03/22

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Test Report

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

(臺慶精密電子(昆山)有限公司 / TAI-TECH ADVANCED ELECTRONICS (KUN-SHAN) CO. LTD.)

(慶邦電子元器件(泗洪)有限公司 / TAIPAQ ELECTRONICS (SI-HONG) CO., LTD.)

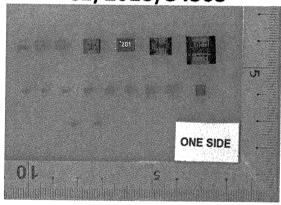
桃園市楊梅區幼獅工業區幼四路1號 / NO. 1, YOU 4TH ROAD, YOUTH INDUSTRIAL DISTRICT, YANG-MEI, TAO-YUAN CITY, TAIWAN, R. O. C.

(江蘇省昆山市篷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)

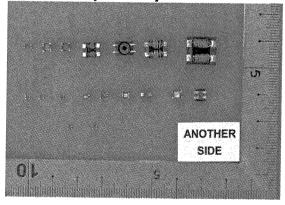
(中國,江蘇省,宿遷市,泗洪縣,經濟開發區杭州路南側,建設北路東側 / THE SOUTH HANGZHOU ROAD AND THE EAST JIANSHE ROAD, ECONOMIC DEVELOPMENT ZONE, SIHONG COUNTY, SUQIANCITY, JIANGSU PROVINCE, P, R, CHINA)

> * 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/2018/34305



CE/2018/34305



** 報告結尾 (End of Report) **

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>>TAI-TECH(台庆)