www.SeCosGmbH.com

Headquarter Address:
8F.No.33, Lane 155, Sec.3, Bei-Shen Rd.,
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Product/Process Change Notification

PCN#	Effective Date	Issue Date
2014-01-01C-01	2014/1/1	2014/1/1

PCN Classification	Product Category
Major	SMA Package

Subject

Add lead frame vendor

Affected Product(s)

SMA Package

Description of Change(s)

In order to avoid shortage of material, and enhance the speed of delivery, thus, we add a new vendor.

Content of Change(s)

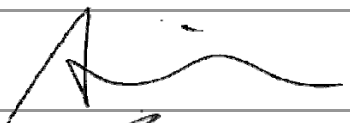
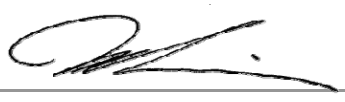
add a new lead frame vendor

Impact(s)

None

Attachment(s)

Reliability test report. SGS report.

Approval		
Issue by	Alice Lai	e-mail: alice@secosgmbh.com
Development Engineer		Alice Lai
QA Manager		Peter Yang
General Manger		Mathew Liu

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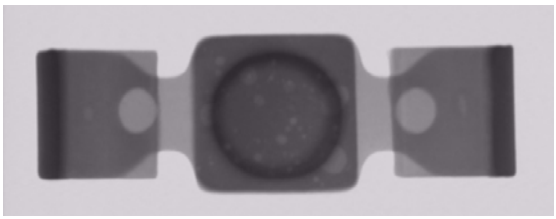
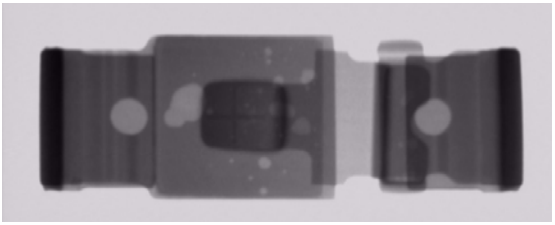
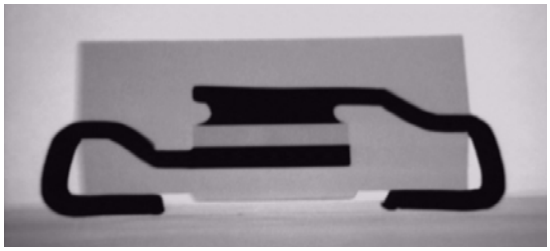
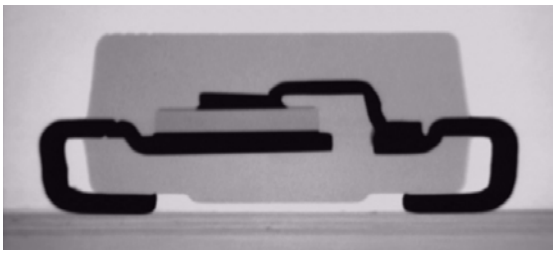
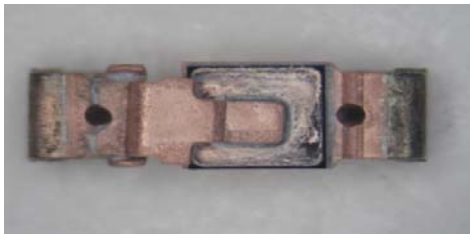
Exterior comparison Chart SMA Package	
Original	News
 Top View	 Top View
 Lateral View	 Lateral View
 Top View	 Top View
 Lateral View	 Lateral View

SeCoS Corporation

Reliability Testing Summary Report

Date: 2013/11/30 Document No.: SG13 -11- 13

Test Item	P/N	Test Condition	(LTPD)	Sample Numbers	Allow Fall Numbers	Fall Numbers	Result
HTRB High Temp Reverse Bias	ES13A	100 ± 5℃, 80%VR, T = 1000hrs		77	0	0	ACC
HTSL High Temperature Storage Life	ES13A	150℃, T = 1000hrs		77	0	0	ACC
PCT Pressure Cooker Test	ES13A	121℃, 29.7PSIG, RH = 100%, T = 168 hrs		77	0	0	ACC
TCT Temperature Cycle Test	ES13A	-55℃/30min, 150℃/30min, For 1000 Cycle		77	0	0	ACC
THT High Temperature High Humidity Test	ES13A	85 ± 2℃, RH = 85 ± 5%, 1000 hrs		77	0	0	ACC
H3TRB High Temper High Humidity Reverse Bies Test	ES13A	85 ± 2℃, RH = 85 ± 5%, 80%VR, T = 1000 hrs		77	0	0	ACC
Solderability	ES13A	245 ± 5℃, 5Sec the inspected area of each lead must have 95% solder coverage minimum		10	0	0	ACC

Judgment:

■ **qualified** □ **unqualified**

Testing Start Date: 2013.10.01 Testing End Date: 2013.11.30

Tester: Leo Hsia Approval: Peter Yang

SeCoS Corporation

Electrical Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 25℃
Test Date: 2013.10.01 ~ 2013.10.01
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	VF (mV)	IR (uA)
1	880mV	0.262uA
2	883mV	1.291uA
3	871mV	0.461uA
4	885mV	0.065uA
5	886mV	0.867uA
6	876mV	0.610uA
7	884mV	0.901uA
8	886mV	0.310uA
9	880mV	0.695uA
10	877mV	1.119uA
11	873mV	0.452uA
12	876mV	0.578uA
13	883mV	0.841uA
14	877mV	0.227uA
15	872mV	1.134uA
16	877mV	1.219uA
17	876mV	0.346uA
18	880mV	0.012uA
19	870mV	1.253uA
20	876mV	0.680uA
21	874mV	0.996uA
22	884mV	0.611uA
23	887mV	0.177uA
24	875mV	0.403uA
25	886mV	0.513uA
26	879mV	1.298uA
27	870mV	0.886uA
28	869mV	0.781uA
29	882mV	0.380uA
30	877mV	0.737uA
31	873mV	1.315uA

SeCoS Corporation

Electrical Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 25℃
Test Date: 2013.10.01 ~ 2013.10.01
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	VF (mV)	IR (uA)
32	879mV	1.145uA
33	881mV	1.148uA
34	882mV	0.325uA
35	872mV	0.870uA
36	876mV	0.591uA
37	876mV	0.764uA
38	881mV	0.656uA
39	871mV	0.269uA
40	873mV	0.883uA
41	875mV	0.008uA
42	878mV	1.256uA
43	875mV	1.281uA
44	883mV	1.255uA
45	886mV	1.187uA
46	873mV	0.030uA
47	877mV	0.648uA
48	879mV	0.015uA
49	878mV	0.916uA
50	870mV	0.177uA
51	880mV	0.872uA
52	877mV	0.533uA
53	874mV	0.833uA
54	882mV	0.349uA
55	877mV	1.230uA
56	885mV	0.898uA
57	877mV	0.971uA
58	881mV	0.275uA
59	879mV	0.091uA
60	883mV	0.769uA
61	875mV	1.058uA
62	877mV	0.970uA

SeCoS Corporation

Electrical Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 25℃
Test Date: 2013.10.01 ~ 2013.10.01
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	VF (mV)	IR (uA)
63	878mV	0.806uA
64	874mV	0.252uA
65	869mV	0.802uA
66	873mV	0.913uA
67	872mV	0.383uA
68	873mV	0.937uA
69	873mV	0.978uA
70	885mV	0.830uA
71	885mV	0.976uA
72	877mV	1.065uA
73	881mV	1.144uA
74	887mV	1.309uA
75	869mV	0.546uA
76	870mV	0.952uA
77	877mV	1.127uA

Made By: Leo Hsia Approval: Peter Yang

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 100 ± 5℃, 80%VR, T = 1000 hrs
Test Date: 2013.10.02 ~ 2013.11.13
Test Standard : JESD22 STANDER Method-A108
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	881mV	0.834uA	879mV	1.199uA
2	872mV	0.022uA	870mV	0.144uA
3	875mV	0.121uA	887mV	0.078uA
4	880mV	0.319uA	885mV	0.082uA
5	875mV	1.288uA	880mV	1.295uA
6	882mV	0.194uA	884mV	0.755uA
7	885mV	0.010uA	870mV	1.228uA
8	884mV	0.186uA	875mV	1.201uA
9	880mV	0.111uA	880mV	1.356uA
10	876mV	0.911uA	872mV	1.004uA
11	877mV	0.393uA	882mV	1.228uA
12	876mV	0.249uA	883mV	0.518uA
13	879mV	0.467uA	886mV	1.281uA
14	881mV	1.269uA	885mV	0.028uA
15	877mV	1.142uA	881mV	0.053uA
16	878mV	1.299uA	876mV	0.622uA
17	886mV	1.162uA	870mV	0.833uA
18	874mV	0.425uA	877mV	0.914uA
19	871mV	1.341uA	871mV	0.508uA
20	871mV	0.499uA	884mV	0.645uA
21	882mV	0.386uA	872mV	0.207uA
22	877mV	0.152uA	883mV	1.008uA
23	886mV	1.011uA	880mV	0.460uA
24	871mV	1.103uA	878mV	0.570uA
25	883mV	0.785uA	876mV	0.934uA
26	882mV	0.699uA	877mV	0.630uA
27	881mV	0.349uA	880mV	0.753uA
28	870mV	0.223uA	871mV	0.122uA
29	874mV	0.156uA	870mV	0.466uA
30	874mV	1.218uA	870mV	1.227uA

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 100 ± 5℃, 80%VR, T = 1000 hrs
Test Date: 2013.10.02 ~ 2013.11.13
Test Standard : JESD22 STANDER Method-A108
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
31	876mV	0.846uA	884mV	1.004uA
32	872mV	0.987uA	878mV	0.935uA
33	886mV	1.197uA	869mV	1.120uA
34	883mV	0.542uA	882mV	0.861uA
35	886mV	0.214uA	873mV	0.347uA
36	871mV	0.558uA	883mV	0.864uA
37	885mV	1.126uA	879mV	0.222uA
38	885mV	1.027uA	873mV	1.338uA
39	877mV	1.284uA	879mV	0.195uA
40	882mV	0.764uA	872mV	0.194uA
41	882mV	0.304uA	878mV	0.252uA
42	885mV	0.158uA	873mV	0.280uA
43	884mV	1.030uA	882mV	1.196uA
44	877mV	1.044uA	877mV	0.642uA
45	885mV	1.359uA	876mV	0.504uA
46	885mV	0.371uA	872mV	0.706uA
47	871mV	0.624uA	869mV	1.216uA
48	883mV	0.540uA	869mV	0.304uA
49	886mV	0.932uA	882mV	0.668uA
50	880mV	1.281uA	869mV	0.442uA
51	885mV	0.900uA	872mV	0.925uA
52	878mV	0.302uA	871mV	0.774uA
53	882mV	0.448uA	879mV	1.317uA
54	885mV	0.953uA	871mV	0.723uA
55	872mV	0.588uA	870mV	0.648uA
56	875mV	1.151uA	886mV	1.133uA
57	882mV	0.075uA	882mV	0.163uA
58	887mV	0.386uA	883mV	0.234uA
59	877mV	0.244uA	884mV	1.303uA
60	878mV	1.096uA	870mV	1.329uA

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 100 ± 5℃, 80%VR, T = 1000 hrs
Test Date: 2013.10.02 ~ 2013.11.13
Test Standard : JESD22 STANDER Method-A108
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
61	877mV	0.087uA	881mV	1.258uA
62	877mV	0.205uA	874mV	1.172uA
63	886mV	0.311uA	879mV	0.161uA
64	881mV	1.096uA	878mV	0.730uA
65	887mV	0.257uA	872mV	0.276uA
66	881mV	1.167uA	879mV	0.233uA
67	887mV	0.087uA	880mV	0.875uA
68	872mV	0.440uA	886mV	1.157uA
69	873mV	0.424uA	887mV	0.614uA
70	881mV	0.183uA	875mV	0.333uA
71	875mV	1.361uA	877mV	0.897uA
72	881mV	0.081uA	880mV	1.197uA
73	878mV	0.450uA	873mV	0.585uA
74	880mV	1.047uA	871mV	0.321uA
75	886mV	0.009uA	881mV	0.417uA
76	873mV	0.535uA	874mV	0.381uA
77	874mV	0.549uA	879mV	0.228uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 150℃, 1000Hrs
Test Date: 2013.10.09 ~ 2013.11.20
Test Standard : JESD22 STANDER Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	884mV	0.710uA	871mV	0.866uA
2	870mV	0.654uA	876mV	0.664uA
3	871mV	0.405uA	886mV	0.668uA
4	881mV	0.264uA	882mV	1.366uA
5	874mV	0.577uA	871mV	0.537uA
6	875mV	0.580uA	879mV	0.816uA
7	880mV	0.046uA	874mV	0.028uA
8	881mV	0.091uA	872mV	0.357uA
9	874mV	0.930uA	875mV	0.358uA
10	884mV	0.082uA	880mV	1.067uA
11	870mV	0.461uA	882mV	0.501uA
12	869mV	0.669uA	874mV	1.059uA
13	875mV	0.117uA	885mV	0.036uA
14	886mV	0.753uA	882mV	0.790uA
15	871mV	0.912uA	870mV	0.896uA
16	874mV	0.689uA	881mV	1.133uA
17	871mV	1.340uA	879mV	0.111uA
18	871mV	0.558uA	871mV	0.110uA
19	885mV	0.836uA	882mV	0.927uA
20	872mV	0.724uA	879mV	1.194uA
21	875mV	0.419uA	881mV	0.663uA
22	883mV	1.209uA	873mV	0.489uA
23	870mV	0.158uA	869mV	0.683uA
24	878mV	0.867uA	873mV	0.171uA
25	881mV	0.078uA	874mV	0.919uA
26	877mV	0.977uA	876mV	0.216uA
27	871mV	1.181uA	887mV	0.576uA
28	874mV	0.654uA	871mV	1.134uA
29	873mV	0.539uA	883mV	1.336uA
30	877mV	0.869uA	875mV	0.999uA

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 150℃, 1000Hrs
Test Date: 2013.10.09 ~ 2013.11.20
Test Standard : JESD22 STANDER Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
31	886mV	0.619uA	887mV	0.130uA
32	885mV	0.768uA	884mV	0.047uA
33	873mV	0.022uA	878mV	1.211uA
34	878mV	1.154uA	870mV	0.858uA
35	870mV	1.283uA	887mV	1.009uA
36	883mV	0.053uA	881mV	1.242uA
37	885mV	1.015uA	872mV	0.274uA
38	876mV	0.272uA	886mV	0.576uA
39	883mV	0.368uA	881mV	0.488uA
40	874mV	0.867uA	878mV	0.320uA
41	872mV	0.466uA	878mV	0.524uA
42	880mV	0.512uA	869mV	0.250uA
43	872mV	0.007uA	875mV	0.304uA
44	872mV	0.674uA	872mV	1.075uA
45	886mV	0.768uA	879mV	0.499uA
46	873mV	0.786uA	875mV	0.453uA
47	877mV	1.282uA	886mV	1.345uA
48	882mV	0.583uA	876mV	1.241uA
49	871mV	0.319uA	873mV	0.526uA
50	869mV	0.150uA	874mV	0.497uA
51	869mV	0.278uA	879mV	0.692uA
52	874mV	0.160uA	880mV	0.705uA
53	874mV	1.019uA	884mV	0.631uA
54	883mV	0.505uA	875mV	0.524uA
55	886mV	0.629uA	872mV	1.305uA
56	872mV	1.300uA	882mV	0.196uA
57	882mV	0.133uA	874mV	0.649uA
58	873mV	1.271uA	885mV	0.984uA
59	870mV	1.358uA	870mV	0.043uA
60	883mV	0.797uA	871mV	1.245uA

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 150℃, 1000Hrs
Test Date: 2013.10.09 ~ 2013.11.20
Test Standard : JESD22 STANDER Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
61	871mV	1.128uA	875mV	0.421uA
62	874mV	0.760uA	874mV	0.882uA
63	885mV	0.498uA	873mV	1.125uA
64	879mV	1.067uA	881mV	1.220uA
65	870mV	0.219uA	885mV	0.738uA
66	875mV	1.023uA	877mV	0.475uA
67	872mV	1.161uA	869mV	0.969uA
68	877mV	1.039uA	880mV	0.385uA
69	878mV	1.316uA	876mV	0.588uA
70	872mV	0.066uA	869mV	0.378uA
71	885mV	0.492uA	886mV	1.343uA
72	876mV	0.708uA	871mV	1.201uA
73	878mV	0.157uA	878mV	1.204uA
74	886mV	0.552uA	880mV	0.343uA
75	885mV	0.494uA	871mV	0.886uA
76	869mV	1.141uA	882mV	0.458uA
77	880mV	0.760uA	875mV	0.145uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Pressure Cooker Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2013.10.21 ~ 2013.10.29
Test Standard : JESD22 STANDER Method-A102
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	872mV	0.166uA	873mV	1.152uA
2	877mV	0.383uA	881mV	1.317uA
3	880mV	0.878uA	870mV	0.347uA
4	884mV	0.346uA	870mV	0.093uA
5	886mV	0.944uA	885mV	1.183uA
6	884mV	1.240uA	877mV	0.880uA
7	874mV	0.663uA	871mV	0.657uA
8	871mV	0.288uA	884mV	0.762uA
9	873mV	0.898uA	884mV	0.511uA
10	872mV	0.627uA	881mV	0.698uA
11	871mV	0.835uA	874mV	0.581uA
12	873mV	0.994uA	885mV	1.053uA
13	881mV	1.155uA	873mV	0.707uA
14	874mV	0.591uA	875mV	1.131uA
15	886mV	0.666uA	883mV	0.123uA
16	876mV	0.443uA	884mV	0.289uA
17	874mV	0.870uA	870mV	1.337uA
18	873mV	0.241uA	881mV	0.142uA
19	882mV	0.622uA	870mV	0.737uA
20	879mV	1.115uA	883mV	0.579uA
21	885mV	0.736uA	880mV	1.264uA
22	869mV	0.434uA	882mV	0.613uA
23	875mV	0.363uA	875mV	1.268uA
24	874mV	0.111uA	887mV	0.435uA
25	879mV	0.657uA	884mV	1.251uA
26	878mV	1.262uA	886mV	0.941uA
27	879mV	0.775uA	873mV	0.591uA
28	884mV	0.193uA	869mV	0.426uA
29	876mV	1.190uA	886mV	0.453uA
30	873mV	0.848uA	870mV	1.049uA

SeCoS Corporation

Pressure Cooker Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2013.10.21 ~ 2013.10.29
Test Standard : JESD22 STANDER Method-A102
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
31	870mV	0.016uA	870mV	0.916uA
32	882mV	1.201uA	873mV	0.536uA
33	874mV	1.169uA	877mV	0.440uA
34	883mV	0.202uA	885mV	0.339uA
35	882mV	1.235uA	876mV	0.975uA
36	885mV	0.617uA	881mV	0.591uA
37	886mV	0.193uA	884mV	0.968uA
38	878mV	1.067uA	884mV	0.741uA
39	877mV	1.187uA	874mV	0.094uA
40	882mV	1.291uA	873mV	1.199uA
41	877mV	0.011uA	885mV	1.259uA
42	879mV	0.132uA	887mV	0.933uA
43	870mV	0.949uA	872mV	0.389uA
44	883mV	0.535uA	884mV	0.503uA
45	872mV	0.014uA	883mV	0.638uA
46	879mV	0.270uA	872mV	0.720uA
47	876mV	1.336uA	872mV	0.814uA
48	885mV	0.677uA	886mV	0.937uA
49	886mV	0.203uA	874mV	0.141uA
50	881mV	1.333uA	874mV	1.336uA
51	871mV	0.209uA	881mV	0.310uA
52	876mV	0.463uA	883mV	0.888uA
53	884mV	1.353uA	881mV	0.706uA
54	882mV	1.225uA	874mV	1.108uA
55	879mV	1.103uA	870mV	0.111uA
56	875mV	0.482uA	875mV	1.218uA
57	875mV	1.244uA	887mV	1.076uA
58	887mV	0.654uA	882mV	0.865uA
59	884mV	0.498uA	871mV	0.461uA
60	879mV	0.712uA	873mV	0.170uA

SeCoS Corporation

Pressure Cooker Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2013.10.21 ~ 2013.10.29
Test Standard : JESD22 STANDER Method-A102
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
61	882mV	0.468uA	882mV	0.691uA
62	872mV	0.337uA	874mV	1.247uA
63	876mV	0.101uA	875mV	0.591uA
64	881mV	1.128uA	871mV	1.186uA
65	870mV	0.790uA	875mV	0.594uA
66	885mV	0.160uA	882mV	0.333uA
67	877mV	0.142uA	871mV	1.311uA
68	874mV	1.112uA	875mV	0.472uA
69	887mV	0.187uA	878mV	0.331uA
70	881mV	0.231uA	878mV	0.104uA
71	870mV	0.296uA	872mV	0.280uA
72	873mV	1.025uA	882mV	0.698uA
73	882mV	0.947uA	871mV	1.309uA
74	880mV	0.086uA	877mV	0.123uA
75	871mV	0.721uA	881mV	1.007uA
76	872mV	0.487uA	882mV	0.556uA
77	869mV	0.400uA	879mV	1.106uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Temperature Cycle Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2013.10.02 ~ 2013.11.23
Test Standard : JESD22 STANDER Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	871mV	0.163uA	882mV	1.071uA
2	872mV	0.130uA	872mV	1.123uA
3	877mV	0.993uA	874mV	1.018uA
4	886mV	0.394uA	884mV	1.251uA
5	881mV	0.806uA	887mV	0.027uA
6	876mV	0.071uA	883mV	0.256uA
7	886mV	0.582uA	877mV	0.144uA
8	882mV	0.167uA	884mV	0.844uA
9	879mV	0.928uA	875mV	1.331uA
10	873mV	0.126uA	870mV	0.882uA
11	872mV	0.990uA	882mV	0.526uA
12	873mV	0.668uA	881mV	0.564uA
13	881mV	0.248uA	885mV	0.226uA
14	885mV	0.994uA	877mV	0.618uA
15	884mV	1.010uA	875mV	0.396uA
16	876mV	0.548uA	872mV	0.252uA
17	883mV	0.674uA	870mV	1.244uA
18	869mV	0.611uA	877mV	0.771uA
19	882mV	0.450uA	875mV	0.501uA
20	883mV	0.425uA	882mV	0.038uA
21	878mV	0.409uA	886mV	0.612uA
22	887mV	0.501uA	870mV	1.099uA
23	883mV	1.240uA	870mV	0.769uA
24	874mV	0.953uA	876mV	0.954uA
25	885mV	0.650uA	872mV	0.346uA
26	875mV	0.063uA	870mV	0.235uA
27	878mV	0.975uA	878mV	0.123uA
28	881mV	0.390uA	879mV	0.630uA
29	879mV	0.433uA	873mV	0.619uA
30	885mV	1.261uA	887mV	0.460uA

SeCoS Corporation

Temperature Cycle Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2013.10.02 ~ 2013.11.23
Test Standard : JESD22 STANDER Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
31	873mV	0.962uA	871mV	1.162uA
32	876mV	0.206uA	877mV	0.316uA
33	877mV	0.656uA	879mV	0.077uA
34	883mV	0.142uA	869mV	1.276uA
35	882mV	0.679uA	886mV	0.895uA
36	886mV	0.107uA	883mV	0.134uA
37	870mV	1.362uA	874mV	0.049uA
38	870mV	1.257uA	876mV	1.005uA
39	872mV	0.969uA	874mV	1.091uA
40	874mV	0.466uA	871mV	1.097uA
41	884mV	0.832uA	872mV	1.191uA
42	883mV	0.847uA	872mV	0.064uA
43	885mV	1.031uA	881mV	0.548uA
44	887mV	0.956uA	885mV	1.298uA
45	884mV	0.600uA	875mV	0.345uA
46	877mV	0.152uA	872mV	0.369uA
47	878mV	0.885uA	872mV	0.233uA
48	876mV	0.738uA	874mV	1.320uA
49	883mV	0.366uA	874mV	0.999uA
50	883mV	0.448uA	874mV	1.301uA
51	883mV	1.217uA	879mV	0.354uA
52	882mV	1.103uA	882mV	1.020uA
53	879mV	1.208uA	874mV	0.934uA
54	882mV	0.703uA	879mV	1.329uA
55	884mV	1.188uA	870mV	0.691uA
56	885mV	0.458uA	879mV	0.651uA
57	876mV	1.123uA	876mV	0.569uA
58	874mV	0.948uA	880mV	0.537uA
59	870mV	0.009uA	884mV	0.228uA
60	874mV	0.257uA	883mV	0.231uA

SeCoS Corporation

Temperature Cycle Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2013.10.02 ~ 2013.11.23
Test Standard : JESD22 STANDER Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
61	883mV	0.424uA	874mV	1.008uA
62	877mV	0.522uA	870mV	0.227uA
63	876mV	1.173uA	874mV	1.127uA
64	875mV	0.212uA	873mV	1.247uA
65	876mV	0.981uA	872mV	0.262uA
66	881mV	0.435uA	883mV	0.402uA
67	871mV	1.216uA	885mV	1.202uA
68	884mV	0.052uA	879mV	0.780uA
69	875mV	0.691uA	881mV	0.256uA
70	884mV	0.162uA	875mV	1.261uA
71	880mV	1.295uA	870mV	0.995uA
72	887mV	0.849uA	877mV	0.230uA
73	872mV	0.168uA	874mV	1.317uA
74	870mV	1.339uA	878mV	1.256uA
75	885mV	0.059uA	877mV	0.159uA
76	877mV	0.114uA	877mV	0.289uA
77	874mV	0.776uA	878mV	0.399uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2013.10.17 ~ 2013.11.29
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	877mV	0.350uA	874mV	0.906uA
2	886mV	0.488uA	877mV	0.541uA
3	882mV	0.753uA	879mV	0.134uA
4	877mV	0.209uA	885mV	1.046uA
5	886mV	0.013uA	875mV	1.086uA
6	870mV	0.281uA	885mV	1.290uA
7	875mV	0.403uA	873mV	0.876uA
8	880mV	0.597uA	880mV	1.312uA
9	877mV	0.870uA	884mV	0.470uA
10	875mV	1.020uA	877mV	0.497uA
11	870mV	1.034uA	882mV	0.312uA
12	886mV	0.892uA	883mV	0.368uA
13	885mV	0.177uA	870mV	0.764uA
14	875mV	0.777uA	884mV	0.679uA
15	876mV	0.218uA	886mV	1.168uA
16	885mV	0.586uA	871mV	0.188uA
17	884mV	1.328uA	882mV	0.763uA
18	880mV	0.728uA	881mV	0.638uA
19	886mV	0.130uA	887mV	0.956uA
20	883mV	1.298uA	880mV	0.212uA
21	873mV	1.161uA	884mV	0.385uA
22	876mV	0.637uA	881mV	1.033uA
23	874mV	1.193uA	870mV	0.560uA
24	883mV	0.856uA	875mV	0.404uA
25	884mV	0.994uA	883mV	0.047uA
26	872mV	1.119uA	882mV	0.035uA
27	872mV	0.707uA	881mV	0.931uA
28	885mV	0.245uA	878mV	0.486uA
29	884mV	0.066uA	885mV	0.117uA
30	885mV	0.921uA	878mV	1.065uA

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2013.10.17 ~ 2013.11.29
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
31	886mV	1.272uA	883mV	1.161uA
32	869mV	0.543uA	877mV	0.380uA
33	885mV	0.313uA	880mV	0.691uA
34	884mV	0.419uA	872mV	0.298uA
35	873mV	0.252uA	881mV	0.074uA
36	873mV	0.276uA	887mV	0.574uA
37	884mV	0.622uA	879mV	0.876uA
38	875mV	1.053uA	886mV	0.690uA
39	873mV	0.024uA	878mV	0.131uA
40	881mV	0.150uA	876mV	0.152uA
41	886mV	0.073uA	877mV	0.960uA
42	883mV	0.305uA	878mV	0.547uA
43	875mV	1.063uA	878mV	1.060uA
44	869mV	1.019uA	875mV	0.625uA
45	869mV	0.120uA	873mV	0.175uA
46	883mV	0.210uA	875mV	0.687uA
47	884mV	1.153uA	880mV	0.652uA
48	876mV	0.963uA	886mV	0.411uA
49	885mV	0.346uA	883mV	0.344uA
50	881mV	0.284uA	886mV	0.525uA
51	879mV	0.161uA	876mV	1.086uA
52	881mV	0.315uA	876mV	0.035uA
53	880mV	0.979uA	883mV	0.037uA
54	882mV	0.031uA	875mV	0.118uA
55	870mV	1.165uA	874mV	0.434uA
56	885mV	0.772uA	886mV	0.461uA
57	873mV	0.414uA	881mV	0.331uA
58	887mV	1.046uA	876mV	0.854uA
59	881mV	1.223uA	875mV	0.805uA
60	870mV	0.066uA	886mV	0.338uA

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2013.10.17 ~ 2013.11.29
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
61	885mV	1.039uA	885mV	0.749uA
62	880mV	0.166uA	877mV	1.125uA
63	883mV	0.739uA	870mV	0.029uA
64	877mV	0.588uA	885mV	0.427uA
65	874mV	0.139uA	878mV	0.134uA
66	877mV	0.656uA	879mV	1.240uA
67	871mV	1.028uA	881mV	0.903uA
68	878mV	0.854uA	884mV	0.526uA
69	885mV	0.563uA	879mV	0.071uA
70	874mV	0.734uA	884mV	0.499uA
71	877mV	1.047uA	882mV	0.511uA
72	869mV	0.443uA	883mV	0.786uA
73	876mV	0.737uA	874mV	0.621uA
74	881mV	0.913uA	885mV	0.232uA
75	880mV	1.071uA	874mV	0.935uA
76	882mV	0.937uA	879mV	1.206uA
77	874mV	0.096uA	882mV	0.266uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature High Hum Reverse Bias Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 85±2℃, 85±5%RH, 80%VR, 1000Hrs
Test Date: 2013.10.02 ~ 2013.11.13
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	873mV	0.190uA	884mV	0.531uA
2	871mV	0.663uA	875mV	0.461uA
3	875mV	1.283uA	885mV	0.800uA
4	880mV	0.790uA	871mV	0.471uA
5	877mV	1.337uA	883mV	1.010uA
6	878mV	1.019uA	883mV	0.178uA
7	869mV	0.919uA	884mV	0.625uA
8	875mV	0.127uA	870mV	0.249uA
9	886mV	1.267uA	880mV	0.617uA
10	872mV	0.689uA	874mV	0.260uA
11	877mV	0.281uA	872mV	0.678uA
12	876mV	0.736uA	879mV	1.123uA
13	886mV	0.282uA	884mV	0.243uA
14	880mV	0.524uA	870mV	0.839uA
15	878mV	0.718uA	877mV	0.555uA
16	881mV	1.135uA	870mV	0.196uA
17	876mV	0.093uA	884mV	0.725uA
18	872mV	0.834uA	871mV	1.244uA
19	872mV	0.986uA	870mV	0.413uA
20	884mV	1.044uA	875mV	1.228uA
21	873mV	0.432uA	875mV	0.117uA
22	873mV	0.572uA	870mV	1.246uA
23	877mV	1.238uA	883mV	1.220uA
24	875mV	0.326uA	872mV	1.078uA
25	882mV	0.535uA	887mV	0.307uA
26	877mV	0.740uA	886mV	0.753uA
27	878mV	1.195uA	879mV	0.793uA
28	871mV	0.297uA	882mV	0.720uA
29	869mV	0.764uA	881mV	0.011uA
30	870mV	0.330uA	881mV	0.542uA

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High Temperature High Hum Reverse Bias Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 85±2℃, 85±5%RH, 80%VR, 1000Hrs
Test Date: 2013.10.02 ~ 2013.11.13
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
31	874mV	0.779uA	878mV	1.328uA
32	884mV	0.371uA	869mV	0.506uA
33	878mV	0.375uA	873mV	0.877uA
34	873mV	0.365uA	886mV	0.821uA
35	871mV	0.679uA	874mV	0.362uA
36	886mV	0.984uA	878mV	0.288uA
37	883mV	1.238uA	879mV	1.099uA
38	880mV	1.066uA	873mV	0.810uA
39	872mV	1.233uA	879mV	1.166uA
40	881mV	0.746uA	881mV	1.004uA
41	882mV	0.736uA	873mV	0.059uA
42	871mV	0.435uA	882mV	0.798uA
43	886mV	1.285uA	887mV	1.028uA
44	881mV	0.108uA	882mV	0.354uA
45	871mV	0.417uA	887mV	0.171uA
46	869mV	0.685uA	883mV	1.040uA
47	874mV	0.543uA	880mV	0.270uA
48	879mV	0.347uA	886mV	0.882uA
49	874mV	0.620uA	885mV	0.526uA
50	881mV	0.512uA	870mV	0.876uA
51	880mV	1.221uA	870mV	0.935uA
52	882mV	0.389uA	885mV	0.278uA
53	882mV	1.321uA	880mV	0.637uA
54	884mV	0.436uA	881mV	0.665uA
55	877mV	1.040uA	881mV	0.646uA
56	887mV	0.115uA	878mV	0.913uA
57	879mV	1.295uA	886mV	0.925uA
58	885mV	0.486uA	878mV	0.954uA
59	883mV	1.000uA	886mV	0.516uA
60	871mV	0.306uA	876mV	0.840uA

SeCoS Corporation

High Temperature High Hum Reverse Bias Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 85±2℃, 85±5%RH, 80%VR, 1000Hrs
Test Date: 2013.10.02 ~ 2013.11.13
Test Standard : JESD22 STANDER Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
61	872mV	0.249uA	873mV	0.676uA
62	874mV	0.201uA	886mV	1.098uA
63	881mV	0.876uA	877mV	0.991uA
64	879mV	0.172uA	874mV	1.161uA
65	879mV	1.342uA	884mV	0.232uA
66	870mV	0.235uA	886mV	0.674uA
67	873mV	0.943uA	886mV	0.949uA
68	869mV	0.113uA	880mV	0.291uA
69	870mV	1.125uA	884mV	1.021uA
70	883mV	0.566uA	882mV	1.331uA
71	882mV	1.280uA	872mV	1.352uA
72	887mV	0.997uA	884mV	0.998uA
73	878mV	0.675uA	883mV	1.351uA
74	877mV	1.212uA	885mV	0.779uA
75	887mV	1.006uA	884mV	0.077uA
76	876mV	0.208uA	874mV	1.009uA
77	875mV	1.030uA	885mV	0.584uA

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Solderability Test Data

Report No : T131130-013
Part No : ES13A
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<0.92V@IF=1A, IR<5uA@VR=200V
Test Condition: 245℃ ± 5℃, 5Sec
Test Date: 2013.11.30 ~ 2013.11.30
Test Standard : JESD22 STANDER Method-B102
Operator: Leo Hsia

Test Result: PASS

	Before		After	
No	VF (mV)	IR (uA)	VF (mV)	IR (uA)
1	869mV	1.030uA	870mV	1.187uA
2	880mV	0.291uA	878mV	0.754uA
3	873mV	0.554uA	877mV	0.278uA
4	883mV	0.993uA	870mV	0.071uA
5	870mV	0.668uA	876mV	0.285uA
6	876mV	0.073uA	879mV	0.711uA
7	872mV	0.405uA	881mV	0.908uA
8	877mV	0.896uA	885mV	1.104uA
9	881mV	0.222uA	881mV	0.892uA
10	873mV	0.776uA	877mV	0.746uA

Made By: Leo Hsia

Approval: Peter Yang

Test Report

No. : CE/2013/A0292 Date : 2013/10/09 Page : 1 of 11

EXCEL CELL ELECTRONIC CO., LTD.
NO. 23, 20 ROAD., TAICHUNG INDUSTRIAL PARK, TAICHUNG, TAIWAN 40850

The following sample(s) was/were submitted and identified by/on behalf of the applicant as :

Sample Submitted By	:	EXCEL CELL ELECTRONIC CO., LTD.
Sample Description	:	C19210 COPPER
Sample Receiving Date	:	2013/10/02
Testing Period	:	2013/10/02 TO 2013/10/09

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Test Result(s) : Please refer to next page(s).

Troy Chang / Manager-Tech
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

EXCEL CELL ELECTRONIC CO., LTD.
NO. 23, 20 ROAD., TAICHUNG INDUSTRIAL PARK, TAICHUNG, TAIWAN 40850

Test Result(s)

PART NAME No.1 : COPPER COLORED METAL

Test Item(s)	Unit	Method	MDL	Result
				No.1
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Lead (Pb)	mg/kg	With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.
Mercury (Hg)	mg/kg	With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.
Hexavalent Chromium Cr(VI)	**	With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative
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	With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	%	With reference to EN 14372. Analysis was performed by GC/MS.	0.003	n.d.
Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.
PFOA (CAS No.: 335-67-1)	mg/kg	With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.

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Test Item(s)	Unit	Method	MDL	Result
				No.1
Sum of PBBs	mg/kg	With reference to IEC 62321: 2008 and performed by GC/MS.	-	n.d.
Monobromobiphenyl			5	n.d.
Dibromobiphenyl			5	n.d.
Tribromobiphenyl			5	n.d.
Tetrabromobiphenyl			5	n.d.
Pentabromobiphenyl			5	n.d.
Hexabromobiphenyl			5	n.d.
Heptabromobiphenyl			5	n.d.
Octabromobiphenyl			5	n.d.
Nonabromobiphenyl			5	n.d.
Decabromobiphenyl			5	n.d.
Sum of PBDEs			-	n.d.
Monobromodiphenyl ether			5	n.d.
Dibromodiphenyl ether			5	n.d.
Tribromodiphenyl ether			5	n.d.
Tetrabromodiphenyl ether			5	n.d.
Pentabromodiphenyl ether			5	n.d.
Hexabromodiphenyl ether			5	n.d.
Heptabromodiphenyl ether			5	n.d.
Octabromodiphenyl ether			5	n.d.
Nonabromodiphenyl ether			5	n.d.
Decabromodiphenyl ether			5	n.d.
Halogen				
Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg	With reference to BS EN 14582:2007. Analysis was performed by IC.	50	n.d.
Halogen-Chlorine (Cl) (CAS No.: 22537-15-1)			50	n.d.
Halogen-Bromine (Br) (CAS No.: 10097-32-2)			50	n.d.
Halogen-Iodine (I) (CAS No.: 14362-44-8)			50	n.d.

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Note：

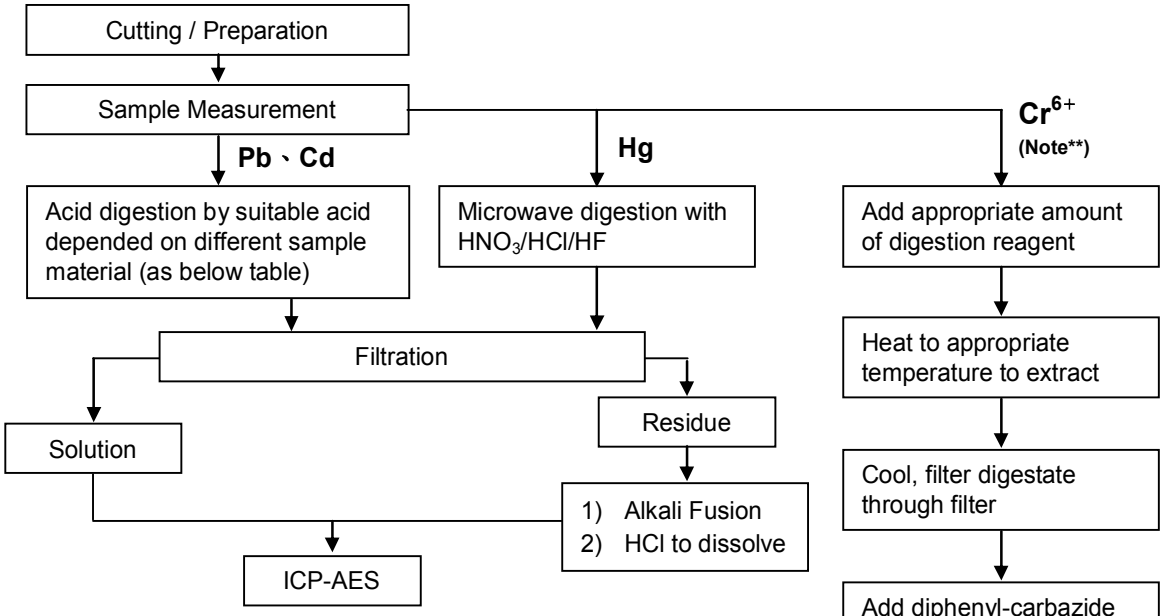
1. mg/kg = ppm；0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. " - " = Not Regulated
5. ** = Qualitative analysis (No Unit)
6. # = a. Positive means the presence of CrVI on the tested areas
   b. Negative means the absence of CrVI on the tested areas
   The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² tested areas.

PFOS Reference Information : POPs - (EU) 757/2010

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 1μg/m².

EXCEL CELL ELECTRONIC CO., LTD.
NO. 23, 20 ROAD., TAICHUNG INDUSTRIAL PARK, TAICHUNG, TAIWAN 40850

1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
（Cr^{6+} test method excluded）
2) Name of the person who made measurement: Climbgreat Yang
3) Name of the person in charge of measurement: Troy Chang



Sample Material	Digestion Acid
Steel, copper, aluminum, solder	Aqua regia, HNO_3, HCl, HF, H_2O_2
Glass	HNO_3/HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO_3
Plastic	H_2SO_4, H_2O_2, HNO_3, HCl
Others	Added appropriate reagent to total digestion

Note :** (1) For non-metallic material, add alkaline digestion reagent and heat to 90~95 ℃.
(2) For metallic material, add pure water and heat to boiling .

EXCEL CELL ELECTRONIC CO., LTD.
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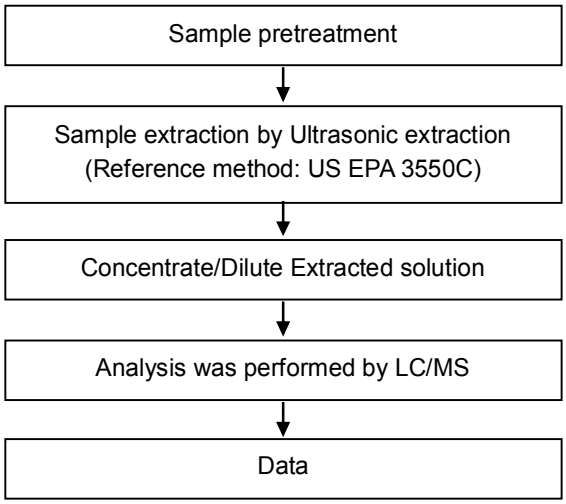
PFOA/PFOS analytical flow chart of Ultrasonic extraction (LC/MS) procedure

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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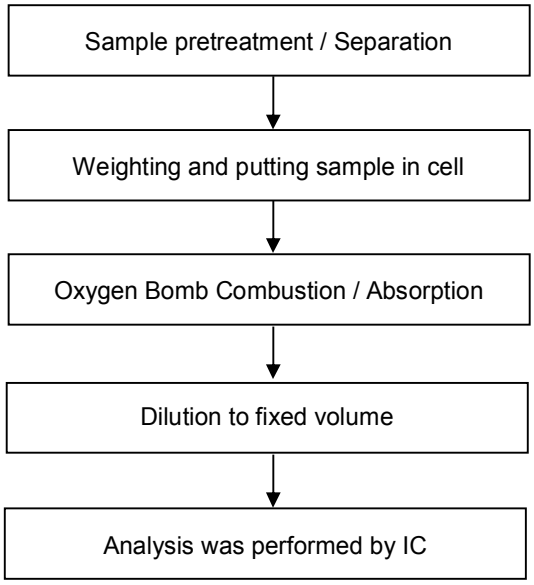
Analytical flow chart of halogen content

- Name of the person who made measurement: Rita Chen
- Name of the person in charge of measurement: Troy Chang



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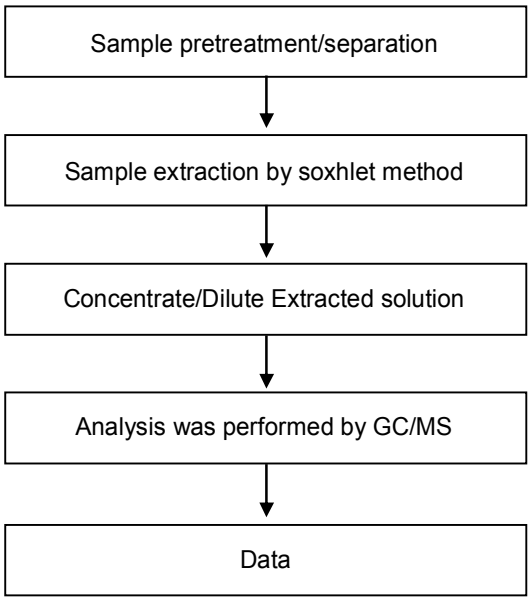
Analytical flow chart of phthalate content

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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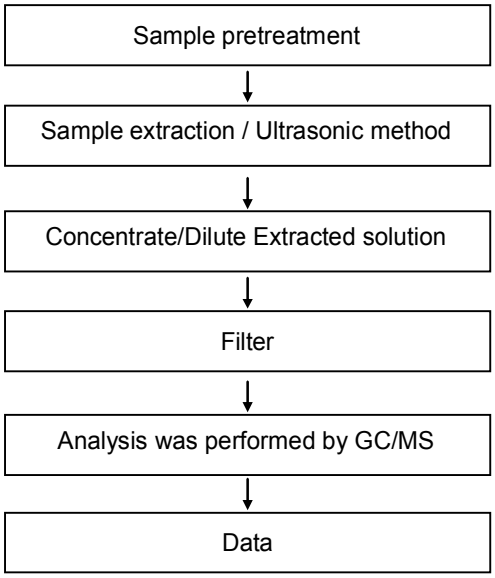
HBCDD analytical flow chart

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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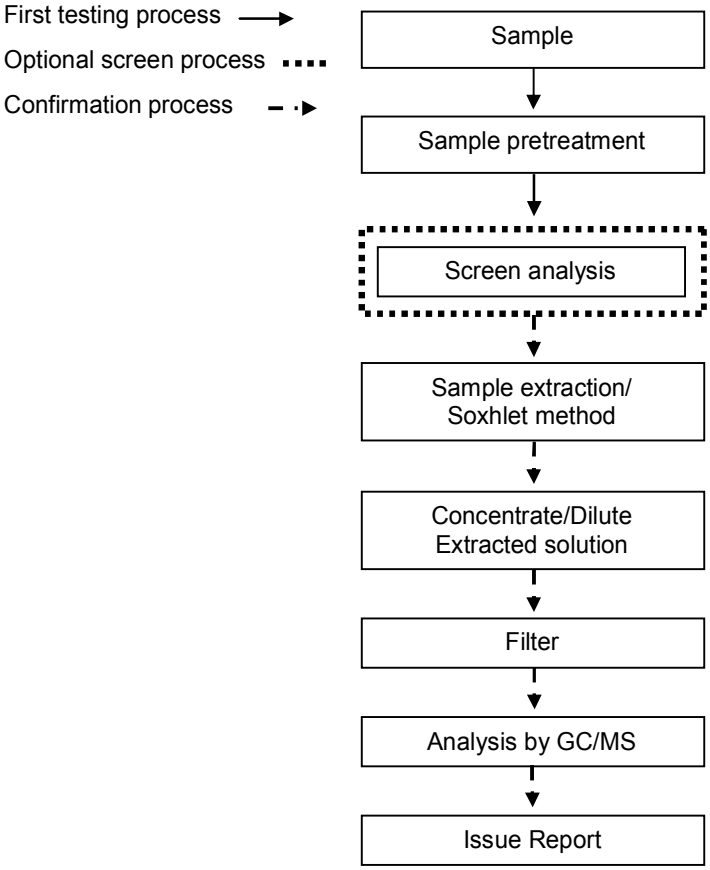
PBB/PBDE analytical FLOW CHART

- Name of the person who made measurement: Roman Wong
- Name of the person in charge of measurement: Troy Chang



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

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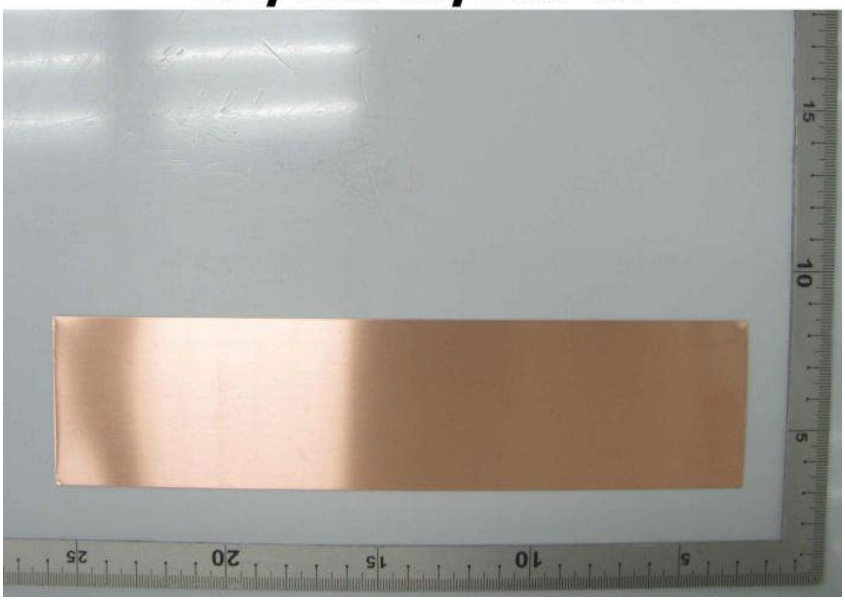

** End of Report **