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
2017-12-08C-03	2018/3/8	2017/12/8

PCN Classification	Product Category
Major	MOSFET

Subject

Production process change from lead free to halogen free.

Affected Product(s)

SOP-8 Package of MOSFET, Such as attachments.

Description of Change(s)

To meet EU environment requirement, we implement halogen free to our products.

Content of Change(s)

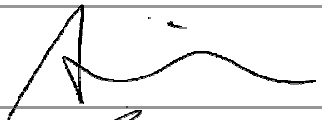
Adding “-C” to each part number.

Impact(s)

N/A

Attachment(s)

SGS report. Reliability report.

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

For more information, please contact us directly or visit our website http://www.secosgmbh.com

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Affected Product(s)

SSG05N10J	SSG4503J
SSG07N10J	SSG4822J
SSG4406J	SSG60P05J
SSG4407J	SSG7328J
SSG4410J	SSG9435J
SSG4438J	SSG9926J
SSG4459J	

SeCoS Corporation

Reliability Testing Summary Report

Date: 2017/11/30 Document No.: SK17 -11- 104

Test Item	P/N	Test Condition	(LTPD)	Sample Numbers	Allow Fall Numbers	Fall Numbers	Result
HTRB High Temp Reverse Bias	SSG05N10J-C	150 ± 5℃, 80%VDS, T = 1000hrs		77	0	0	ACC
HTSL High Temperature Storage Life	SSG05N10J-C	150℃, T = 1000 hrs		77	0	0	ACC
PCT Pressure Cooker Test	SSG05N10J-C	121℃, 29.7PSIG, 168 hrs		77	0	0	ACC
TCT Temperature Cycle Test	SSG05N10J-C	-55℃/30min, 150℃/30min, For 1000 Cycle		77	0	0	ACC
THT High Temperature High Humidity Test	SSG05N10J-C	85 ± 2℃, RH=85±5%, 1000 hrs		77	0	0	ACC
H3TRB High Temper High Humidity Reverse Bies Test	SSG05N10J-C	85 ± 2℃, RH=85±5%, 80%VDS, 1000 hrs		77	0	0	ACC
Resistance to Solder Heat Test	SSG05N10J-C	270℃±5℃, 7Sec +2/-0Sec		10	0	0	ACC

Judgment:

■ **qualified** □ **unqualified**

Testing Start Date: 2017.10.05 Testing End Date: 2017.11.30

Tester: King Huang Approval: Peter Yang

SeCoS Corporation

Electrical Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=100V; 1.0V<$V_{GS(th)}$<2.0V@I_D=250μA;
$R_{DS(ON)}$<140mΩ@V_{GS}=10V, I_D=5A
Test Condition: 25℃
Test Date: 2017.10.05
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	Die1			Die2		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
1	266.4	1.645	49.39	266.2	1.574	50.20
2	226.7	1.524	50.05	261.6	1.615	48.33
3	263.3	1.621	49.68	214.6	1.507	49.66
4	223.7	1.568	48.46	261.8	1.650	48.25
5	265.9	1.629	48.75	247.5	1.589	49.84
6	242.9	1.540	48.68	226.3	1.504	50.22
7	257.2	1.591	48.31	268.1	1.524	49.40
8	231.7	1.541	49.18	229.5	1.506	50.66
9	252.2	1.497	50.82	233.1	1.498	50.78
10	255.7	1.558	49.69	246.1	1.600	50.08
11	213.2	1.515	50.18	220.9	1.499	48.22
12	252.4	1.535	49.69	227.4	1.517	48.55
13	221.1	1.530	49.47	257.8	1.584	50.72
14	263.5	1.616	49.47	244.7	1.535	50.40
15	247.4	1.648	49.44	246.3	1.540	49.46
16	232.7	1.608	49.53	259.3	1.527	49.92
17	264.6	1.565	49.67	236.0	1.625	49.74
18	218.4	1.591	48.52	262.3	1.513	48.61
19	262.5	1.517	49.15	263.9	1.516	48.92
20	254.4	1.644	48.52	264.5	1.626	49.54
21	214.0	1.624	49.06	271.1	1.568	50.72
22	217.7	1.577	48.51	235.9	1.603	48.90
23	215.6	1.502	49.50	268.7	1.579	48.09
24	266.8	1.611	50.87	213.3	1.546	49.72
25	250.7	1.608	48.10	240.3	1.598	50.09
26	255.0	1.615	49.16	237.3	1.501	50.41
27	226.0	1.529	49.60	218.7	1.570	49.14
28	252.7	1.498	48.42	236.8	1.621	50.63
29	239.9	1.512	48.05	216.7	1.522	50.79

SeCoS Corporation

Electrical Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=100V; 1.0V<$V_{GS(th)}$<2.0V@I_D=250μA;
$R_{DS(ON)}$<140mΩ@V_{GS}=10V, I_D=5A
Test Condition: 25℃
Test Date: 2017.10.05
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	Die1			Die2		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
30	239.7	1.592	50.53	213.9	1.517	49.40
31	264.5	1.501	48.31	267.2	1.596	49.51
32	243.0	1.625	48.65	247.4	1.529	49.40
33	232.4	1.578	48.46	228.2	1.530	48.24
34	218.0	1.647	48.40	234.7	1.527	50.35
35	264.5	1.576	49.48	237.4	1.647	50.29
36	218.4	1.628	49.97	217.8	1.556	49.81
37	263.8	1.577	49.19	214.6	1.612	48.22
38	222.2	1.610	48.67	232.0	1.607	49.17
39	241.6	1.623	50.27	270.8	1.553	49.95
40	228.7	1.569	48.21	264.2	1.609	49.16
41	237.0	1.509	49.37	223.6	1.563	50.88
42	257.6	1.618	48.25	232.5	1.507	50.71
43	247.2	1.636	50.07	233.3	1.548	48.71
44	220.0	1.540	48.24	245.0	1.497	49.39
45	249.8	1.536	49.92	231.5	1.603	50.44
46	262.4	1.622	48.25	231.3	1.598	48.02
47	224.0	1.634	49.81	265.0	1.609	49.63
48	227.8	1.574	49.37	270.7	1.562	48.30
49	271.3	1.499	48.32	260.8	1.557	49.89
50	224.0	1.567	50.09	256.1	1.556	49.43
51	213.1	1.502	50.88	221.0	1.595	48.40
52	247.8	1.598	49.26	220.9	1.542	48.77
53	235.2	1.531	49.73	223.9	1.553	50.64
54	241.7	1.568	48.58	216.2	1.548	50.78
55	227.9	1.529	49.45	270.7	1.503	50.61
56	238.1	1.617	49.51	250.5	1.589	50.78
57	234.6	1.641	48.07	261.2	1.543	48.50
58	245.8	1.502	49.58	219.0	1.633	49.10

SeCoS Corporation

Electrical Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=100V; 1.0V<$V_{GS(th)}$<2.0V@I_D=250μA;
$R_{DS(ON)}$<140mΩ@V_{GS}=10V, I_D=5A
Test Condition: 25℃
Test Date: 2017.10.05
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	Die1			Die2		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
59	247.3	1.577	48.29	256.5	1.618	48.27
60	254.6	1.499	48.27	271.2	1.648	48.42
61	269.4	1.636	48.18	240.2	1.527	48.93
62	255.3	1.644	49.58	217.3	1.606	49.77
63	221.4	1.596	50.59	231.3	1.503	49.01
64	253.8	1.527	49.30	219.3	1.498	49.01
65	260.1	1.558	50.32	249.5	1.580	48.46
66	229.4	1.607	49.47	261.5	1.512	50.42
67	236.1	1.629	49.83	237.6	1.540	49.57
68	243.1	1.630	48.29	265.6	1.522	50.61
69	238.8	1.547	48.48	267.4	1.601	50.37
70	249.1	1.537	49.09	248.5	1.628	48.70
71	255.3	1.520	48.08	228.7	1.643	49.03
72	262.1	1.599	50.08	217.0	1.575	50.86
73	246.9	1.595	48.02	266.3	1.515	49.27
74	252.5	1.551	48.48	246.2	1.572	49.89
75	228.9	1.641	50.79	264.5	1.608	50.43
76	258.9	1.507	50.82	231.2	1.528	49.95
77	218.8	1.630	50.90	215.1	1.557	50.78

Made By: King Huang

Approval: Peter Yang

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: 150 ± 5℃, 80%VDS, T = 1000 hrs

Test Date: 2017.10.05 ~ 2017.11.17

Test Standard : JESD22 STANDARD Method-A108

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
1	269.6	1.628	50.11	241.1	1.582	48.52	252.5	1.543	49.24	216.7	1.531	49.40
2	244.4	1.610	49.36	225.3	1.620	50.40	266.4	1.571	49.16	256.3	1.628	50.77
3	233.1	1.628	49.56	224.1	1.624	49.75	222.6	1.578	48.52	222.2	1.597	49.16
4	256.5	1.517	48.11	266.4	1.539	48.08	214.5	1.609	49.72	236.0	1.574	50.50
5	253.7	1.591	49.86	217.9	1.588	49.25	223.7	1.600	48.34	255.5	1.625	50.17
6	225.0	1.524	48.33	251.3	1.607	49.93	243.0	1.560	48.72	258.1	1.636	50.70
7	260.9	1.621	49.68	244.6	1.583	48.14	219.9	1.512	48.19	227.3	1.628	50.09
8	234.0	1.647	49.07	231.5	1.568	48.18	245.6	1.519	50.68	252.9	1.615	49.06
9	263.9	1.639	50.81	213.9	1.584	50.64	248.4	1.550	49.14	259.3	1.605	48.05
10	263.7	1.583	48.42	247.7	1.606	49.16	247.2	1.636	48.41	217.5	1.618	50.05
11	228.3	1.635	49.48	243.3	1.571	48.63	230.6	1.500	49.84	224.0	1.577	49.79
12	244.3	1.590	48.97	237.5	1.545	48.37	269.0	1.513	48.43	239.2	1.601	50.69
13	265.9	1.600	48.09	233.2	1.627	50.83	223.9	1.523	48.98	256.6	1.531	49.47
14	262.5	1.625	48.15	240.2	1.510	48.89	232.1	1.644	50.88	215.1	1.586	48.16
15	242.9	1.608	49.39	229.2	1.539	49.82	261.9	1.558	48.61	242.9	1.507	48.15
16	223.6	1.508	50.27	259.2	1.547	48.84	258.0	1.640	49.18	237.0	1.543	50.43
17	223.0	1.634	50.02	223.6	1.534	48.42	267.7	1.510	50.65	268.3	1.598	48.40
18	232.9	1.638	49.84	219.4	1.582	50.87	233.6	1.504	48.07	238.6	1.577	49.16
19	238.9	1.509	48.87	238.2	1.646	49.41	214.5	1.649	49.14	268.2	1.631	49.81
20	239.0	1.533	50.15	256.7	1.593	48.84	265.4	1.639	50.31	246.6	1.637	48.01
21	214.9	1.602	48.19	218.5	1.549	50.04	253.1	1.624	50.16	238.9	1.586	50.20
22	241.7	1.499	49.67	244.5	1.500	48.65	247.9	1.573	49.13	270.3	1.603	48.82
23	249.2	1.569	49.39	263.4	1.503	50.38	265.5	1.566	48.34	252.1	1.597	49.42
24	256.8	1.639	49.82	266.0	1.525	48.04	225.5	1.512	48.84	268.9	1.537	50.39
25	220.6	1.606	48.60	218.9	1.513	49.23	264.1	1.619	48.47	260.3	1.646	49.04
26	266.8	1.519	48.14	229.2	1.635	50.33	240.7	1.613	48.72	214.2	1.581	50.26
27	252.6	1.540	50.48	250.0	1.566	50.57	266.8	1.641	50.36	223.6	1.648	50.14
28	236.5	1.541	48.07	262.0	1.498	48.70	243.7	1.583	49.94	230.6	1.506	50.61
29	219.3	1.582	49.11	263.4	1.608	49.12	223.4	1.647	49.25	216.4	1.531	50.80

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 150 ± 5℃, 80%VDS, T = 1000 hrs
Test Date: 2017.10.05 ~ 2017.11.17
Test Standard : JESD22 STANDARD Method-A108
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
30	228.5	1.618	50.50	234.4	1.624	49.63	219.2	1.554	50.06	238.5	1.510	50.63
31	228.4	1.532	48.36	256.1	1.608	49.39	239.2	1.525	49.65	261.3	1.617	48.70
32	225.2	1.614	48.95	216.2	1.641	49.19	249.2	1.551	49.74	270.1	1.598	50.33
33	254.8	1.541	49.94	252.3	1.588	50.43	267.6	1.629	48.75	250.4	1.506	50.32
34	236.6	1.641	50.74	231.3	1.576	50.53	264.0	1.559	50.48	260.5	1.557	50.19
35	271.4	1.516	48.27	247.7	1.506	48.71	260.6	1.506	49.96	228.4	1.566	50.59
36	239.7	1.525	48.50	268.3	1.537	48.26	242.6	1.598	50.47	226.7	1.590	49.58
37	245.8	1.638	48.74	236.5	1.504	48.86	264.7	1.570	50.42	213.7	1.649	49.41
38	261.6	1.545	49.53	268.9	1.561	50.28	270.3	1.499	50.29	230.7	1.623	50.73
39	270.0	1.616	49.72	243.6	1.585	49.28	258.9	1.641	50.68	251.1	1.550	49.17
40	261.0	1.621	49.81	259.6	1.581	50.46	234.9	1.646	50.40	223.5	1.518	49.74
41	217.5	1.638	50.53	254.9	1.508	50.43	247.7	1.524	50.57	240.9	1.594	48.49
42	232.3	1.577	48.81	252.9	1.643	50.76	223.2	1.640	49.42	228.5	1.547	50.00
43	236.7	1.539	48.69	227.7	1.528	50.73	235.0	1.584	49.83	254.9	1.643	50.51
44	244.7	1.574	48.62	250.8	1.639	50.35	239.8	1.609	48.39	223.1	1.556	48.50
45	236.4	1.570	48.37	253.1	1.556	50.11	254.8	1.567	48.65	246.3	1.527	50.30
46	262.5	1.640	48.91	214.9	1.635	48.37	261.9	1.572	50.84	228.4	1.633	50.54
47	244.2	1.577	48.02	220.9	1.642	49.87	261.0	1.601	48.52	247.0	1.623	49.35
48	219.1	1.563	50.34	257.1	1.560	50.04	230.3	1.641	50.16	219.9	1.599	48.65
49	256.3	1.642	49.35	264.0	1.586	48.41	266.3	1.546	50.47	225.5	1.578	48.30
50	237.1	1.618	50.49	249.4	1.607	50.07	238.0	1.516	49.64	237.4	1.615	50.10
51	245.2	1.548	48.46	233.7	1.549	50.27	223.1	1.596	48.64	265.4	1.568	50.62
52	236.2	1.604	50.60	229.7	1.550	50.19	220.6	1.632	50.45	226.2	1.500	50.13
53	229.8	1.578	50.85	256.9	1.650	48.54	267.5	1.579	50.10	264.8	1.516	48.48
54	256.2	1.539	50.18	236.2	1.547	50.02	222.8	1.530	48.83	266.9	1.637	50.54
55	234.2	1.516	50.83	213.8	1.566	50.16	234.3	1.573	50.84	245.7	1.634	49.26
56	241.6	1.625	48.40	213.6	1.589	48.77	264.0	1.567	50.53	271.6	1.642	49.33
57	257.3	1.640	48.05	265.5	1.562	49.88	251.2	1.601	50.20	220.4	1.555	48.39
58	260.4	1.621	48.09	265.9	1.596	49.12	255.7	1.625	49.74	269.2	1.587	49.52

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 150 ± 5℃, 80%VDS, T = 1000 hrs
Test Date: 2017.10.05 ~ 2017.11.17
Test Standard : JESD22 STANDARD Method-A108
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
59	262.7	1.626	49.38	263.9	1.544	48.08	257.8	1.601	50.59	240.1	1.527	48.40
60	265.4	1.592	49.65	220.7	1.647	49.44	248.2	1.626	49.48	249.2	1.567	49.50
61	223.3	1.645	50.23	271.3	1.518	49.35	254.5	1.579	50.00	261.9	1.586	48.67
62	241.1	1.539	48.62	216.1	1.573	49.24	227.9	1.503	50.69	233.2	1.615	48.29
63	233.9	1.605	50.58	233.3	1.552	49.50	237.6	1.595	49.31	254.1	1.510	48.17
64	253.9	1.570	50.43	255.5	1.526	50.41	253.9	1.505	48.30	260.7	1.586	48.54
65	254.0	1.618	48.15	236.3	1.517	49.70	269.4	1.537	49.24	221.0	1.605	49.08
66	234.0	1.624	49.75	242.3	1.506	50.42	259.7	1.558	48.74	266.7	1.582	50.36
67	228.6	1.588	49.18	233.3	1.604	48.06	232.8	1.530	50.45	249.4	1.532	50.71
68	219.2	1.588	48.05	242.0	1.646	49.06	256.7	1.505	50.60	227.2	1.639	49.64
69	268.7	1.646	50.08	231.0	1.535	50.80	231.9	1.590	49.56	234.7	1.497	49.55
70	227.3	1.548	50.65	260.8	1.509	49.85	237.6	1.583	48.53	260.5	1.642	50.64
71	261.4	1.508	50.50	251.3	1.600	50.11	252.2	1.620	48.25	216.8	1.631	50.41
72	271.5	1.638	50.36	268.5	1.610	50.75	235.6	1.512	48.34	262.0	1.633	50.18
73	239.7	1.591	50.15	257.0	1.627	50.61	257.3	1.644	48.31	254.6	1.592	50.89
74	227.0	1.505	48.61	232.5	1.498	48.91	251.6	1.610	49.48	270.4	1.577	49.05
75	227.8	1.509	49.73	258.2	1.592	48.36	254.0	1.638	50.69	232.2	1.591	48.20
76	270.4	1.567	49.70	255.9	1.636	49.20	260.0	1.630	49.67	218.6	1.606	48.04
77	259.7	1.562	49.80	271.1	1.530	49.49	247.1	1.592	49.17	271.8	1.555	50.27

Made By: King Huang Approval: Peter Yang

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 150℃, 1000Hrs
Test Date: 2017.10.05 ~ 2017.11.17
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
1	238.9	1.638	48.56	268.4	1.522	49.25	222.5	1.535	50.70	268.9	1.532	48.71
2	240.2	1.560	50.15	265.0	1.550	48.76	249.8	1.516	49.53	233.3	1.516	49.04
3	241.4	1.556	50.39	269.2	1.602	49.76	228.8	1.621	49.93	262.6	1.501	48.46
4	249.5	1.644	50.52	224.9	1.559	49.72	259.4	1.570	48.29	217.9	1.508	49.66
5	271.1	1.639	49.22	224.9	1.524	49.32	227.7	1.512	48.05	255.8	1.562	49.72
6	238.0	1.619	48.89	268.7	1.516	48.87	271.3	1.554	50.66	223.8	1.548	49.51
7	223.3	1.615	48.96	226.9	1.517	48.95	227.8	1.569	50.32	227.9	1.531	48.24
8	235.0	1.513	50.40	234.7	1.584	48.68	229.8	1.535	50.80	227.0	1.569	50.52
9	244.5	1.582	48.46	244.1	1.578	50.70	260.9	1.546	48.36	256.8	1.624	49.40
10	222.9	1.592	50.77	253.4	1.590	49.07	252.1	1.529	49.22	234.4	1.618	48.49
11	268.0	1.547	50.53	263.5	1.604	50.88	213.7	1.497	49.41	250.3	1.644	50.49
12	266.5	1.559	48.39	235.1	1.527	48.22	236.7	1.536	50.67	252.2	1.524	48.61
13	240.3	1.571	50.79	216.8	1.619	50.84	227.7	1.555	50.11	223.8	1.598	50.39
14	234.8	1.637	50.90	225.4	1.634	50.27	235.4	1.642	48.21	238.9	1.498	49.33
15	260.4	1.583	48.52	234.0	1.613	49.16	227.1	1.530	50.77	227.9	1.614	48.45
16	231.4	1.573	50.52	242.8	1.564	50.06	239.9	1.644	49.73	250.3	1.533	48.67
17	222.8	1.499	49.13	244.0	1.645	49.89	240.0	1.511	49.00	246.0	1.583	49.34
18	263.6	1.505	48.72	221.4	1.628	49.76	253.3	1.555	48.68	236.1	1.511	48.09
19	238.2	1.566	49.80	219.0	1.542	49.57	265.1	1.556	50.62	269.6	1.561	49.52
20	255.8	1.637	48.48	218.0	1.517	50.30	269.2	1.583	50.46	271.4	1.617	48.84
21	270.3	1.576	49.38	249.6	1.596	48.30	263.1	1.564	50.61	246.3	1.620	48.76
22	234.6	1.527	49.83	221.7	1.516	49.57	233.9	1.564	49.52	245.9	1.565	50.71
23	223.5	1.584	50.38	229.1	1.536	49.96	217.3	1.644	48.11	215.0	1.589	48.34
24	260.1	1.556	48.62	214.5	1.604	49.02	251.5	1.498	48.09	247.9	1.576	49.21
25	222.2	1.600	48.20	252.5	1.505	48.86	237.9	1.648	48.47	266.1	1.502	48.69
26	215.7	1.649	50.33	260.5	1.507	50.51	252.5	1.559	48.09	227.3	1.549	48.02
27	266.6	1.562	50.04	216.4	1.598	50.87	216.0	1.545	49.63	214.4	1.519	49.32
28	235.3	1.537	50.21	241.8	1.616	49.19	251.7	1.536	48.87	254.9	1.546	49.39
29	248.9	1.558	50.21	261.0	1.556	50.33	265.4	1.587	50.85	220.6	1.631	48.60

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 150℃, 1000Hrs
Test Date: 2017.10.05 ~ 2017.11.17
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
30	236.3	1.528	48.60	218.5	1.529	50.01	258.0	1.598	50.77	232.4	1.526	50.34
31	221.3	1.545	48.12	230.0	1.649	48.62	255.3	1.646	48.86	219.0	1.618	49.77
32	256.1	1.528	49.51	220.4	1.502	49.77	230.6	1.575	50.19	234.8	1.556	49.78
33	256.7	1.547	49.74	235.8	1.645	48.46	256.3	1.597	50.36	229.4	1.567	50.20
34	213.3	1.528	49.80	243.1	1.584	49.73	228.1	1.548	50.83	261.3	1.533	49.94
35	219.5	1.501	49.63	258.0	1.521	50.45	223.5	1.511	50.19	242.1	1.530	48.23
36	248.5	1.563	49.52	237.9	1.586	48.47	237.4	1.622	49.81	237.8	1.508	49.57
37	216.9	1.575	49.90	245.9	1.587	48.45	224.1	1.646	48.92	234.2	1.640	49.48
38	260.0	1.537	48.15	254.4	1.595	48.64	232.9	1.605	49.14	246.9	1.619	50.71
39	244.5	1.620	49.65	265.1	1.611	49.84	230.1	1.631	48.43	245.9	1.611	50.03
40	263.7	1.607	50.11	237.2	1.551	49.39	214.5	1.517	48.13	258.9	1.525	50.32
41	235.6	1.549	48.26	250.4	1.588	48.53	214.8	1.529	48.52	245.7	1.609	48.46
42	240.2	1.534	48.43	267.1	1.527	49.68	224.6	1.572	49.95	223.7	1.514	50.34
43	220.2	1.619	49.25	251.1	1.527	49.22	258.9	1.564	48.01	260.3	1.533	49.80
44	238.4	1.592	50.59	237.2	1.615	48.64	270.2	1.539	50.89	241.1	1.571	50.06
45	216.5	1.567	48.21	261.3	1.580	49.44	226.0	1.519	48.86	223.2	1.595	48.01
46	236.1	1.576	48.25	262.9	1.597	48.79	253.6	1.607	50.65	241.2	1.547	49.58
47	250.3	1.533	50.06	234.7	1.639	48.23	223.1	1.641	50.82	257.7	1.638	48.64
48	223.7	1.585	49.64	261.4	1.637	48.46	240.3	1.605	50.84	228.6	1.504	48.49
49	225.5	1.509	49.73	223.0	1.536	50.80	264.4	1.574	50.61	224.0	1.562	50.79
50	248.8	1.631	48.16	216.2	1.595	50.23	233.2	1.617	50.67	267.1	1.606	48.64
51	228.8	1.540	49.97	259.5	1.541	49.76	236.8	1.566	49.97	231.0	1.503	49.12
52	220.7	1.634	48.02	213.5	1.550	48.04	257.4	1.584	48.97	231.9	1.507	48.18
53	245.1	1.596	48.86	256.5	1.597	48.15	265.2	1.541	49.30	228.2	1.541	49.73
54	236.7	1.524	50.48	270.6	1.568	50.45	228.1	1.502	50.01	261.0	1.626	48.78
55	260.3	1.511	49.78	220.1	1.578	48.33	254.4	1.560	50.32	258.8	1.537	50.85
56	254.7	1.569	48.14	248.0	1.638	49.03	268.1	1.538	50.12	213.3	1.536	49.10
57	266.7	1.528	48.20	235.7	1.502	48.63	257.5	1.513	50.79	232.7	1.633	49.28
58	219.9	1.632	50.87	236.6	1.615	48.38	222.8	1.630	50.27	240.6	1.501	48.99

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 150℃, 1000Hrs
Test Date: 2017.10.05 ~ 2017.11.17
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
59	216.7	1.545	48.97	255.0	1.556	48.14	268.1	1.562	49.38	263.4	1.540	48.38
60	271.7	1.502	50.86	265.0	1.565	49.17	268.3	1.524	48.37	236.0	1.553	49.91
61	237.8	1.562	48.92	267.4	1.515	50.22	243.9	1.577	50.43	237.1	1.577	50.46
62	260.9	1.614	49.45	271.8	1.515	49.43	214.2	1.507	48.42	258.2	1.508	49.83
63	263.7	1.529	49.52	252.2	1.511	49.75	262.1	1.503	50.03	236.5	1.585	50.28
64	244.1	1.501	48.90	222.4	1.611	48.64	220.5	1.521	50.54	218.2	1.541	49.67
65	249.5	1.540	48.03	266.2	1.576	49.73	231.6	1.593	49.68	248.7	1.598	48.03
66	254.5	1.583	49.35	256.3	1.524	50.33	223.1	1.617	50.06	217.9	1.558	48.86
67	261.7	1.521	49.98	235.3	1.601	48.09	270.8	1.631	49.50	227.3	1.561	48.84
68	253.5	1.641	49.73	236.6	1.621	49.30	220.5	1.566	50.49	252.9	1.542	48.42
69	243.8	1.579	48.77	252.4	1.529	49.05	252.4	1.630	48.72	229.1	1.559	48.82
70	266.3	1.506	48.12	265.9	1.580	48.34	213.8	1.603	50.55	223.2	1.619	48.29
71	255.3	1.549	48.73	260.3	1.578	50.21	229.4	1.624	50.77	258.4	1.518	49.80
72	253.7	1.522	49.11	222.5	1.605	48.76	227.0	1.597	50.18	260.8	1.509	48.97
73	248.4	1.575	49.32	221.7	1.554	50.26	242.1	1.557	49.37	252.9	1.614	50.45
74	225.4	1.533	50.63	245.0	1.576	48.31	260.5	1.581	49.95	253.2	1.572	48.31
75	223.5	1.550	49.53	241.0	1.584	50.72	259.8	1.520	48.21	225.9	1.646	50.84
76	223.1	1.560	48.34	240.6	1.597	49.93	234.5	1.538	49.59	238.8	1.558	49.06
77	253.4	1.596	50.27	216.5	1.554	49.88	222.0	1.643	49.90	230.2	1.624	49.89

Made By: King Huang Approval: Peter Yang

SeCoS Corporation

Pressure Cooker Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2017.10.05 ~ 2017.10.13
Test Standard : JESD22 STANDARD Method-A102
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
1	219.1	1.612	49.73	234.9	1.552	49.64	217.5	1.649	49.85	271.5	1.511	49.45
2	233.4	1.589	50.04	245.0	1.555	50.26	246.0	1.649	50.06	252.3	1.610	49.22
3	223.3	1.524	49.55	270.5	1.518	50.85	258.8	1.557	50.00	234.1	1.630	48.44
4	259.9	1.550	48.31	236.5	1.601	49.20	214.6	1.635	49.26	238.3	1.605	49.77
5	256.0	1.635	48.58	233.2	1.563	49.56	230.3	1.526	50.22	249.1	1.647	48.18
6	269.9	1.549	49.84	264.7	1.625	48.15	243.5	1.577	49.35	215.9	1.597	48.91
7	222.6	1.511	48.27	266.0	1.570	50.76	251.0	1.500	48.26	222.1	1.640	49.43
8	227.1	1.587	49.89	240.2	1.622	49.05	215.4	1.537	49.48	226.0	1.612	49.68
9	257.2	1.582	50.45	223.0	1.573	50.33	245.4	1.629	50.56	259.3	1.591	50.15
10	268.7	1.520	50.59	258.9	1.578	48.87	224.5	1.548	49.00	247.1	1.632	49.98
11	249.8	1.575	48.04	265.4	1.611	50.06	249.4	1.620	48.03	221.6	1.513	50.81
12	268.1	1.541	50.54	236.3	1.630	50.49	249.5	1.557	48.83	243.8	1.589	48.25
13	265.8	1.650	48.89	269.9	1.647	50.11	256.5	1.571	50.52	253.6	1.560	50.45
14	228.6	1.537	49.84	260.5	1.559	50.19	264.5	1.584	49.92	234.8	1.571	48.04
15	222.7	1.562	49.63	213.9	1.603	48.92	242.5	1.519	49.74	245.5	1.549	50.80
16	238.7	1.534	48.73	245.3	1.636	48.71	266.8	1.578	50.71	230.6	1.588	49.97
17	254.9	1.593	48.67	215.1	1.630	50.19	257.5	1.569	49.75	258.1	1.535	48.87
18	215.0	1.578	49.90	263.2	1.598	49.90	242.0	1.515	50.03	260.4	1.576	48.08
19	247.8	1.501	50.90	214.2	1.579	49.84	232.0	1.579	49.02	255.6	1.612	50.33
20	229.5	1.624	49.83	218.8	1.520	49.18	257.3	1.544	50.10	269.7	1.530	48.41
21	256.7	1.568	49.21	268.7	1.586	48.14	239.4	1.542	49.62	246.7	1.549	48.81
22	269.4	1.519	49.52	229.7	1.585	48.52	251.0	1.513	50.73	229.6	1.632	49.13
23	262.0	1.626	48.05	230.1	1.550	48.74	216.0	1.596	48.69	236.6	1.639	50.49
24	221.1	1.513	50.20	270.0	1.645	49.34	218.1	1.609	49.84	237.1	1.533	49.76
25	229.7	1.517	49.72	224.2	1.621	48.54	230.6	1.529	48.34	245.8	1.564	48.39
26	222.2	1.574	48.03	255.8	1.630	49.28	219.7	1.497	50.56	250.8	1.506	50.62
27	216.2	1.541	50.66	251.7	1.507	49.03	235.2	1.572	50.09	223.5	1.604	48.15
28	270.3	1.550	50.79	254.0	1.582	48.39	220.0	1.644	50.56	240.1	1.608	49.19
29	244.6	1.625	48.99	271.4	1.521	49.20	230.0	1.650	50.54	225.3	1.624	48.22

SeCoS Corporation

Pressure Cooker Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2017.10.05 ~ 2017.10.13
Test Standard : JESD22 STANDARD Method-A102
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
30	218.5	1.569	48.39	215.3	1.560	48.61	266.3	1.579	50.40	239.4	1.546	48.89
31	257.8	1.638	48.38	234.6	1.547	50.67	236.9	1.605	50.00	245.9	1.628	48.49
32	213.6	1.519	48.53	254.7	1.510	48.65	245.6	1.626	48.94	250.2	1.578	48.91
33	222.1	1.520	49.33	216.5	1.647	48.64	266.3	1.526	48.26	266.1	1.556	48.49
34	270.6	1.566	48.55	235.0	1.588	49.03	270.1	1.633	48.03	215.6	1.526	49.63
35	250.2	1.517	50.01	236.4	1.633	48.46	240.3	1.621	48.75	225.0	1.539	50.48
36	256.5	1.526	49.24	248.4	1.640	50.90	222.5	1.518	50.15	244.8	1.527	48.07
37	222.5	1.646	49.75	255.3	1.542	48.66	259.0	1.545	50.80	228.4	1.617	49.73
38	265.5	1.531	48.41	270.3	1.523	48.23	230.4	1.533	50.46	258.8	1.638	49.63
39	227.6	1.538	48.50	271.1	1.597	48.19	223.3	1.576	49.57	264.0	1.597	48.42
40	250.7	1.556	48.61	257.3	1.562	48.26	222.8	1.525	50.06	245.1	1.502	48.20
41	245.4	1.548	49.00	248.3	1.593	48.34	264.0	1.620	49.06	255.3	1.502	50.40
42	237.0	1.632	50.40	252.2	1.581	48.93	253.3	1.575	48.44	239.3	1.533	50.29
43	261.0	1.593	49.60	227.6	1.646	48.95	230.8	1.525	48.23	263.6	1.586	49.40
44	232.3	1.646	49.62	229.8	1.521	50.70	247.7	1.641	50.81	247.1	1.602	49.89
45	250.3	1.620	49.27	223.8	1.499	49.93	238.1	1.602	48.30	231.9	1.637	50.51
46	230.2	1.536	50.14	221.2	1.535	49.81	240.0	1.541	49.52	263.0	1.645	50.08
47	236.9	1.585	48.07	255.3	1.602	49.48	227.3	1.551	49.66	230.7	1.626	48.50
48	237.9	1.577	48.85	240.3	1.590	50.86	236.7	1.607	49.71	249.9	1.601	49.86
49	226.0	1.509	49.89	266.8	1.502	48.83	241.8	1.564	50.86	244.1	1.508	50.44
50	249.3	1.635	50.30	250.9	1.638	48.97	235.2	1.501	50.46	235.3	1.612	49.83
51	249.3	1.545	49.92	214.6	1.574	48.66	253.8	1.503	49.97	221.7	1.627	49.74
52	261.1	1.601	49.13	234.6	1.534	48.48	245.9	1.580	48.19	217.7	1.595	48.55
53	266.3	1.596	50.51	268.7	1.619	50.47	268.5	1.534	49.32	229.1	1.577	50.47
54	271.5	1.541	48.61	268.0	1.579	48.31	216.9	1.506	50.44	223.4	1.549	48.95
55	231.3	1.514	49.36	253.9	1.500	50.88	227.8	1.500	48.74	225.3	1.499	48.40
56	255.0	1.629	50.07	248.7	1.509	48.83	269.7	1.533	49.45	237.2	1.624	49.74
57	232.4	1.553	49.97	255.2	1.649	50.42	239.7	1.497	48.72	229.0	1.512	50.88
58	242.8	1.552	48.53	230.3	1.528	50.33	259.6	1.596	50.56	221.9	1.521	49.62

SeCoS Corporation

Pressure Cooker Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2017.10.05 ~ 2017.10.13
Test Standard : JESD22 STANDARD Method-A102
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
59	257.3	1.609	49.23	230.5	1.647	48.85	235.5	1.630	48.56	228.2	1.638	48.39
60	213.9	1.603	50.90	257.6	1.590	48.24	233.7	1.554	48.57	266.7	1.599	48.69
61	269.8	1.611	48.27	234.8	1.516	50.49	266.6	1.635	48.58	271.6	1.620	48.51
62	219.1	1.647	50.54	238.9	1.603	50.89	251.9	1.600	48.82	236.2	1.558	48.08
63	262.3	1.578	48.66	234.1	1.633	49.91	221.5	1.565	49.45	251.7	1.631	50.64
64	233.2	1.604	49.78	224.5	1.561	49.83	217.4	1.567	49.25	246.0	1.518	48.10
65	266.6	1.636	50.48	247.8	1.604	49.60	221.8	1.602	49.52	224.9	1.640	49.13
66	252.5	1.574	49.56	267.7	1.504	49.17	253.4	1.556	48.73	259.9	1.579	48.87
67	224.6	1.563	49.43	226.8	1.619	50.15	271.6	1.575	48.71	215.0	1.549	48.30
68	264.1	1.513	50.10	255.0	1.648	50.38	229.6	1.520	48.54	269.1	1.629	49.07
69	253.5	1.515	48.00	264.1	1.572	48.71	233.4	1.549	49.93	249.4	1.650	48.24
70	234.7	1.539	50.07	216.0	1.590	49.62	213.5	1.565	48.30	240.3	1.595	49.94
71	227.2	1.574	48.23	250.4	1.528	49.89	263.9	1.535	48.44	267.5	1.512	49.49
72	241.8	1.642	50.85	246.1	1.520	50.43	268.3	1.601	50.44	262.7	1.500	48.19
73	232.9	1.630	50.20	242.6	1.525	49.49	219.8	1.504	48.43	225.4	1.507	49.65
74	239.3	1.517	48.28	217.1	1.536	48.01	233.4	1.598	48.95	255.9	1.628	48.02
75	254.5	1.504	49.98	215.0	1.579	48.69	234.0	1.614	48.50	251.8	1.555	49.71
76	256.3	1.619	49.32	253.0	1.557	50.52	219.5	1.616	50.15	251.5	1.544	48.93
77	231.1	1.535	50.78	227.2	1.579	48.68	271.7	1.522	50.85	251.9	1.526	50.89

Made By: King Huang Approval: Peter Yang

SeCoS Corporation

Temperature Cycle Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle

Test Date: 2017.10.06 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A104

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
1	232.6	1.516	48.82	265.4	1.531	49.03	225.3	1.614	49.06	227.0	1.617	49.40
2	271.6	1.622	48.82	268.5	1.628	49.24	251.3	1.534	50.29	253.5	1.525	49.11
3	252.1	1.542	49.16	263.5	1.588	48.88	221.9	1.557	50.32	268.2	1.565	48.68
4	218.0	1.636	48.46	243.5	1.543	50.39	260.3	1.504	50.04	221.0	1.561	50.27
5	252.3	1.641	48.10	246.1	1.596	50.48	232.7	1.600	50.59	236.6	1.541	50.55
6	260.6	1.567	50.10	251.1	1.543	48.94	241.2	1.594	48.59	247.9	1.510	50.78
7	230.5	1.588	48.20	237.7	1.564	48.25	219.5	1.543	49.41	233.4	1.606	50.21
8	252.8	1.548	48.62	264.7	1.608	49.69	262.8	1.525	48.90	261.3	1.603	48.75
9	228.5	1.622	50.05	265.4	1.640	48.41	251.8	1.635	49.60	260.1	1.532	48.01
10	228.6	1.645	49.16	250.0	1.607	50.13	258.2	1.588	50.48	216.0	1.552	48.87
11	244.7	1.552	49.26	263.1	1.548	49.61	216.5	1.591	50.17	236.3	1.561	48.29
12	266.0	1.574	48.16	213.2	1.582	50.12	263.5	1.626	50.35	248.4	1.534	50.52
13	250.8	1.542	48.07	249.1	1.638	50.81	262.9	1.587	48.06	246.7	1.510	50.06
14	217.5	1.644	48.58	259.5	1.578	48.92	226.3	1.637	50.88	271.7	1.549	49.97
15	248.2	1.575	48.81	231.6	1.606	48.58	222.7	1.599	48.21	265.1	1.638	49.70
16	239.9	1.584	50.51	243.1	1.544	50.65	246.5	1.584	48.22	245.6	1.626	48.37
17	240.0	1.549	48.88	251.0	1.510	50.68	241.8	1.521	48.21	237.4	1.519	48.94
18	255.8	1.625	50.30	221.7	1.499	49.21	219.2	1.524	48.64	248.4	1.514	48.90
19	220.0	1.525	50.71	216.9	1.537	48.60	258.2	1.590	49.16	234.3	1.647	50.15
20	238.9	1.543	48.36	260.0	1.553	49.47	263.1	1.625	48.94	218.6	1.576	49.83
21	232.7	1.606	49.03	231.0	1.626	50.71	238.4	1.591	50.81	242.4	1.571	48.12
22	220.3	1.607	49.82	222.2	1.498	50.18	263.7	1.589	49.86	247.3	1.580	50.38
23	220.0	1.641	49.44	263.1	1.505	49.52	245.2	1.617	50.65	236.1	1.591	49.73
24	222.5	1.644	49.82	222.1	1.575	50.44	233.7	1.541	49.71	232.6	1.609	48.58
25	243.8	1.591	49.50	213.9	1.591	50.76	232.8	1.614	48.03	231.2	1.500	48.44
26	229.0	1.605	50.15	242.8	1.530	49.82	264.3	1.567	50.57	233.3	1.589	50.65
27	246.2	1.560	49.88	238.9	1.503	50.74	252.4	1.522	50.04	239.2	1.619	49.36
28	249.5	1.526	49.42	252.4	1.632	49.69	228.6	1.576	50.80	227.9	1.581	48.44
29	253.5	1.567	48.59	236.0	1.605	50.02	215.7	1.559	48.87	244.5	1.527	49.68

SeCoS Corporation

Temperature Cycle Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle

Test Date: 2017.10.06 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A104

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
30	222.0	1.644	48.87	224.2	1.648	48.05	253.7	1.598	49.67	242.0	1.570	48.98
31	260.2	1.520	49.48	269.5	1.612	48.02	233.6	1.643	49.11	263.5	1.648	49.51
32	249.3	1.583	49.06	231.4	1.590	48.29	266.5	1.612	48.24	271.3	1.512	48.26
33	263.6	1.580	48.83	249.3	1.500	48.35	263.0	1.616	48.15	271.1	1.562	48.56
34	238.5	1.600	49.74	268.1	1.618	50.43	216.4	1.528	49.62	223.1	1.550	48.01
35	264.3	1.597	50.35	227.5	1.579	49.33	266.0	1.537	48.10	251.9	1.504	48.14
36	227.5	1.572	50.52	246.8	1.609	49.73	230.1	1.553	50.81	266.7	1.618	49.35
37	230.4	1.583	49.23	232.9	1.542	48.88	220.5	1.541	50.27	242.0	1.596	48.02
38	268.1	1.519	49.99	266.7	1.648	49.81	230.9	1.596	49.34	248.9	1.571	48.68
39	247.0	1.502	48.65	265.1	1.635	49.51	266.2	1.607	49.84	250.2	1.535	49.66
40	247.4	1.538	49.96	254.0	1.625	48.99	251.8	1.524	48.89	221.2	1.529	49.36
41	225.2	1.606	48.56	260.9	1.502	48.68	222.4	1.591	49.03	256.7	1.537	48.37
42	219.4	1.529	48.74	269.5	1.642	50.76	215.6	1.522	48.80	222.9	1.518	49.98
43	217.2	1.541	48.66	267.0	1.618	48.11	266.0	1.583	48.60	218.0	1.498	48.30
44	247.2	1.597	49.13	221.1	1.553	50.51	248.8	1.638	49.59	246.1	1.515	50.67
45	257.4	1.593	48.05	270.1	1.636	48.96	247.0	1.574	50.23	231.7	1.527	49.67
46	216.8	1.648	49.31	236.5	1.619	48.42	245.4	1.610	49.29	251.5	1.563	49.62
47	267.9	1.497	48.06	261.6	1.635	49.89	220.4	1.592	49.21	220.3	1.550	50.32
48	271.7	1.528	50.73	224.2	1.547	48.57	269.8	1.529	50.63	224.8	1.517	49.95
49	269.8	1.584	50.46	231.2	1.589	48.20	265.2	1.633	48.17	232.5	1.556	49.68
50	221.3	1.640	48.14	223.2	1.597	50.08	218.5	1.552	49.96	239.6	1.601	49.25
51	268.2	1.525	50.14	250.6	1.511	49.67	231.1	1.571	48.49	257.0	1.607	49.08
52	258.7	1.618	48.54	266.6	1.649	50.33	233.0	1.570	49.22	236.3	1.590	49.47
53	264.2	1.649	49.18	231.9	1.576	48.28	230.3	1.535	50.00	245.1	1.524	49.16
54	254.7	1.531	49.31	232.0	1.640	50.77	242.8	1.504	48.80	227.9	1.551	49.25
55	251.0	1.637	50.12	219.3	1.579	49.23	244.3	1.512	48.11	232.4	1.645	50.48
56	254.2	1.650	50.12	235.8	1.552	49.97	218.3	1.594	49.12	247.8	1.556	49.44
57	259.1	1.564	50.17	251.4	1.515	48.82	233.4	1.502	49.64	251.6	1.589	49.94
58	251.8	1.644	49.28	270.6	1.542	48.64	221.4	1.549	50.80	226.7	1.609	50.50

SeCoS Corporation

Temperature Cycle Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle

Test Date: 2017.10.06 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A104

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
59	219.3	1.568	50.19	248.1	1.564	50.83	237.6	1.599	49.57	217.6	1.613	49.26
60	269.3	1.606	48.02	232.7	1.554	48.41	226.4	1.568	49.63	223.8	1.563	48.71
61	270.3	1.597	49.81	224.0	1.523	48.10	246.8	1.608	49.04	256.4	1.550	49.11
62	229.0	1.624	49.44	222.4	1.558	50.15	214.2	1.523	50.70	226.8	1.574	48.48
63	216.5	1.645	49.90	225.9	1.533	50.54	223.1	1.543	48.15	264.1	1.593	48.62
64	250.4	1.511	49.51	234.3	1.544	50.91	261.8	1.603	50.44	239.7	1.607	49.94
65	261.1	1.518	48.72	214.6	1.502	49.67	265.1	1.637	50.80	252.7	1.576	49.71
66	248.3	1.502	50.84	233.2	1.547	48.39	223.3	1.500	48.86	220.1	1.510	49.84
67	221.7	1.619	48.82	217.1	1.527	48.80	248.1	1.514	49.41	238.9	1.508	48.12
68	268.5	1.553	49.09	249.3	1.615	50.70	219.7	1.576	48.32	216.8	1.623	48.03
69	252.6	1.521	48.32	264.6	1.601	49.93	243.0	1.589	50.88	268.4	1.590	50.03
70	216.6	1.627	50.77	217.1	1.505	50.91	215.0	1.572	49.09	218.9	1.587	50.69
71	241.8	1.607	49.66	267.8	1.549	50.72	227.8	1.503	49.44	239.9	1.590	48.74
72	216.0	1.646	50.34	221.7	1.518	48.46	225.2	1.504	49.37	248.4	1.591	48.32
73	259.6	1.570	49.37	271.1	1.598	49.87	216.2	1.634	48.31	238.2	1.599	50.52
74	224.9	1.553	48.61	260.5	1.546	50.65	257.5	1.524	49.00	256.7	1.520	49.97
75	241.2	1.591	48.40	240.8	1.524	50.26	262.6	1.571	49.80	221.1	1.557	50.51
76	266.2	1.589	50.41	266.7	1.511	48.87	237.5	1.500	50.10	220.4	1.537	48.24
77	251.2	1.524	49.19	236.5	1.542	49.93	245.1	1.613	48.02	214.0	1.591	48.22

Made By: King Huang

Approval: Peter Yang

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: 85±2℃, 85±5%RH, 1000Hrs

Test Date: 2017.10.16 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
1	241.3	1.520	50.63	255.8	1.548	48.82	235.6	1.633	50.09	257.4	1.535	50.48
2	257.0	1.538	48.48	248.0	1.545	50.66	215.1	1.569	48.06	218.1	1.648	49.66
3	247.6	1.577	48.42	260.2	1.596	49.11	242.9	1.512	48.46	259.5	1.501	49.93
4	213.7	1.643	48.55	239.1	1.566	48.28	235.1	1.536	50.24	242.7	1.639	49.90
5	216.5	1.502	49.40	236.6	1.648	50.19	258.6	1.564	50.39	213.5	1.560	49.21
6	229.5	1.597	48.51	246.7	1.581	48.45	220.4	1.536	50.71	263.3	1.497	48.21
7	267.8	1.498	50.60	244.5	1.519	50.34	268.4	1.614	48.12	250.3	1.535	50.07
8	259.0	1.517	50.70	238.2	1.518	48.44	252.6	1.619	49.94	238.6	1.650	49.66
9	263.0	1.604	49.35	232.5	1.594	49.45	266.3	1.529	48.55	246.5	1.565	49.46
10	268.8	1.620	48.75	215.9	1.601	49.05	263.6	1.500	50.11	261.0	1.524	49.83
11	232.3	1.538	48.82	231.3	1.524	49.17	269.7	1.620	50.47	236.4	1.607	49.26
12	237.0	1.648	49.93	271.2	1.501	48.53	245.1	1.517	48.92	227.1	1.565	48.51
13	259.9	1.526	48.88	247.9	1.501	50.63	230.9	1.562	50.11	267.6	1.568	50.68
14	215.7	1.647	48.38	218.4	1.570	49.97	237.9	1.608	48.55	252.3	1.544	48.22
15	231.3	1.630	48.56	266.8	1.536	48.04	229.3	1.552	49.23	232.6	1.621	48.26
16	267.0	1.507	48.69	242.8	1.584	49.33	237.1	1.543	48.85	225.4	1.625	48.48
17	216.4	1.583	48.80	214.8	1.506	50.09	238.5	1.640	48.33	266.7	1.529	48.13
18	230.1	1.617	49.20	221.4	1.641	48.17	231.0	1.605	48.70	261.0	1.599	49.11
19	245.1	1.597	50.80	250.7	1.516	48.17	254.1	1.527	48.90	239.3	1.509	50.39
20	245.3	1.608	49.36	214.1	1.581	48.86	270.0	1.530	49.63	252.6	1.530	50.01
21	253.1	1.537	49.70	251.7	1.642	48.28	241.5	1.614	49.08	252.0	1.501	49.54
22	220.2	1.615	49.32	214.6	1.561	49.49	261.5	1.539	49.96	222.6	1.640	48.89
23	258.3	1.534	49.11	214.0	1.594	48.94	246.0	1.625	49.10	247.9	1.606	48.54
24	225.3	1.601	50.26	214.2	1.507	50.11	216.8	1.531	49.06	248.9	1.619	49.05
25	222.4	1.570	49.29	271.4	1.609	50.14	223.6	1.518	48.55	266.8	1.528	49.57
26	229.2	1.547	50.38	266.8	1.526	49.64	250.4	1.603	50.47	251.5	1.542	49.07
27	257.1	1.649	49.51	245.6	1.520	49.98	229.1	1.579	48.85	254.2	1.633	50.89
28	259.9	1.574	50.78	226.0	1.580	48.58	214.2	1.544	50.58	227.6	1.598	50.68
29	235.8	1.520	49.72	220.8	1.622	49.23	255.3	1.620	48.21	246.9	1.506	48.36

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: 85±2℃, 85±5%RH, 1000Hrs

Test Date: 2017.10.16 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
30	216.3	1.643	49.03	231.2	1.615	50.80	224.6	1.617	48.86	263.1	1.579	48.30
31	215.0	1.561	48.61	245.8	1.568	49.65	259.1	1.541	48.40	216.8	1.595	49.39
32	263.7	1.510	50.44	216.5	1.566	49.48	256.7	1.617	49.55	214.3	1.649	50.39
33	261.6	1.620	50.51	260.8	1.596	50.27	238.3	1.639	50.27	219.9	1.529	50.26
34	234.5	1.545	50.79	221.0	1.497	48.25	244.5	1.612	50.78	247.9	1.602	50.47
35	236.4	1.624	49.67	271.5	1.589	48.33	222.2	1.520	48.73	224.5	1.593	50.06
36	221.3	1.517	48.43	230.4	1.547	50.26	231.7	1.532	49.26	218.2	1.529	49.63
37	226.8	1.608	49.01	262.7	1.534	50.20	262.5	1.502	49.36	219.3	1.637	48.19
38	258.7	1.593	48.10	256.9	1.578	48.21	226.0	1.499	50.51	262.6	1.610	48.61
39	244.1	1.575	49.23	267.5	1.533	50.06	263.0	1.601	48.68	260.5	1.558	49.89
40	217.9	1.607	50.55	222.2	1.548	48.08	244.9	1.500	48.39	217.8	1.613	49.50
41	220.7	1.573	50.53	218.3	1.527	50.16	218.3	1.521	48.45	270.2	1.608	49.06
42	236.7	1.581	49.73	252.9	1.634	50.18	218.9	1.608	48.43	256.8	1.499	49.06
43	237.1	1.625	50.38	240.4	1.520	49.15	255.5	1.571	48.02	216.1	1.589	48.13
44	249.7	1.549	49.83	229.1	1.618	48.34	247.1	1.548	49.74	243.1	1.508	49.50
45	230.6	1.630	50.45	245.5	1.514	48.21	240.7	1.635	50.76	235.0	1.595	48.11
46	228.5	1.516	49.35	243.7	1.574	48.17	230.3	1.546	48.75	226.3	1.636	50.81
47	240.2	1.621	48.82	238.2	1.577	48.85	265.8	1.542	49.10	259.7	1.532	49.08
48	259.4	1.604	50.82	224.1	1.633	48.80	221.5	1.619	49.98	219.3	1.607	49.38
49	235.8	1.541	48.58	242.4	1.546	49.22	259.6	1.607	50.77	254.9	1.520	50.61
50	254.8	1.607	48.09	219.1	1.634	50.87	216.6	1.553	50.57	222.9	1.513	49.55
51	250.1	1.603	48.04	264.9	1.633	49.83	262.4	1.568	49.00	228.2	1.606	49.22
52	234.8	1.506	50.04	256.3	1.569	50.69	249.0	1.513	50.35	228.3	1.546	49.66
53	214.8	1.501	50.60	220.0	1.551	48.21	225.8	1.547	48.44	251.2	1.605	49.06
54	240.1	1.635	49.31	250.3	1.641	49.50	251.1	1.626	48.17	215.4	1.556	49.72
55	260.7	1.501	48.91	267.7	1.580	50.45	238.4	1.569	48.44	264.5	1.504	50.34
56	234.2	1.562	48.53	262.7	1.570	50.20	244.7	1.599	50.22	245.1	1.605	48.90
57	248.5	1.504	50.73	271.7	1.516	49.10	226.5	1.553	50.64	226.5	1.593	48.12
58	248.0	1.534	49.07	261.0	1.591	48.11	240.1	1.541	49.13	243.8	1.633	48.33

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: 85±2℃, 85±5%RH, 1000Hrs

Test Date: 2017.10.16 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
59	234.5	1.630	48.29	224.8	1.563	48.65	246.1	1.627	50.46	239.2	1.579	49.05
60	220.5	1.579	49.76	233.9	1.547	50.07	254.5	1.615	50.15	222.8	1.629	50.88
61	270.8	1.548	49.53	259.0	1.595	49.11	216.7	1.600	49.25	234.0	1.609	49.13
62	220.5	1.644	48.23	234.8	1.590	48.39	238.2	1.607	49.95	251.3	1.566	48.55
63	247.3	1.551	48.64	249.9	1.634	49.39	267.4	1.563	49.83	228.5	1.553	49.90
64	215.8	1.612	50.66	244.0	1.500	50.25	233.1	1.600	48.15	232.1	1.645	48.28
65	214.2	1.591	48.33	232.0	1.628	49.93	239.2	1.579	49.90	218.7	1.624	48.50
66	233.6	1.553	50.11	267.5	1.549	50.60	248.3	1.537	48.30	270.0	1.573	49.56
67	250.1	1.546	50.14	235.0	1.514	50.60	233.8	1.543	50.29	227.9	1.577	48.01
68	253.4	1.564	49.88	229.5	1.529	49.27	225.7	1.589	49.05	234.2	1.638	48.33
69	252.5	1.512	48.51	261.5	1.597	49.00	262.7	1.596	49.46	246.2	1.583	48.08
70	230.1	1.649	48.55	243.5	1.525	48.57	252.0	1.557	50.28	230.3	1.646	48.20
71	236.3	1.554	49.75	225.6	1.507	50.52	222.3	1.511	50.88	268.1	1.606	50.16
72	267.4	1.519	49.09	224.4	1.630	50.09	230.5	1.538	48.55	222.3	1.581	49.45
73	227.9	1.530	50.81	256.0	1.569	50.04	249.8	1.625	50.01	230.7	1.612	48.09
74	240.0	1.521	50.33	240.1	1.506	49.92	229.5	1.602	49.80	221.4	1.532	49.11
75	270.0	1.558	48.05	251.9	1.550	48.22	225.4	1.562	48.43	258.3	1.554	48.11
76	251.8	1.632	49.81	243.3	1.523	50.82	250.5	1.635	48.22	240.7	1.539	48.65
77	217.4	1.537	49.48	267.9	1.625	50.67	271.1	1.617	48.81	232.0	1.636	50.77

Made By: King Huang

Approval: Peter Yang

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: 85±2℃, 85±5%RH, 80%VDS, 1000Hrs

Test Date: 2017.10.16 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
1	262.0	1.572	48.94	236.6	1.630	49.01	263.6	1.564	50.39	247.8	1.594	49.58
2	242.4	1.544	49.77	258.1	1.626	50.08	231.5	1.555	50.02	215.6	1.642	49.99
3	221.0	1.598	50.57	224.3	1.557	49.88	226.1	1.535	50.30	260.1	1.581	49.37
4	258.4	1.647	48.64	268.5	1.592	50.90	248.7	1.522	49.73	216.7	1.565	48.93
5	256.3	1.503	49.86	241.1	1.498	48.23	243.7	1.593	48.64	256.0	1.588	49.04
6	262.4	1.567	50.29	238.2	1.628	48.17	248.6	1.509	50.20	264.2	1.565	48.13
7	237.9	1.530	49.61	269.8	1.647	49.94	260.4	1.595	49.61	262.6	1.609	48.01
8	218.3	1.560	48.46	246.8	1.597	50.31	251.8	1.513	50.66	214.8	1.557	48.77
9	245.7	1.634	48.01	243.7	1.567	48.20	251.1	1.547	50.43	246.9	1.633	48.43
10	263.8	1.606	49.86	227.8	1.585	50.43	248.2	1.571	50.05	268.4	1.541	49.20
11	243.0	1.642	49.59	225.9	1.518	50.63	245.8	1.581	50.03	255.5	1.509	49.18
12	239.3	1.592	48.07	213.7	1.644	49.68	255.0	1.645	48.97	263.9	1.514	48.45
13	241.7	1.513	50.29	269.0	1.640	50.78	238.5	1.639	48.19	220.2	1.577	48.81
14	232.9	1.582	49.75	245.1	1.544	49.39	254.0	1.516	50.63	252.0	1.617	50.82
15	235.2	1.611	49.02	256.4	1.634	49.14	219.9	1.606	48.12	262.9	1.538	50.75
16	236.4	1.643	49.71	270.1	1.526	49.24	225.2	1.599	48.32	247.2	1.512	50.50
17	270.4	1.574	49.13	213.5	1.627	50.31	269.3	1.607	50.10	261.4	1.610	49.35
18	270.8	1.638	48.25	229.9	1.515	50.44	268.7	1.592	49.88	252.5	1.566	49.36
19	227.0	1.557	48.08	232.9	1.538	49.78	230.2	1.605	49.07	241.5	1.610	48.41
20	244.9	1.512	48.01	234.2	1.552	48.47	216.6	1.499	49.32	227.2	1.535	48.42
21	260.0	1.502	48.22	219.6	1.624	50.49	242.4	1.581	49.75	213.8	1.633	48.27
22	223.8	1.625	48.79	213.2	1.626	49.17	220.2	1.511	48.46	251.2	1.605	48.28
23	240.4	1.548	50.06	230.1	1.519	50.03	258.0	1.582	50.72	223.4	1.611	48.66
24	238.7	1.597	49.36	227.3	1.568	50.81	239.9	1.624	49.85	230.6	1.578	48.51
25	222.0	1.559	48.76	225.7	1.594	50.39	247.1	1.576	49.92	213.3	1.532	50.14
26	232.1	1.601	48.20	265.5	1.547	50.56	262.4	1.610	50.24	258.1	1.598	48.69
27	214.0	1.558	49.74	263.7	1.545	49.14	217.2	1.648	48.84	270.6	1.583	48.73
28	237.7	1.523	48.54	261.3	1.515	49.19	262.7	1.521	48.80	233.6	1.647	49.77
29	264.1	1.617	48.20	261.5	1.533	48.50	237.7	1.511	48.62	258.4	1.555	49.69

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: 85±2℃, 85±5%RH, 80%VDS, 1000Hrs

Test Date: 2017.10.16 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
30	258.1	1.630	48.30	215.9	1.521	48.26	245.3	1.569	48.62	250.2	1.516	50.06
31	222.2	1.524	48.85	225.8	1.544	48.29	226.8	1.613	50.12	243.1	1.616	48.11
32	217.0	1.649	49.89	240.9	1.510	49.54	216.5	1.504	50.86	256.5	1.528	48.31
33	231.0	1.570	48.23	261.6	1.626	50.07	216.3	1.523	49.47	262.4	1.536	50.73
34	223.7	1.591	50.47	248.9	1.633	49.30	222.1	1.523	48.12	250.5	1.565	50.23
35	245.9	1.537	50.22	243.5	1.605	49.41	268.3	1.545	49.03	226.9	1.561	49.52
36	249.3	1.516	48.51	266.7	1.597	49.53	259.5	1.610	48.71	259.4	1.550	49.49
37	220.2	1.547	49.62	255.7	1.527	48.91	223.4	1.519	49.23	226.1	1.550	49.22
38	215.8	1.611	49.77	269.6	1.501	48.32	261.0	1.633	49.80	253.3	1.607	48.99
39	222.0	1.613	49.94	242.4	1.531	50.57	229.9	1.517	50.27	270.8	1.569	50.11
40	218.3	1.638	48.64	230.2	1.636	49.24	219.2	1.646	50.79	269.6	1.628	48.27
41	257.8	1.602	50.56	226.6	1.620	49.40	220.4	1.641	49.59	222.1	1.505	48.33
42	215.7	1.595	48.01	214.3	1.629	48.36	228.7	1.535	49.81	265.9	1.640	48.83
43	262.1	1.533	49.33	218.9	1.580	50.26	218.2	1.540	50.32	213.7	1.503	50.67
44	257.8	1.637	48.04	250.9	1.605	49.85	257.9	1.631	48.58	222.9	1.582	50.10
45	240.3	1.614	50.69	244.8	1.618	50.74	235.6	1.566	48.17	248.9	1.538	49.04
46	237.4	1.530	49.07	228.4	1.609	50.55	269.9	1.515	49.24	231.7	1.499	48.50
47	251.8	1.541	50.37	223.9	1.541	48.14	254.7	1.503	48.65	243.9	1.549	49.51
48	213.7	1.576	48.14	234.0	1.620	48.37	242.8	1.516	50.65	253.2	1.607	48.53
49	238.4	1.500	48.25	253.2	1.516	48.05	218.7	1.638	50.37	222.2	1.548	48.28
50	232.6	1.574	48.87	236.7	1.594	49.06	261.7	1.513	49.77	224.3	1.649	48.89
51	246.3	1.548	49.27	235.9	1.579	50.75	271.1	1.630	49.94	271.8	1.538	50.29
52	246.1	1.639	48.23	248.3	1.559	49.35	250.8	1.589	49.33	262.3	1.648	49.35
53	239.4	1.511	49.82	254.5	1.622	49.07	250.9	1.588	49.50	213.3	1.567	49.91
54	239.2	1.564	50.23	256.2	1.515	50.02	235.7	1.608	50.33	259.5	1.616	48.11
55	216.9	1.613	50.00	219.1	1.627	50.86	218.7	1.645	48.06	249.9	1.562	48.39
56	251.9	1.600	48.02	239.1	1.620	50.58	271.5	1.521	50.38	270.0	1.551	48.08
57	267.8	1.590	50.10	235.3	1.556	48.57	261.3	1.609	48.96	244.1	1.524	48.98
58	228.6	1.582	49.58	238.7	1.628	50.12	262.4	1.628	48.69	214.6	1.615	50.40

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T171130-104

Part No : SSG05N10J-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;

$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A

Test Condition: 85±2℃, 85±5%RH, 80%VDS, 1000Hrs

Test Date: 2017.10.16 ~ 2017.11.28

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
59	216.3	1.585	50.33	215.6	1.605	48.79	263.0	1.584	48.04	270.6	1.565	50.04
60	217.1	1.576	49.67	232.2	1.608	50.09	267.9	1.561	50.51	245.4	1.615	49.57
61	239.0	1.539	48.60	243.0	1.600	50.81	264.5	1.556	50.67	230.5	1.502	50.85
62	264.3	1.597	50.09	238.0	1.516	48.76	221.0	1.536	49.60	222.8	1.569	50.26
63	265.5	1.601	49.39	256.2	1.639	49.06	225.8	1.503	50.42	238.8	1.507	48.38
64	231.4	1.559	49.24	266.5	1.548	49.48	214.6	1.509	50.27	246.5	1.541	50.66
65	253.1	1.570	50.67	256.4	1.534	50.27	222.4	1.627	48.51	243.2	1.557	48.12
66	250.4	1.577	50.87	234.7	1.535	49.62	240.0	1.525	49.23	236.2	1.546	48.71
67	257.4	1.635	50.85	231.5	1.506	49.45	216.0	1.585	50.03	235.6	1.577	49.32
68	270.2	1.540	48.10	236.5	1.592	49.75	266.1	1.519	48.15	267.5	1.546	48.16
69	232.8	1.542	50.65	246.7	1.567	48.54	250.4	1.649	50.29	234.7	1.630	49.86
70	250.6	1.556	48.21	256.0	1.573	49.50	271.8	1.552	50.56	233.6	1.612	48.16
71	226.2	1.625	48.61	222.1	1.568	49.66	234.4	1.552	49.73	270.7	1.616	50.59
72	245.9	1.610	48.24	232.1	1.630	48.47	258.6	1.516	49.53	228.3	1.608	48.41
73	255.1	1.601	50.06	232.5	1.591	48.61	259.9	1.597	49.34	250.2	1.625	48.86
74	261.9	1.503	48.75	227.7	1.571	49.68	238.1	1.545	49.88	255.8	1.554	48.04
75	213.8	1.572	49.42	245.1	1.588	50.37	261.8	1.626	48.12	223.8	1.618	49.75
76	264.1	1.504	49.33	259.9	1.633	49.35	260.1	1.606	48.22	248.8	1.583	49.77
77	266.3	1.643	50.04	257.2	1.577	49.52	231.2	1.531	48.06	225.1	1.583	48.30

Made By: King Huang

Approval: Peter Yang

SeCoS Corporation

Resistance to Solder Heat Test Data

Report No : T171130-104
Part No : SSG05N10J-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : I_{DSS}<1000nA@V_{DS}=16V; 0.45V<$V_{GS(th)}$<0.85V@I_D=250μA;
$R_{DS(ON)}$<310mΩ@V_{GS}=4.5V, I_D=0.55A
Test Condition: 270℃ ± 5℃, 7Sec + 2Sec/-0Sec
Test Date: 2017.11.29
Test Standard : JESD22 STANDARD Method-B106
Operator: Leo Hsia

Test Result: PASS

No	Die1						Die2					
	Before			After			Before			After		
	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)	IDSS (nA)	$V_{GS(th)}$ (V)	$R_{DS(ON)}$ (mΩ)
1	239.5	1.628	50.13	249.8	1.635	49.54	235.1	1.561	49.96	229.2	1.608	248.6
2	239.9	1.523	50.78	271.1	1.591	49.53	255.0	1.501	49.79	270.0	1.563	248.2
3	269.8	1.632	48.21	257.6	1.589	50.19	221.9	1.540	48.65	213.4	1.545	244.3
4	231.5	1.524	50.35	218.9	1.636	50.47	248.1	1.579	48.48	222.9	1.626	225.4
5	264.8	1.604	48.36	245.0	1.511	50.86	216.2	1.614	48.25	220.2	1.581	217.7
6	252.8	1.570	48.88	270.2	1.618	48.25	265.1	1.629	48.08	251.2	1.548	230.7
7	226.2	1.556	50.87	239.1	1.643	49.46	235.8	1.511	49.87	229.0	1.507	240.9
8	268.0	1.532	48.68	234.5	1.573	49.85	264.5	1.603	49.48	229.7	1.609	218.3
9	257.2	1.575	48.45	213.3	1.509	48.32	231.4	1.570	49.15	236.5	1.566	229.4
10	269.3	1.593	50.05	236.3	1.617	48.32	254.0	1.505	50.71	253.2	1.640	219.7

Made By: King Huang Approval: Peter Yang

化學實驗室-高雄 Chemical Laboratory - Kao., SGS Taiwan Ltd.

試驗報告

號碼(No.) : KA/2017/61160 日期(Date) : 2017/06/15

Test Report

義典科技股份有限公司
E'DALE TECHNOLOGY CO., LTD.
72242 台南市佳里區六安里六安130號/江蘇省無錫市錫山區東港鎮錫港東路35號
NO. 130, LIOUAN, LIOUAN LI, JIALI DIST., TAINAN CITY, TAIWAN
NO. 35, XIGANG EAST ROAD, DONGGANG TOWN, XISHAN DIST., WUXI CITY, JIANG SU, CHINA

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)	:	EPOXY MOLDING COMPOUND
樣品型號(Style/Item No.)	:	ELER-8-SERIES
收件日期(Sample Receiving Date)	:	2017/06/13
測試期間(Testing Period)	:	2017/06/13 TO 2017/06/15
送樣廠商(Sample Submitted By)	:	義典科技股份有限公司 (E'DALE TECHNOLOGY CO., LTD.)

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測試需求(Test Requested) :

(1) 依據客户指定，參考RoHS2011/65/EU Annex II及其修訂指令(EU) 2015/863測試鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP. (As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample.)

(2) 其他測試項目請見下一頁 . (Please refer to next pages for the other item(s).)

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

結　論(Conclusion) :

(1) 根據客户所提供的樣品，其鎘、鉛、汞、六價鉻、多溴聯苯、多溴聯苯醚, DBP, BBP, DEHP, DIBP的測試結果符合RoHS指令暨(EU) 2015/863之限值要求. (Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS and amending Directive (EU) 2015/863.)

報告簽署人/Ray Chang, Ph.D./Manager -Tech
Signed for and on behalf of
SGS Taiwan Limited

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測試結果(Test Results)

測試部位(PART NAME)No.1 : 黑色 EPOXY MOLDING COMPOUND
(BLACK EPOXY MOLDING COMPOUND)

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	限值 (Limit)
鎘 / Cadmium (Cd)	mg/kg	參考IEC 62321-5:2013方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5:2013 and performed by ICP-AES.	2	n.d.	100
鉛 / Lead (Pb)	mg/kg	參考IEC 62321-5:2013方法, 以感應耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5:2013 and performed by ICP-AES.	2	n.d.	1000
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4:2013方法, 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.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	mg/kg	參考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.	1000

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NO. 35, XIGANG EAST ROAD, DONGGANG TOWN, XISHAN DIST., WUXI CITY, JIANG SU, CHINA

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	限值 (Limit)
多溴聯苯總和 / Sum of PBBs	mg/kg	參考IEC 62321-6: 2015方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321-6: 2015 and performed by GC/MS.	-	n.d.	1000
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	參考IEC 62321-6: 2015方法, 以氣相層析/質譜儀檢測. / With reference to IEC 62321-6: 2015 and performed by GC/MS.	-	n.d.	1000
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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NO. 35, XIGANG EAST ROAD, DONGGANG TOWN, XISHAN DIST., WUXI CITY, JIANG SU, CHINA

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	限值 (Limit)
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg	參考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.	1000
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg		50	n.d.	1000
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n.d.	1000
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg		50	n.d.	1000
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(2-甲氧基乙基)酯 / DMEP (Bis (2-methoxyethyl) phthalate) (CAS No.: 117-82-8)	mg/kg		50	n.d.	-
鄰苯二甲酸二正戊酯/ DNPP(Di-n-pentyl phthalate) (CAS No.: 131-18-0)	mg/kg		50	n.d.	-
鄰苯二甲酸二己酯 / DNHP (Di-n-hexyl phthalate) (CAS No.: 84-75-3)	mg/kg		50	n.d.	-

試驗報告

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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	限值 (Limit)
銻 / Antimony (Sb)	mg/kg	參考US EPA 3052方法，用感應藕合電漿原子發射光譜儀檢測銻含量. / With reference to US EPA Method 3052 for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.	-
鈹 / Beryllium (Be)	mg/kg	參考US EPA 3052方法，用感應藕合電漿原子發射光譜儀檢測鈹含量. / With reference to US EPA Method 3052 for Beryllium Content. Analysis was performed by ICP-AES.	2	n.d.	-
砷 / Arsenic (As)	mg/kg	參考US EPA 3052方法，用感應藕合電漿原子發射光譜儀檢測砷含量. / With reference to US EPA Method 3052 for Arsenic Content. Analysis was performed by ICP-AES.	2	n.d.	-
磷 / Phosphorus (P)	mg/kg	參考US EPA 3052方法，用感應藕合電漿原子發射光譜儀檢測磷含量. / With reference to US EPA Method 3052 for Phosphorus Content. Analysis was performed by ICP-AES.	10	115	-
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	參考IEC 62321: 2008方法，以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.	-
四溴雙酚-A / Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	參考RSTS-E&E-121方法，以液相層析/質譜儀分析. / With reference to RSTS-E&E-121. Analysis was performed by LC/MS.	10	n.d.	-

試驗報告

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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	限值 (Limit)
紅磷 / Red phosphorus	**	本測試以熱裂解-氣相層析/質譜儀分析. / Analysis was performed by Pyrolyzer-GC/MS.	-	Negative	-
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	-
全氟辛酸(銨) / PFOA (CAS No.: 335-67-1)	mg/kg	參考US EPA 3550C: 2007方法, 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.	-
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS)	mg/kg	參考US EPA 3550C: 2007方法, 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.	-
鹵素 / Halogen					
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 014762-94-8)	mg/kg	參考BS EN 14582:2016，以離子層析儀分析. / With reference to BS EN 14582:2016. Analysis was performed by IC.	50	n.d.	-
鹵素 (氯) / Halogen-Chlorine (Cl) (CAS No.: 022537-15-1)	mg/kg		50	104	-
鹵素 (溴) / Halogen-Bromine (Br) (CAS No.: 010097-32-2)	mg/kg		50	n.d.	-
鹵素 (碘) / Halogen-Iodine (I) (CAS No.: 014362-44-8)	mg/kg		50	n.d.	-

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測極限值 (MDL)	結果 (Result) No.1	限值 (Limit)
多環芳香烴 / Polynuclear Aromatic Hydrocarbons (PAHs)					
苊 / Acenaphthene (CAS No.: 83-32-9)	mg/kg	參考AfPS GS 2014:01 PAK方法，以氣相層析/質譜儀檢測. / With reference to AfPS GS 2014:01 PAK method. Analysis was performed by GC/MS.	0.2	n.d.	-
苊烯 / Acenaphthylene (CAS No.: 208-96-8)	mg/kg		0.2	n.d.	-
蒽 / Anthracene (CAS No.: 120-12-7)	mg/kg		0.2	n.d.	-
苯駢蒽 / Benzo[a]anthracene (CAS No.: 56-55-3)	mg/kg		0.2	n.d.	-
苯駢(a)芘 / Benzo[a]pyrene (CAS No.: 50-32-8)	mg/kg		0.2	n.d.	-
苯(b)苯駢芴 / Benzo[b]fluoranthene (CAS No.: 205-99-2)	mg/kg		0.2	n.d.	-
苯駢苝 / Benzo[g,h,i]perylene (CAS No.: 191-24-2)	mg/kg		0.2	n.d.	-
苯(k)苯駢芴 / Benzo[k]fluoranthene (CAS No.: 207-08-9)	mg/kg		0.2	n.d.	-
Chrysene (CAS No.: 218-01-9)	mg/kg		0.2	n.d.	-
二苯駢蒽 / Dibenzo[a,h]anthracene (CAS No.: 53-70-3)	mg/kg		0.2	n.d.	-
苯駢芴 / Fluoranthene (CAS No.: 206-44-0)	mg/kg		0.2	n.d.	-
芴 / Fluorene (CAS No.: 86-73-7)	mg/kg		0.2	n.d.	-
茚酮芘 / Indeno[1,2,3-c,d] pyrene (CAS No.: 193-39-5)	mg/kg		0.2	n.d.	-
萘 / Naphthalene (CAS No.: 91-20-3)	mg/kg		0.2	n.d.	-
菲 / Phenanthrene (CAS No.: 85-01-8)	mg/kg		0.2	n.d.	-
芘 / Pyrene (CAS No.: 129-00-0)	mg/kg		0.2	n.d.	-
苯(j)苯駢芴 / Benzo[j]fluoranthene (CAS No.: 205-82-3)	mg/kg		0.2	n.d.	-
苯駢(e)芘 / Benzo[e]pyrene (CAS No.: 192-97-2)	mg/kg		0.2	n.d.	-
多環芳香烴18項總和 / Sum of 18 PAHs	mg/kg		-	n.d.	-

試驗報告

Test Report

義典科技股份有限公司
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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. **= 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. 聚氯乙烯測試由SGS其他實驗室執行 (The PVC test was subcontracted to other SGS Laboratory.)
8. 紅磷定性分析測試由SGS其他實驗室執行
   (The Red Phosphorus test was subcontracted to other SGS Laboratory.)

PFOS參考資訊(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1μg/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 1μg/m^2.)

全氟辛烷磺酸指全氟辛烷磺酸和它的衍生物包括全氟辛烷磺酸, 全氟辛基磺醯胺, N-甲基全氟辛烷磺酰胺, N-乙基全氟辛烷磺酰胺, N-甲基全氟辛基磺酰基氨基乙醇, N-乙基全氟辛基磺酰基氨基乙醇。(PFOS refer to Perfluorooctanesulfonic acid and its derivatives including Perfluorooctanesulfonic acid, Perfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamide, N-Ethylperfluoroctane sulfonamide, N-Methylperfluoroctane sulfonamidoethanol and N-Ethylperfluoroctane sulfonamidoethanol.)

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德國產品安全委員會(AfPS) GS PAHs 要求 /
AfPS (German commission for Product Safety): GS PAHs requirements

項目 (Parameter)	第1類 (Category 1)	第2類 (Category 2)		第3類 (Category 3)	
	意圖放入嘴內的材料或玩具會與皮膚有所接觸(超過30秒). (Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).)	不屬於第1類的材料並可預見與皮膚接觸逾30秒(長期或經常與皮膚接觸). (Materials not falling under category 1 with foreseeable contact to skin for longer than 30 seconds (long-term skin or frequent contact).)		可預見與皮膚接觸短於30秒(短期與皮膚接觸), 以及不屬於第1類或第2類的材料. (Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 seconds (short-term skin contact).)	
		列於2009/48/EC之玩具 (Toy under 2009/48/EC)	列於德國產品安全法之其他產品 (Other products under ProdSG)	列於2009/48/EC之玩具 (Toy under 2009/48/EC)	列於德國產品安全法之其他產品 (Other products under ProdSG)
Naphthalene	< 1	< 2		< 10	
Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Benzo[a]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[b]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[j]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[k]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[a]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[e]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno[1,2,3-c,d] pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo[a,h]anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo[g,h,i]perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1
18項PAH總濃度 (Sum of 18 PAH)	< 1	< 5	< 10	< 20	< 50

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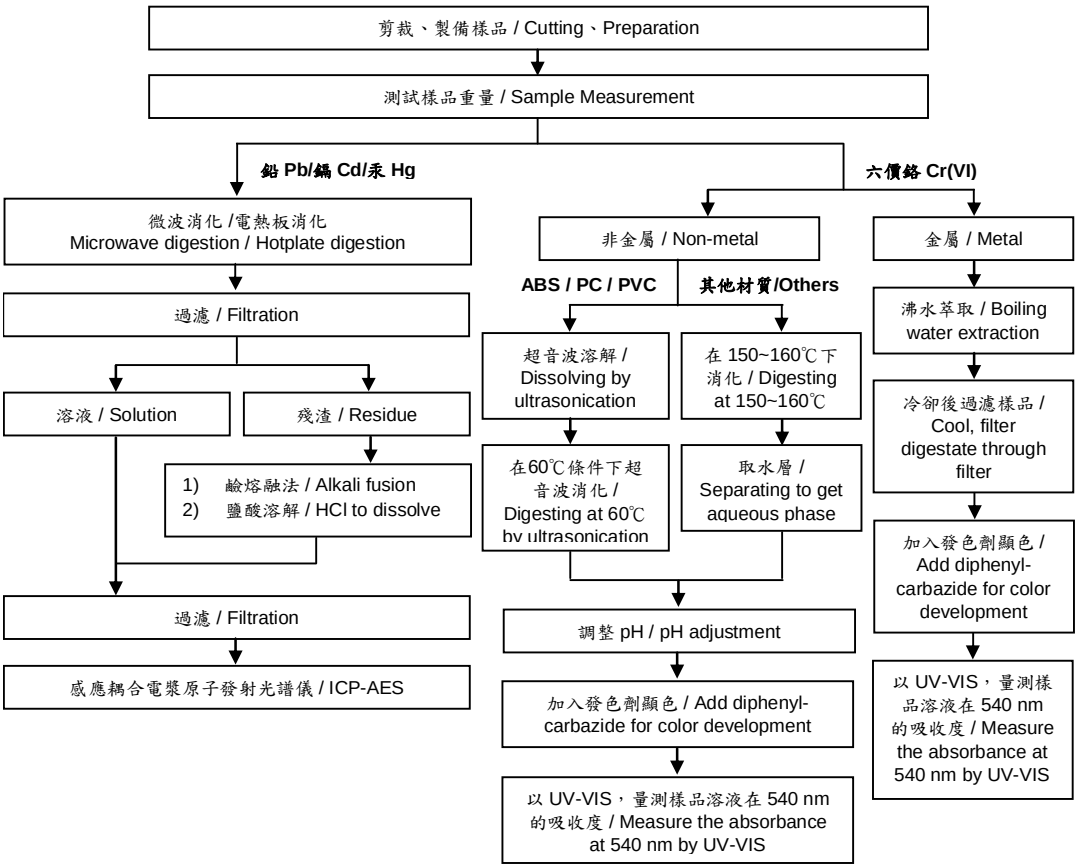
重金屬流程圖 / Analytical flow chart of Heavy Metal

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^{6+} test method excluded）

- 測試人員：劉俊宏/ Technician : Jony Liu
- 測試負責人：張伯睿/ Supervisor: Ray Chang



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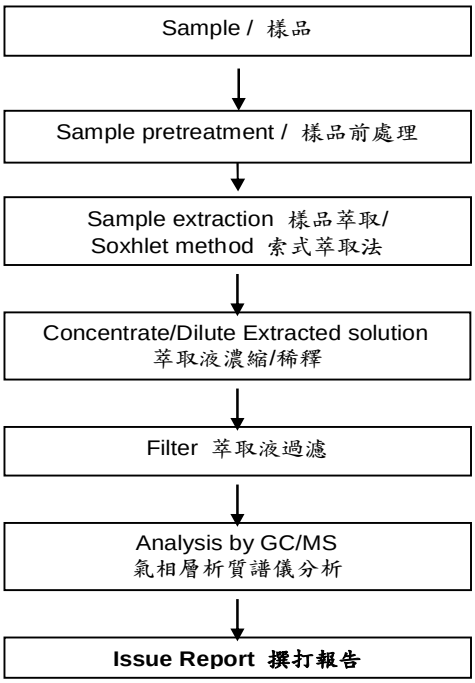
多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART

1)測試人員：陳威錚 / Name of the person who made measurement: Dorothy Chen
2)測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang



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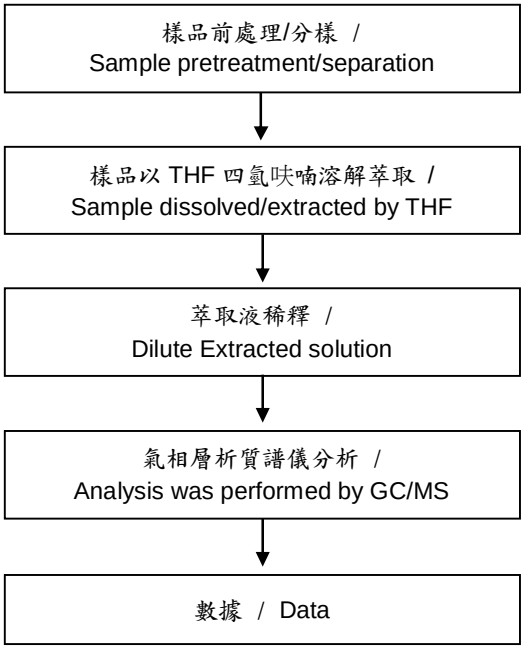
可塑劑分析流程圖 / Analytical flow chart of phthalate content

- 測試人員：陳威錚 / Name of the person who made measurement: Dorothy Chen
- 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang

【測試方法/Test method: IEC 62321-8】



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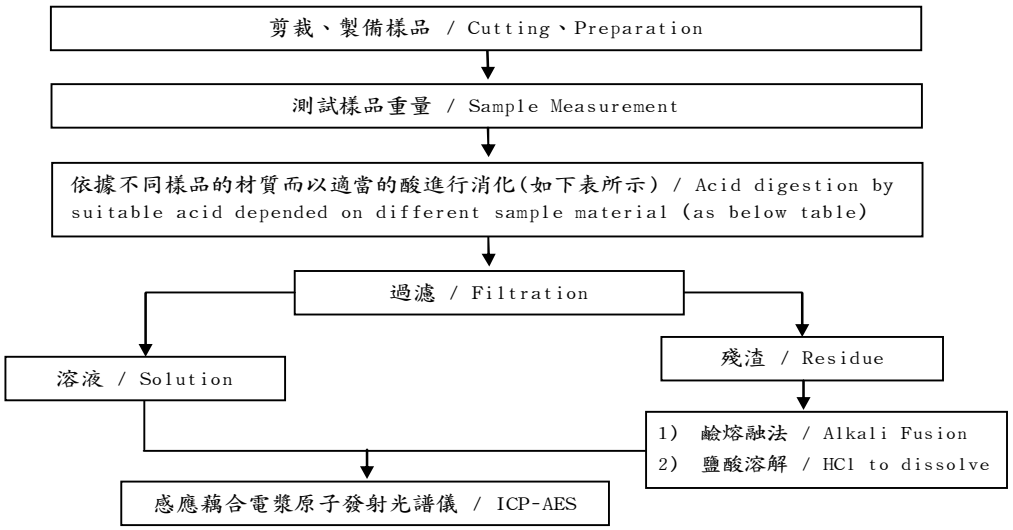
1) 根據以下的流程圖之條件，樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
2) 測試人員：劉俊宏 / Name of the person who made measurement: Jony Liu
3) 測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang

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, HNO_3, HCl, HF, H_2O_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_2SO_4, H_2O_2, HNO_3, HCl
其他 / Others	加入任何酸至完全溶解 / Any acid to total digestion

試驗報告

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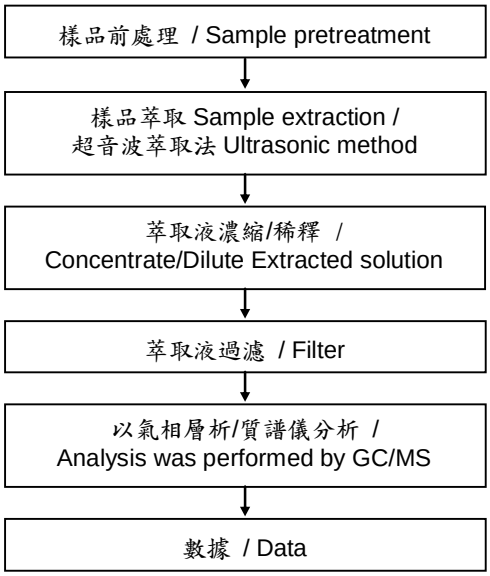
六溴環十二烷分析流程圖 / HBCDD analytical flow chart

1) 測試人員：陳威錚/ Name of the person who made measurement: Dorothy Chen
2) 測試負責人：張伯睿/ Name of the person in charge of measurement: Ray Chang



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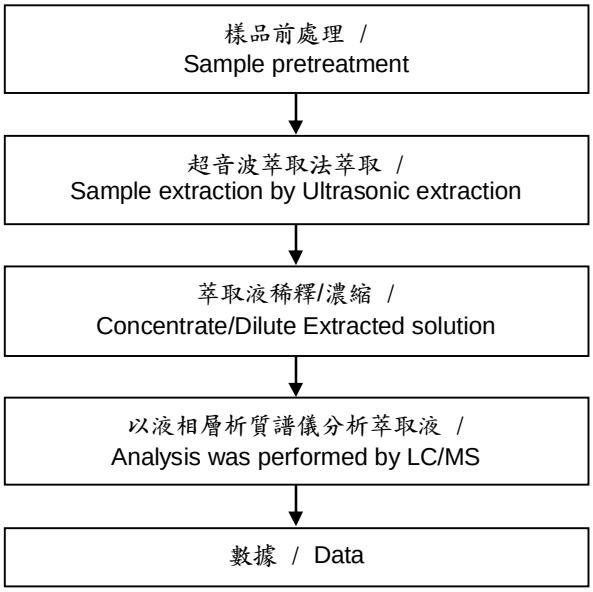
四溴雙酚-A分析流程圖 / TBBP-A analytical flow chart

- 測試人員：黃璟瓔/ Name of the person who made measurement: Ginny Huang
- 測試負責人：張伯睿/ Name of the person in charge of measurement: Ray Chang



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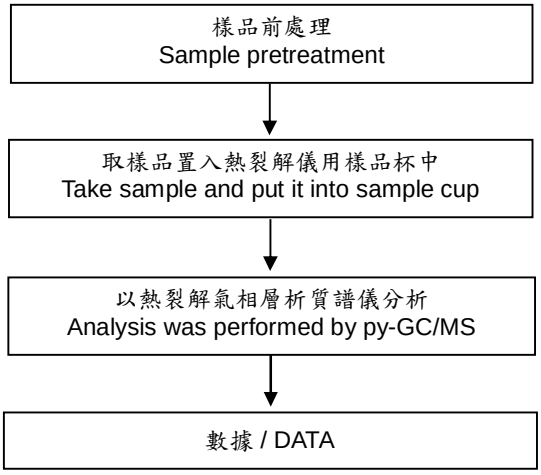
紅磷分析流程 / Analytical flow chart of Red phosphorus

- 測試人員：林建宇 / Name of the person who made measurement: Roy Lin
- 測試負責人：張啟興 / Name of the person in charge of measurement: Troy Chang



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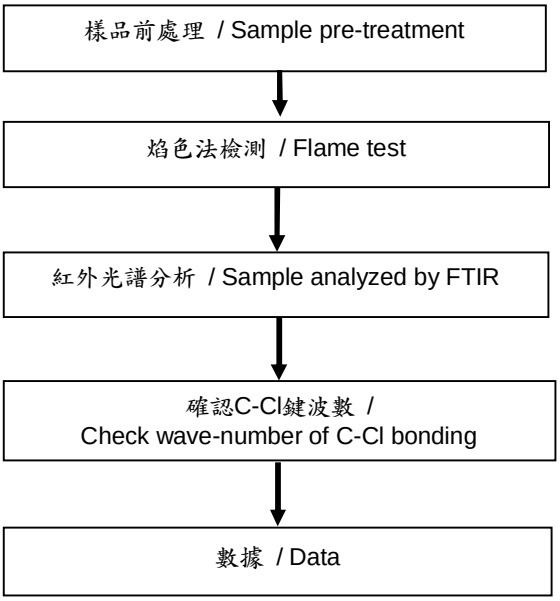
聚氯乙烯物質判定分析流程圖 /

Analysis flow chart for determination of PVC in material

1)測試人員：戴秀純 / Name of the person who made measurement: Hannah Tai
2)測試負責人：林立翔 / Name of the person in charge of measurement: Roger Lin



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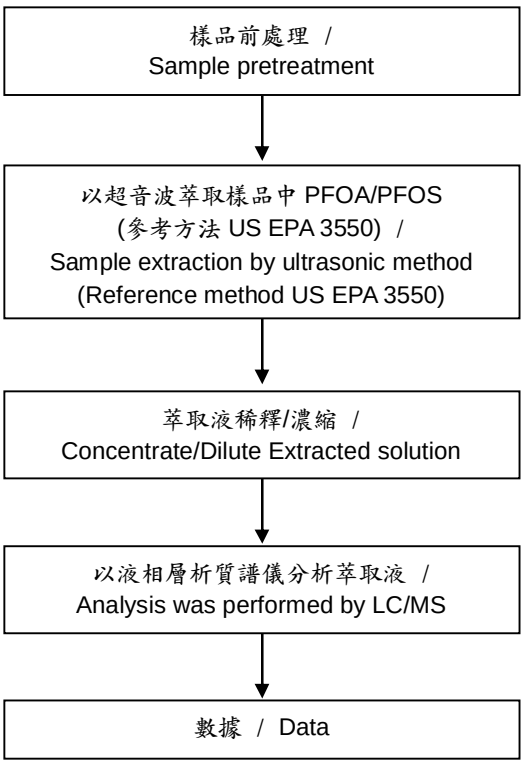
全氟辛酸(銨)/ 全氟辛烷磺酸分析流程圖 /
Analytical flow chart of PFOA/PFOS content

1)測試人員：黃璟瓔 / Name of the person who made measurement: Ginny Huang

2)測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang



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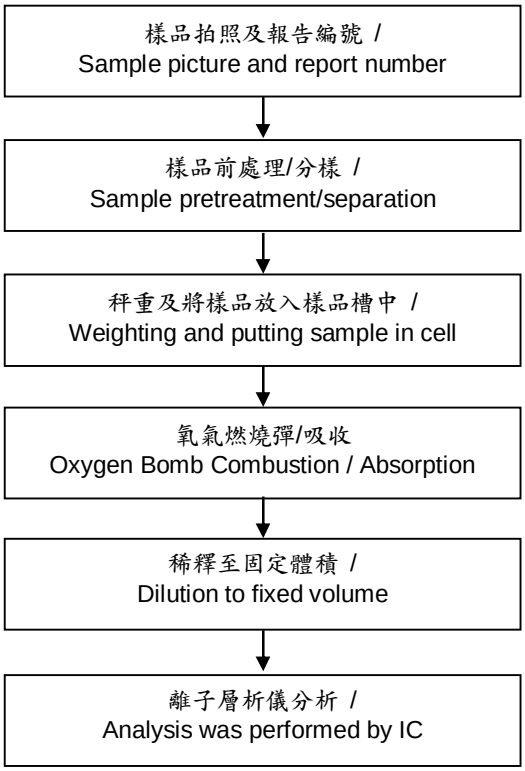
鹵素分析流程圖 / Analytical flow chart of halogen content

1) 測試人員：洪秀眞/ Name of the person who made measurement: Jean Hung
2) 測試負責人：張伯睿/ Name of the person in charge of measurement: Ray Chang



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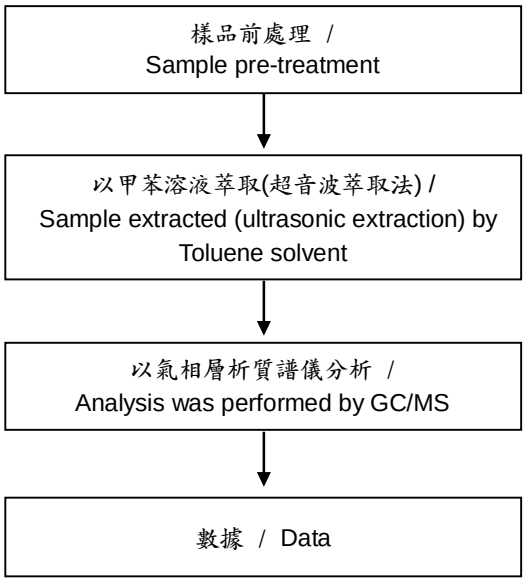
多苯環芳香族化合物分析流程圖 /
PAHs (Poly Aromatic Hydrocarbons) analytical flow chart

1)測試人員：陳威錚 / Name of the person who made measurement: Dorothy Chen

2)測試負責人：張伯睿 / Name of the person in charge of measurement: Ray Chang



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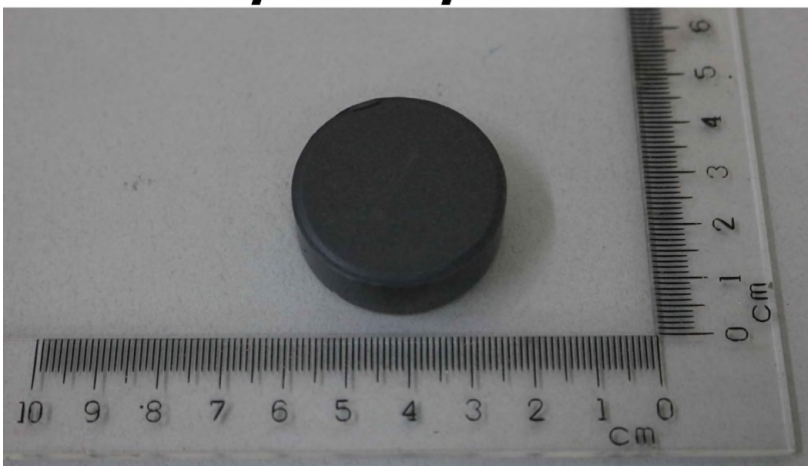
*** 照片中如有箭頭標示，則表示爲實際檢測之樣品/部位. ***
(The tested sample / part is marked by an arrow if it's shown on the photo.)

KA/2017/61160



** 報告結尾 (End of Report) **