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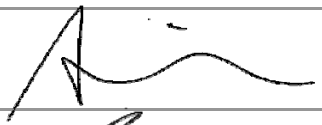
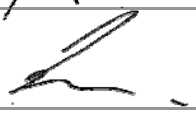
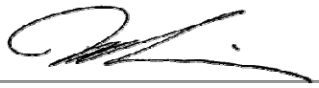
Product/Process Change Notification

PCN#	Effective Date	Issue Date
2014-08-01C-09	2015/2/1	2014/8/1
PCN Classification	Product Category	
Major	SOT-323 Package	
Subject		
Add a molding vendor		
Affected Product(s)		
As attachment		
Description of Change(s)		
In order to avoid shortage of the material, and enhance the speed of delivery, thus, we add a new vendor.		
Content of Change(s)		
Add Molding vendor--ELER-8-100HFE		
Impact(s)		
N/A		
Attachment(s)		
Reliability Teat 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

SCS372F	S2N7002W	2SA1576A
SCS401F	SSF1320N	2SA1577
SCS461F	SSF1321P	2SA1579
SCS401SDF	SSF2102	2SA1586
BAT54W	SSF318W	2SA1611
BAT54AW	SSF7400	2SB1218A
BAT54CW	SSF7401	2SC4081F
BAT54SW	SSF84W	2SC4097
SCS402SDF	SSK3018K	2SC4098
SCS705F	MMBT5551W	2SC4116
SCS715F	MMBTA42W	2SC4177
SCS717F	MMBTA56W	2SC4215
SCS421SDF	MMBTA92W	2SC4226
SCS420SDF	S9013W	2SD1819A
BAS40W	S9014W	BC807-16W
BAS40-04W	S9018W	BC807-25W
BAS40-05W	SS8050W	BC807-40W
BAS40-06W	SS8550W	BC817-16W
SCS400SDF	DTA114EUA	BC817-25W
SCS411SDF	DTA114TUA	BC817-40W
SCS706F	DTA114YUA	BC846AW
BAS70W	DTA123JUA	BC846BW
BAS70-04W	DTA123YUA	BC847AW
BAS70-05W	DTA124EUA	BC847BW
BAS70-06W	DTA143EUA	BC847CW
SCS204F	DTA143TUA	BC848AW
BAV70W	DTA143XUA	BC848BW
BAV99W	DTA143ZUA	BC848CW
BAW56W	DTA144EUA	BC856AW
MMBD4448F	DTA144TUA	BC856BW
SCS202NF	DTC113ZUA	BC857AW
SCS202PF	DTC114EUA	BC857BW
SCS217F	DTC114TUA	BC857CW
SCS179W	DTC114WUA	BC858AW
BAS16W	DTC114YUA	BC858BW
SCS370	DTC123JUA	BC858CW
BAP64-04WS	DTC123YUA	KTA2014
BAP64-05WS	DTC124EUA	MMBT2222AW
BAP64-06WS	DTC143EUA	MMBT2907AW
BZX84CxxxW Series	DTC143TUA	MMBT3904W
MMBZ52XXBW Series	DTC143XUA	MMBT3906W
AZ23CxxxW Series	DTC143ZUA	MMBT4401W
2N7002KW	DTC144EUA	MMBT4403W
S2N7002KW	DTC144TUA	MMBT5401W

SeCoS Corporation

Reliability Testing Summary Report

Date: 2014/06/30 Document No.: SH14 -06- 59

Test Item	P/N	Test Condition	(LTPD)	Sample Numbers	Allow Fall Numbers	Fall Numbers	Result
HTRB High Temp Reverse Bias	MMBT3904W	100 ± 5℃, 80%VR, T = 1000hrs		77	0	0	ACC
HTSL High Temperature Storage Life	MMBT3904W	150℃, T = 1000 hrs		77	0	0	ACC
PCT Pressure Cooker Test	MMBT3904W	121℃, 29.7PSIG, 168 hrs		77	0	0	ACC
TCT Temperature Cycle Test	MMBT3904W	-55℃/30min, 150℃/30min, For 1000 Cycle		77	0	0	ACC
THT High Temperature High Humidity Test	MMBT3904W	85 ± 2℃, RH=85±5%, 1000 hrs		77	0	0	ACC
H3TRB High Temper High Humidity Reverse Bies Test	MMBT3904W	85 ± 2℃, RH=85±5%, 1000 hrs		77	0	0	ACC
Solderability	MMBT3904W	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: 2014.05.05 Testing End Date: 2014.06.30

Tester: Leo Hsia Approval: Peter Yang

SeCoS Corporation

Electrical Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 25℃
Test Date: 2014.05.05 ~ 2014.05.05
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
1	52.54V	202.0	148.8mV
2	52.96V	199.4	138.6mV
3	52.31V	207.1	126.2mV
4	53.22V	209.6	120.4mV
5	52.45V	207.6	130.8mV
6	53.13V	209.8	139.0mV
7	53.91V	204.0	146.0mV
8	54.30V	209.7	133.2mV
9	53.00V	202.5	121.7mV
10	53.37V	198.0	154.5mV
11	54.04V	206.9	124.3mV
12	53.37V	211.5	126.5mV
13	53.92V	203.2	149.0mV
14	53.66V	209.9	119.2mV
15	53.73V	202.9	125.3mV
16	53.66V	208.3	115.8mV
17	53.29V	199.0	146.5mV
18	54.28V	199.3	126.5mV
19	52.97V	213.3	130.5mV
20	54.19V	209.0	114.3mV
21	52.80V	204.9	142.2mV
22	53.35V	212.0	116.8mV
23	53.37V	210.3	135.7mV
24	54.26V	200.8	130.8mV
25	53.10V	200.0	122.3mV
26	52.26V	206.4	130.8mV
27	54.15V	208.9	141.8mV
28	54.57V	205.9	134.6mV
29	52.39V	198.9	152.9mV
30	54.35V	206.1	150.2mV
31	54.61V	211.2	137.9mV

SeCoS Corporation

Electrical Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 25℃
Test Date: 2014.05.05 ~ 2014.05.05
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
32	52.98V	198.5	137.2mV
33	54.58V	201.6	140.2mV
34	54.01V	197.4	134.8mV
35	54.58V	203.4	148.9mV
36	54.50V	205.9	134.1mV
37	53.81V	205.2	142.1mV
38	54.36V	211.2	130.0mV
39	53.50V	207.2	128.2mV
40	53.16V	208.5	118.2mV
41	54.14V	207.8	131.6mV
42	53.99V	199.7	126.0mV
43	53.27V	198.2	141.9mV
44	52.87V	207.4	114.2mV
45	53.23V	201.4	129.8mV
46	52.47V	202.4	135.1mV
47	52.37V	199.5	117.9mV
48	53.91V	197.9	141.5mV
49	53.73V	201.7	154.4mV
50	52.68V	208.2	118.7mV
51	52.73V	210.8	153.6mV
52	52.47V	210.1	116.3mV
53	53.10V	200.0	153.3mV
54	53.71V	198.2	115.4mV
55	53.15V	203.4	153.0mV
56	53.76V	202.3	146.8mV
57	53.87V	197.3	147.9mV
58	53.96V	205.2	133.8mV
59	52.95V	198.7	143.2mV
60	52.49V	206.6	125.4mV
61	54.15V	208.7	135.4mV
62	53.87V	206.0	155.1mV

SeCoS Corporation

Electrical Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 25℃
Test Date: 2014.05.05 ~ 2014.05.05
Test Standard : Specifications
Operator: Leo Hsia

Test Result: PASS

No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
63	53.60V	210.0	145.9mV
64	54.59V	204.5	143.6mV
65	52.87V	201.8	120.9mV
66	52.80V	202.5	133.3mV
67	53.05V	211.4	130.3mV
68	53.58V	206.0	146.2mV
69	53.96V	204.7	124.2mV
70	53.80V	210.8	117.9mV
71	53.39V	203.9	130.8mV
72	53.24V	198.7	145.2mV
73	54.04V	202.5	155.5mV
74	53.30V	199.1	129.8mV
75	52.66V	204.4	116.2mV
76	54.43V	200.3	126.4mV
77	54.57V	213.3	134.1mV

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 100 ± 5℃, 80%VR, T = 1000 hrs
Test Date: 2014.05.05 ~ 2014.06.15
Test Standard : JESD22 STANDARD Method-A108
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
1	53.36V	205.3	142.5mV	53.78V	205.9	125.2mV
2	52.64V	202.6	122.9mV	52.72V	205.7	149.7mV
3	52.40V	204.0	147.8mV	53.08V	199.2	152.0mV
4	53.24V	209.0	135.6mV	52.28V	211.8	125.4mV
5	54.35V	200.0	122.0mV	53.07V	199.3	134.4mV
6	53.78V	202.6	155.0mV	54.28V	211.4	147.6mV
7	52.56V	204.0	146.0mV	52.27V	205.4	135.9mV
8	52.51V	206.1	140.3mV	53.18V	199.8	116.9mV
9	53.37V	201.1	145.6mV	53.28V	198.0	133.8mV
10	52.55V	203.4	129.2mV	53.36V	207.2	155.2mV
11	53.07V	201.8	153.3mV	54.35V	209.6	152.9mV
12	52.97V	197.2	128.3mV	52.81V	197.0	145.1mV
13	52.95V	200.8	129.0mV	52.36V	208.7	153.7mV
14	53.92V	212.3	141.7mV	52.75V	204.5	150.3mV
15	52.30V	211.5	146.5mV	52.25V	204.4	149.5mV
16	54.05V	202.5	120.3mV	53.11V	198.0	127.0mV
17	53.06V	211.0	118.9mV	52.86V	207.3	121.6mV
18	53.15V	197.5	137.6mV	52.96V	209.0	145.8mV
19	53.20V	212.1	145.0mV	53.82V	207.5	138.7mV
20	53.17V	198.5	129.8mV	53.42V	204.7	125.2mV
21	52.39V	212.4	117.7mV	52.27V	198.8	119.9mV
22	53.76V	199.8	142.0mV	52.55V	203.8	139.1mV
23	54.44V	203.5	148.6mV	53.59V	211.7	151.3mV
24	53.98V	199.3	144.6mV	54.42V	203.2	148.1mV
25	54.05V	209.0	131.6mV	52.26V	206.6	119.9mV
26	54.03V	213.3	119.2mV	53.55V	200.0	143.0mV
27	52.57V	212.6	120.3mV	52.80V	197.6	129.8mV
28	54.58V	203.8	151.0mV	54.50V	201.0	147.1mV
29	52.41V	199.1	154.5mV	54.08V	208.4	144.4mV
30	53.38V	199.1	129.4mV	52.87V	198.8	134.9mV

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 100 ± 5℃, 80%VR, T = 1000 hrs
Test Date: 2014.05.05 ~ 2014.06.15
Test Standard : JESD22 STANDARD Method-A108
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
31	53.47V	212.8	124.2mV	52.74V	202.4	119.2mV
32	53.91V	212.8	137.5mV	54.43V	198.9	152.0mV
33	52.68V	203.3	126.7mV	53.41V	207.8	120.0mV
34	54.30V	203.9	149.8mV	53.71V	202.2	115.0mV
35	54.45V	199.8	143.4mV	53.93V	204.4	144.5mV
36	54.34V	205.6	146.9mV	53.29V	211.6	136.5mV
37	54.19V	198.1	122.9mV	52.39V	210.6	155.0mV
38	52.89V	197.1	130.3mV	52.73V	199.2	150.2mV
39	52.38V	198.5	126.6mV	53.97V	205.0	124.3mV
40	53.99V	206.6	146.7mV	52.34V	212.8	123.2mV
41	54.61V	200.0	127.0mV	52.66V	204.2	133.5mV
42	53.82V	200.0	129.5mV	53.83V	199.6	149.3mV
43	53.40V	198.4	123.4mV	52.44V	205.9	121.7mV
44	53.02V	210.4	114.8mV	53.47V	206.5	135.1mV
45	52.53V	212.7	134.8mV	54.22V	196.8	120.6mV
46	53.21V	202.6	121.9mV	54.03V	206.5	140.8mV
47	52.82V	198.9	120.3mV	53.19V	203.4	128.0mV
48	53.97V	209.9	127.4mV	54.43V	204.8	122.0mV
49	54.31V	211.6	135.2mV	54.51V	201.4	138.2mV
50	52.72V	203.5	120.4mV	54.53V	197.8	127.2mV
51	52.39V	201.6	115.7mV	52.57V	208.1	116.7mV
52	52.38V	206.2	125.1mV	54.27V	205.2	151.9mV
53	53.77V	197.5	130.1mV	54.15V	198.1	145.3mV
54	52.38V	201.8	152.5mV	52.45V	198.6	140.4mV
55	52.65V	208.1	131.7mV	53.69V	209.4	120.1mV
56	53.45V	201.7	117.3mV	52.72V	203.7	121.1mV
57	53.15V	210.9	126.4mV	53.50V	201.5	114.5mV
58	52.36V	208.2	117.7mV	53.08V	209.5	126.9mV
59	53.06V	207.3	142.3mV	53.33V	203.6	118.6mV
60	52.57V	204.8	144.4mV	53.39V	210.1	144.4mV

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 100 ± 5℃, 80%VR, T = 1000 hrs
Test Date: 2014.05.05 ~ 2014.06.15
Test Standard : JESD22 STANDARD Method-A108
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
61	54.44V	207.3	131.8mV	53.44V	202.1	116.6mV
62	53.55V	208.7	141.7mV	52.47V	198.4	119.9mV
63	53.53V	204.0	147.1mV	53.88V	208.9	152.4mV
64	52.54V	209.1	122.0mV	53.68V	203.0	117.4mV
65	53.57V	198.2	122.2mV	52.79V	206.1	114.5mV
66	52.96V	212.1	117.3mV	52.35V	206.3	114.0mV
67	54.29V	207.8	143.5mV	54.28V	206.2	119.9mV
68	53.06V	212.0	133.3mV	52.41V	213.4	119.2mV
69	54.52V	199.2	150.4mV	52.95V	207.6	121.7mV
70	53.18V	202.8	154.8mV	52.79V	207.5	126.8mV
71	53.33V	205.9	141.6mV	53.75V	200.5	126.1mV
72	53.22V	212.7	122.6mV	53.48V	197.7	140.7mV
73	53.12V	202.3	139.5mV	54.02V	199.5	130.7mV
74	54.61V	197.3	121.8mV	52.85V	206.5	155.6mV
75	54.45V	205.7	119.9mV	52.29V	197.0	147.5mV
76	53.24V	203.4	125.3mV	52.31V	207.9	148.6mV
77	53.76V	205.0	138.8mV	52.95V	212.3	149.1mV

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 150℃, 1000Hrs
Test Date: 2014.05.05 ~ 2014.06.15
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
1	53.86V	205.2	127.1mV	53.73V	198.5	139.8mV
2	53.84V	199.7	126.8mV	52.42V	196.7	133.3mV
3	52.55V	202.0	113.8mV	53.85V	209.8	131.4mV
4	54.39V	201.4	144.1mV	53.77V	201.0	122.2mV
5	54.25V	199.9	126.5mV	52.78V	200.9	132.0mV
6	54.25V	207.3	153.0mV	54.04V	206.9	123.2mV
7	53.96V	211.2	152.9mV	53.28V	202.1	131.6mV
8	53.88V	206.2	127.9mV	54.45V	206.6	129.2mV
9	52.76V	209.4	129.7mV	52.33V	197.3	140.0mV
10	52.30V	211.1	119.0mV	54.49V	205.5	151.5mV
11	52.32V	205.2	126.0mV	54.27V	210.9	155.3mV
12	52.48V	210.2	132.1mV	53.06V	198.8	130.3mV
13	54.30V	211.4	135.7mV	53.84V	210.8	123.0mV
14	53.82V	200.8	119.5mV	52.94V	202.3	140.7mV
15	53.18V	200.8	120.8mV	53.32V	202.4	120.1mV
16	53.51V	205.4	132.6mV	52.60V	205.6	139.7mV
17	52.73V	204.3	116.7mV	53.55V	205.3	128.2mV
18	53.87V	203.2	129.0mV	52.28V	202.9	136.0mV
19	53.90V	197.5	132.0mV	53.27V	205.9	153.1mV
20	53.21V	199.8	135.3mV	52.54V	211.3	149.7mV
21	52.91V	211.5	133.6mV	52.44V	209.1	141.8mV
22	52.32V	206.8	146.1mV	54.09V	201.4	122.9mV
23	53.55V	203.2	150.9mV	54.23V	201.2	141.3mV
24	52.37V	203.6	132.2mV	53.63V	211.7	145.2mV
25	53.77V	198.4	115.3mV	54.36V	207.4	146.0mV
26	53.89V	197.8	136.1mV	52.64V	209.3	147.5mV
27	54.23V	211.1	123.4mV	53.39V	203.4	150.6mV
28	52.43V	210.9	138.7mV	53.90V	210.1	137.3mV
29	52.75V	201.8	118.7mV	53.09V	203.3	150.0mV
30	54.14V	200.5	150.8mV	54.05V	199.8	144.7mV

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 150℃, 1000Hrs
Test Date: 2014.05.05 ~ 2014.06.15
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
31	52.34V	203.8	144.8mV	52.42V	197.8	114.8mV
32	53.36V	198.5	139.7mV	52.87V	208.6	116.3mV
33	53.42V	206.6	138.8mV	54.04V	202.5	132.6mV
34	53.88V	200.1	128.3mV	54.29V	209.0	140.6mV
35	54.00V	212.0	121.3mV	53.11V	207.7	147.6mV
36	53.94V	211.5	140.3mV	54.10V	211.6	145.6mV
37	52.62V	205.4	129.8mV	53.19V	211.3	127.8mV
38	53.02V	198.8	149.9mV	53.97V	207.9	151.0mV
39	54.35V	206.6	129.8mV	52.75V	207.1	148.2mV
40	53.69V	203.8	154.7mV	54.49V	211.8	148.6mV
41	53.38V	213.3	123.5mV	54.46V	197.4	136.3mV
42	52.45V	197.0	153.8mV	53.17V	199.5	116.5mV
43	53.42V	200.9	124.4mV	53.26V	201.0	121.0mV
44	52.26V	198.3	136.8mV	54.24V	199.7	138.4mV
45	53.40V	205.7	155.8mV	52.39V	211.9	129.4mV
46	53.50V	211.6	139.7mV	52.32V	209.7	125.5mV
47	53.01V	212.6	119.6mV	52.70V	212.8	126.0mV
48	54.32V	208.0	129.2mV	54.55V	212.8	149.7mV
49	54.47V	197.3	150.5mV	53.56V	197.7	118.9mV
50	52.74V	199.7	147.7mV	52.83V	208.3	119.9mV
51	53.82V	212.3	138.9mV	53.44V	211.4	132.1mV
52	53.47V	213.3	142.7mV	53.27V	211.4	134.0mV
53	53.94V	210.4	122.6mV	54.40V	204.4	153.8mV
54	53.94V	203.3	151.2mV	54.62V	202.5	137.0mV
55	53.95V	200.6	152.1mV	54.16V	204.7	148.1mV
56	52.58V	207.0	116.1mV	53.13V	209.9	150.9mV
57	52.80V	211.4	135.8mV	53.47V	201.6	144.4mV
58	54.63V	205.8	148.6mV	53.93V	208.0	155.0mV
59	52.86V	212.4	140.7mV	53.03V	205.1	132.3mV
60	54.64V	200.3	141.5mV	53.83V	205.7	116.0mV

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 150℃, 1000Hrs
Test Date: 2014.05.05 ~ 2014.06.15
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
61	52.36V	203.7	137.6mV	52.46V	213.1	132.1mV
62	53.55V	198.4	135.7mV	52.29V	204.2	140.6mV
63	53.02V	201.0	137.7mV	52.56V	204.1	134.5mV
64	54.55V	203.8	136.1mV	52.32V	197.3	147.4mV
65	52.76V	202.6	144.2mV	53.42V	202.7	140.0mV
66	53.89V	201.4	144.0mV	54.37V	211.0	116.2mV
67	52.50V	197.3	131.0mV	53.77V	212.3	131.1mV
68	53.00V	212.7	120.1mV	53.01V	198.8	132.7mV
69	52.75V	208.2	114.1mV	53.83V	211.8	127.4mV
70	53.49V	205.7	132.4mV	52.46V	210.5	142.5mV
71	54.35V	203.4	154.6mV	52.82V	201.0	122.5mV
72	53.17V	206.3	149.3mV	52.60V	207.8	115.1mV
73	54.31V	204.2	118.2mV	52.83V	200.9	136.7mV
74	54.09V	201.3	136.3mV	52.63V	201.4	153.7mV
75	53.13V	203.0	130.0mV	54.10V	211.7	130.3mV
76	54.63V	201.7	136.6mV	54.20V	210.5	124.4mV
77	52.81V	211.6	142.6mV	52.64V	206.6	134.0mV

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Pressure Cooker Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2014.05.05 ~ 2014.05.11
Test Standard : JESD22 STANDARD Method-A102
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
1	52.54V	205.5	140.5mV	52.98V	202.8	128.6mV
2	53.54V	213.0	155.2mV	52.89V	210.4	153.5mV
3	53.21V	208.7	130.7mV	53.53V	203.9	116.2mV
4	54.47V	200.0	125.4mV	53.16V	198.6	136.5mV
5	53.41V	204.6	123.5mV	52.66V	207.6	120.2mV
6	52.77V	208.4	142.8mV	53.04V	202.1	134.1mV
7	54.45V	205.1	154.0mV	52.64V	206.6	141.9mV
8	52.92V	205.6	117.8mV	53.01V	212.9	130.4mV
9	53.24V	208.2	124.4mV	52.48V	198.9	132.2mV
10	53.52V	199.9	148.2mV	54.31V	197.1	128.4mV
11	53.80V	209.9	127.6mV	53.00V	198.2	123.7mV
12	52.80V	204.1	126.1mV	53.94V	208.9	133.4mV
13	54.27V	199.7	117.0mV	54.26V	212.3	130.8mV
14	54.21V	211.5	154.3mV	52.87V	202.3	132.7mV
15	54.19V	201.9	125.6mV	54.16V	198.3	154.3mV
16	53.13V	201.7	154.0mV	53.47V	209.3	130.0mV
17	53.27V	213.1	117.3mV	53.64V	200.3	117.9mV
18	54.17V	199.5	151.7mV	53.29V	199.5	154.8mV
19	52.85V	202.7	126.1mV	53.39V	205.1	124.8mV
20	52.84V	200.1	131.0mV	53.42V	197.8	119.3mV
21	54.49V	198.2	148.9mV	53.85V	207.4	121.7mV
22	54.17V	205.3	146.7mV	52.50V	202.8	140.7mV
23	53.74V	208.2	116.4mV	52.84V	197.5	150.7mV
24	54.23V	203.2	126.0mV	53.30V	212.4	131.9mV
25	54.19V	211.7	153.3mV	53.63V	211.8	145.8mV
26	52.32V	197.7	118.7mV	53.52V	202.0	141.5mV
27	52.80V	210.0	145.6mV	53.61V	199.4	154.1mV
28	54.52V	199.4	119.6mV	52.66V	197.2	153.4mV
29	53.74V	204.0	132.1mV	52.25V	208.0	149.1mV
30	54.27V	201.4	138.3mV	53.68V	208.1	155.4mV

SeCoS Corporation

Pressure Cooker Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2014.05.05 ~ 2014.05.11
Test Standard : JESD22 STANDARD Method-A102
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
31	54.10V	198.0	119.7mV	53.56V	212.9	149.6mV
32	52.57V	203.5	151.7mV	53.37V	198.5	131.5mV
33	52.37V	207.2	131.7mV	53.88V	198.6	137.7mV
34	53.25V	198.1	126.7mV	53.26V	206.2	128.6mV
35	53.50V	205.2	131.1mV	53.01V	205.9	139.7mV
36	53.70V	206.1	145.2mV	53.40V	209.1	121.0mV
37	54.42V	211.3	153.8mV	53.13V	200.6	152.6mV
38	53.83V	198.6	129.3mV	52.92V	198.3	147.9mV
39	53.26V	202.4	124.2mV	54.28V	208.4	141.2mV
40	53.01V	210.2	154.0mV	53.83V	204.6	135.0mV
41	52.74V	211.8	137.1mV	53.47V	202.7	121.4mV
42	53.17V	207.2	155.2mV	54.18V	211.3	128.0mV
43	53.50V	203.2	126.0mV	54.64V	208.1	127.6mV
44	54.33V	203.2	146.5mV	54.47V	203.3	124.9mV
45	52.54V	205.0	137.0mV	54.19V	211.9	147.6mV
46	53.24V	196.7	151.3mV	53.98V	212.8	130.0mV
47	54.16V	197.6	115.1mV	53.19V	197.2	144.7mV
48	52.54V	198.9	147.3mV	52.85V	210.4	148.6mV
49	54.61V	199.9	127.2mV	53.78V	197.7	119.4mV
50	53.87V	207.1	127.5mV	53.92V	207.4	121.7mV
51	53.14V	204.0	147.8mV	53.28V	200.8	121.0mV
52	53.96V	209.0	130.1mV	54.21V	199.0	121.5mV
53	52.99V	201.0	149.4mV	53.82V	209.7	114.3mV
54	52.49V	197.0	118.4mV	54.48V	197.8	137.7mV
55	52.26V	209.7	142.9mV	54.07V	202.8	126.2mV
56	54.50V	207.6	123.3mV	53.30V	203.3	149.1mV
57	54.16V	213.3	150.9mV	52.56V	200.6	117.9mV
58	52.59V	202.7	145.4mV	53.65V	207.3	143.4mV
59	52.50V	200.9	126.3mV	52.38V	199.7	150.1mV
60	52.84V	204.0	140.5mV	52.82V	204.5	142.2mV

SeCoS Corporation

Pressure Cooker Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2014.05.05 ~ 2014.05.11
Test Standard : JESD22 STANDARD Method-A102
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
61	54.60V	200.0	125.3mV	54.06V	206.9	153.3mV
62	53.00V	197.5	154.2mV	53.83V	211.2	154.3mV
63	52.67V	199.0	117.7mV	52.92V	204.9	150.6mV
64	52.89V	209.4	134.9mV	53.38V	201.4	144.5mV
65	53.46V	211.4	128.6mV	54.05V	210.8	154.0mV
66	54.07V	212.4	129.0mV	52.38V	203.9	148.3mV
67	53.35V	207.1	135.7mV	53.72V	206.8	114.7mV
68	52.36V	200.1	119.1mV	52.82V	206.1	148.6mV
69	53.32V	203.6	148.4mV	54.21V	208.3	124.3mV
70	53.45V	200.2	129.3mV	54.50V	200.0	122.2mV
71	52.43V	198.8	135.4mV	53.13V	203.2	132.0mV
72	54.35V	211.1	120.8mV	52.99V	200.9	151.1mV
73	54.54V	206.3	151.7mV	52.76V	199.3	129.8mV
74	53.00V	204.8	114.8mV	54.37V	210.8	114.1mV
75	52.52V	204.8	127.9mV	52.65V	212.1	148.1mV
76	52.40V	198.1	118.4mV	52.94V	207.2	139.4mV
77	54.23V	204.8	115.4mV	53.83V	209.8	151.4mV

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Temperature Cycle Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2014.05.05 ~ 2014.06.25
Test Standard : JESD22 STANDARD Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
1	52.48V	205.9	141.9mV	53.31V	201.0	148.3mV
2	52.86V	201.6	116.5mV	53.26V	197.1	115.3mV
3	52.46V	208.6	122.7mV	54.47V	201.3	152.6mV
4	52.75V	206.2	133.1mV	53.95V	212.9	131.8mV
5	54.13V	204.5	155.4mV	52.81V	210.0	127.6mV
6	53.24V	206.3	144.1mV	52.84V	201.8	118.4mV
7	53.88V	208.9	153.3mV	54.14V	209.2	146.0mV
8	53.15V	210.4	151.4mV	53.57V	199.5	140.4mV
9	54.15V	212.9	116.0mV	52.86V	200.5	116.2mV
10	52.68V	204.3	115.5mV	53.65V	211.1	148.2mV
11	54.55V	209.0	116.4mV	52.41V	205.8	143.3mV
12	52.92V	211.1	129.0mV	52.73V	212.4	154.0mV
13	53.92V	212.3	121.3mV	53.28V	202.0	132.3mV
14	52.99V	197.9	131.3mV	52.79V	209.4	131.6mV
15	53.35V	203.6	150.6mV	52.91V	202.6	141.9mV
16	53.88V	199.4	124.0mV	54.35V	213.1	136.0mV
17	53.75V	202.7	147.3mV	54.29V	203.3	143.7mV
18	53.88V	207.0	117.5mV	53.70V	200.5	146.6mV
19	53.97V	207.0	139.8mV	54.44V	202.3	121.4mV
20	53.10V	206.4	135.2mV	54.48V	198.2	144.0mV
21	53.29V	212.6	142.1mV	53.92V	207.2	125.6mV
22	53.23V	203.2	149.2mV	52.84V	210.0	153.7mV
23	54.45V	206.2	154.6mV	53.15V	212.7	126.1mV
24	54.25V	198.6	129.2mV	52.67V	202.5	140.3mV
25	53.39V	203.5	116.3mV	52.36V	209.9	146.1mV
26	53.42V	204.5	128.9mV	54.49V	202.5	121.1mV
27	54.50V	209.4	130.3mV	54.34V	199.0	129.0mV
28	52.49V	206.6	152.2mV	54.21V	212.6	146.4mV
29	52.76V	207.0	114.6mV	53.03V	199.6	140.0mV
30	52.53V	204.5	149.4mV	54.52V	210.4	148.0mV

SeCoS Corporation

Temperature Cycle Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2014.05.05 ~ 2014.06.25
Test Standard : JESD22 STANDARD Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
31	54.32V	204.6	131.3mV	53.60V	201.1	117.5mV
32	53.40V	197.9	140.1mV	53.67V	210.0	126.6mV
33	54.07V	204.2	155.9mV	53.30V	203.8	146.7mV
34	52.47V	211.3	131.0mV	53.55V	204.3	154.4mV
35	53.92V	204.7	115.7mV	54.32V	209.5	155.4mV
36	52.36V	212.8	147.4mV	53.09V	199.7	118.3mV
37	54.45V	197.7	152.5mV	53.32V	203.9	136.2mV
38	53.82V	208.2	119.0mV	54.30V	210.8	147.4mV
39	53.29V	212.1	148.4mV	53.12V	209.7	142.8mV
40	52.98V	201.4	114.7mV	53.05V	204.1	151.2mV
41	54.52V	209.7	120.1mV	52.32V	204.0	144.9mV
42	53.94V	198.9	122.1mV	52.47V	209.0	144.1mV
43	53.20V	212.3	146.3mV	53.20V	208.1	138.6mV
44	52.28V	210.7	130.4mV	52.35V	209.3	126.1mV
45	53.91V	209.7	115.8mV	54.20V	204.1	137.0mV
46	53.92V	202.3	124.6mV	52.55V	199.9	120.1mV
47	52.60V	207.1	144.5mV	53.40V	207.4	132.9mV
48	52.86V	206.6	116.5mV	52.28V	210.5	130.0mV
49	53.38V	204.6	120.7mV	54.34V	199.3	124.3mV
50	53.10V	211.2	121.3mV	54.31V	198.5	118.4mV
51	54.21V	209.3	153.6mV	53.57V	197.4	145.7mV
52	52.63V	209.3	114.1mV	52.38V	197.5	126.8mV
53	54.04V	207.3	155.1mV	53.45V	198.0	115.2mV
54	53.26V	197.5	149.0mV	52.76V	210.3	148.2mV
55	53.80V	207.6	133.3mV	52.74V	207.8	124.2mV
56	53.11V	209.4	123.6mV	54.55V	208.4	148.0mV
57	54.35V	203.0	138.0mV	53.38V	197.1	146.8mV
58	53.89V	201.6	150.8mV	54.13V	203.0	138.8mV
59	53.42V	201.4	114.3mV	54.14V	197.0	142.6mV
60	53.06V	212.0	126.5mV	52.57V	201.2	141.0mV

SeCoS Corporation

Temperature Cycle Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2014.05.05 ~ 2014.06.25
Test Standard : JESD22 STANDARD Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
61	54.00V	208.1	131.8mV	52.94V	212.3	128.0mV
62	52.71V	203.9	151.6mV	53.16V	209.2	123.7mV
63	52.31V	200.8	143.6mV	53.58V	212.3	130.1mV
64	54.31V	198.2	154.1mV	52.78V	205.7	152.7mV
65	54.19V	203.3	140.1mV	53.79V	200.5	138.0mV
66	53.10V	200.3	146.8mV	53.72V	204.6	139.8mV
67	53.43V	203.2	124.9mV	53.31V	205.9	118.2mV
68	54.11V	200.9	128.7mV	52.32V	202.5	138.8mV
69	52.64V	199.6	116.7mV	54.63V	208.1	142.4mV
70	53.74V	203.3	151.8mV	54.21V	208.8	138.0mV
71	53.19V	209.1	147.1mV	54.08V	209.5	118.0mV
72	52.77V	199.6	137.5mV	53.42V	203.3	121.8mV
73	53.98V	212.8	127.2mV	53.92V	203.9	139.6mV
74	53.04V	201.1	124.8mV	52.94V	213.1	140.1mV
75	52.26V	207.3	117.3mV	52.40V	205.2	135.3mV
76	52.94V	198.4	150.2mV	52.78V	206.8	142.8mV
77	52.33V	203.6	127.3mV	54.42V	197.3	143.6mV

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.05.11 ~ 2014.06.23
Test Standard : JESD22 STANDARD Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
1	53.77V	201.3	120.7mV	52.33V	198.1	133.3mV
2	54.57V	198.8	119.9mV	53.27V	208.7	135.7mV
3	53.93V	212.1	129.5mV	53.99V	209.0	119.8mV
4	52.68V	200.8	115.5mV	53.57V	203.7	141.8mV
5	54.03V	212.1	133.0mV	52.74V	204.9	118.6mV
6	54.00V	211.1	155.5mV	52.82V	212.9	153.8mV
7	54.33V	206.5	121.8mV	52.83V	197.8	120.8mV
8	53.74V	198.1	117.1mV	53.77V	210.4	150.7mV
9	53.31V	202.9	137.9mV	53.03V	211.2	121.4mV
10	53.46V	205.1	135.9mV	54.22V	207.0	154.8mV
11	52.96V	197.2	149.5mV	53.36V	209.1	151.3mV
12	53.33V	197.0	133.1mV	54.46V	198.0	131.4mV
13	53.85V	208.0	114.7mV	53.67V	209.2	134.6mV
14	53.24V	204.8	116.9mV	52.41V	208.8	125.3mV
15	54.32V	199.1	123.0mV	53.39V	203.9	123.8mV
16	53.27V	201.5	151.4mV	52.60V	204.2	138.9mV
17	52.52V	204.1	115.3mV	52.94V	200.3	119.5mV
18	52.88V	212.4	155.7mV	52.83V	212.3	150.7mV
19	54.15V	208.1	145.7mV	52.80V	211.1	134.0mV
20	53.26V	210.1	155.0mV	54.62V	213.2	136.5mV
21	54.48V	208.0	153.3mV	53.77V	209.3	143.5mV
22	52.94V	210.3	132.6mV	52.53V	206.9	152.0mV
23	53.09V	211.7	147.5mV	53.06V	200.2	143.6mV
24	52.43V	201.9	125.0mV	54.08V	210.9	146.7mV
25	52.42V	205.1	132.8mV	53.23V	196.7	124.2mV
26	54.31V	203.3	122.0mV	54.29V	200.8	151.0mV
27	53.49V	206.9	138.5mV	53.27V	199.0	136.0mV
28	54.21V	204.9	140.3mV	52.35V	201.8	151.3mV
29	53.56V	197.9	135.8mV	52.37V	200.3	143.6mV
30	53.41V	207.4	151.1mV	53.78V	207.4	133.6mV

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.05.11 ~ 2014.06.23
Test Standard : JESD22 STANDARD Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
31	54.08V	211.1	145.1mV	53.60V	207.5	150.3mV
32	52.52V	213.1	154.4mV	53.61V	197.1	121.9mV
33	54.28V	200.3	141.3mV	53.14V	197.0	123.0mV
34	52.60V	209.5	122.1mV	54.05V	203.9	121.9mV
35	53.32V	197.3	148.3mV	53.14V	207.4	151.9mV
36	54.03V	213.2	134.6mV	54.44V	203.5	131.6mV
37	54.21V	210.6	141.4mV	53.44V	205.1	137.9mV
38	52.87V	205.9	139.0mV	52.99V	203.1	118.6mV
39	52.46V	198.0	134.5mV	53.97V	198.7	122.2mV
40	54.07V	206.7	129.8mV	53.74V	199.9	142.9mV
41	52.58V	206.1	145.6mV	53.02V	200.4	153.4mV
42	52.90V	200.2	130.0mV	54.59V	201.7	153.1mV
43	53.52V	205.1	124.0mV	52.55V	213.3	115.7mV
44	53.65V	199.7	117.2mV	54.26V	207.9	116.0mV
45	53.31V	208.3	117.5mV	52.92V	206.4	133.8mV
46	54.29V	210.6	137.3mV	52.91V	212.4	127.2mV
47	52.90V	198.1	137.6mV	54.05V	210.7	116.4mV
48	53.41V	202.7	121.7mV	54.61V	201.1	155.3mV
49	53.76V	209.2	149.9mV	52.57V	205.9	122.7mV
50	52.41V	210.9	130.5mV	54.34V	206.0	122.4mV
51	54.32V	197.3	123.1mV	54.21V	202.3	124.0mV
52	54.34V	198.1	121.1mV	54.34V	207.4	154.1mV
53	53.25V	200.7	122.6mV	53.20V	198.7	144.9mV
54	54.47V	207.9	126.9mV	52.86V	205.0	120.3mV
55	53.25V	203.5	144.8mV	52.97V	199.5	129.1mV
56	53.41V	199.3	144.8mV	53.03V	204.5	116.9mV
57	53.40V	200.9	137.6mV	53.64V	203.6	143.5mV
58	53.15V	205.2	136.6mV	52.42V	201.6	119.4mV
59	52.73V	208.4	153.1mV	54.51V	212.5	135.3mV
60	54.63V	205.4	139.7mV	53.71V	200.7	122.2mV

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.05.11 ~ 2014.06.23
Test Standard : JESD22 STANDARD Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
61	53.07V	210.4	127.9mV	54.01V	211.0	135.5mV
62	52.95V	208.3	115.0mV	54.49V	202.9	155.6mV
63	54.22V	196.8	126.8mV	54.49V	210.9	140.4mV
64	53.39V	198.4	125.6mV	53.99V	208.5	124.4mV
65	54.64V	206.8	152.1mV	53.95V	207.8	115.4mV
66	52.39V	204.0	135.4mV	54.42V	204.3	140.7mV
67	54.03V	201.7	125.9mV	52.75V	203.0	137.3mV
68	53.04V	199.0	114.9mV	53.92V	210.5	126.5mV
69	54.33V	210.3	116.8mV	54.48V	202.8	120.1mV
70	54.32V	210.8	133.8mV	54.22V	210.9	135.7mV
71	53.32V	205.5	140.6mV	53.55V	200.9	140.2mV
72	53.10V	211.6	139.4mV	53.65V	213.1	146.9mV
73	53.48V	210.9	126.9mV	54.59V	207.6	125.1mV
74	52.93V	208.3	140.3mV	53.24V	210.7	153.2mV
75	52.84V	211.9	142.3mV	54.28V	208.2	120.4mV
76	52.26V	207.2	137.4mV	52.98V	205.7	147.0mV
77	52.98V	205.3	122.9mV	52.83V	207.8	139.7mV

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.05.11 ~ 2014.06.23
Test Standard : JESD22 STANDARD Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
1	52.53V	210.5	137.3mV	53.21V	201.5	150.4mV
2	53.22V	202.7	138.4mV	53.23V	207.1	127.7mV
3	52.71V	202.6	125.1mV	53.19V	197.8	136.7mV
4	54.52V	212.1	132.0mV	53.58V	203.9	141.1mV
5	54.53V	203.5	138.6mV	53.27V	201.4	134.6mV
6	53.71V	212.1	115.2mV	54.31V	199.9	151.5mV
7	53.96V	208.8	130.5mV	54.35V	203.6	121.9mV
8	54.42V	206.1	121.4mV	54.49V	205.4	149.2mV
9	54.39V	203.3	115.0mV	52.82V	206.6	124.3mV
10	54.55V	201.3	145.1mV	52.27V	202.3	118.6mV
11	53.33V	207.1	133.2mV	54.14V	209.4	118.2mV
12	53.53V	210.3	150.3mV	53.18V	210.5	143.6mV
13	54.43V	198.1	135.0mV	53.66V	209.7	127.7mV
14	54.22V	198.1	146.2mV	53.55V	200.0	118.2mV
15	53.64V	207.9	155.3mV	52.86V	208.9	118.8mV
16	53.25V	197.6	115.8mV	52.90V	201.1	125.0mV
17	52.75V	197.1	125.7mV	53.71V	209.1	144.8mV
18	52.87V	208.1	126.9mV	54.53V	203.4	149.6mV
19	52.78V	203.8	121.0mV	53.33V	210.2	114.5mV
20	53.24V	201.1	151.1mV	53.41V	203.4	141.2mV
21	52.99V	197.8	153.2mV	53.56V	212.1	118.6mV
22	54.51V	199.9	118.7mV	53.24V	204.0	142.0mV
23	53.81V	212.7	122.0mV	53.27V	199.5	146.3mV
24	53.08V	205.1	153.3mV	53.57V	206.6	134.8mV
25	53.34V	212.1	115.7mV	53.60V	199.7	143.5mV
26	53.06V	210.9	129.4mV	54.07V	205.1	115.2mV
27	52.86V	213.3	147.5mV	52.72V	206.6	151.8mV
28	52.76V	204.9	155.2mV	53.56V	209.4	131.8mV
29	53.09V	204.6	132.5mV	52.64V	202.3	136.9mV
30	53.67V	212.6	118.9mV	52.99V	207.4	122.8mV

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.05.11 ~ 2014.06.23
Test Standard : JESD22 STANDARD Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
31	52.76V	204.0	148.6mV	52.39V	200.1	152.7mV
32	53.52V	199.8	130.9mV	54.41V	209.0	141.2mV
33	53.89V	199.8	131.5mV	54.55V	203.4	143.8mV
34	53.52V	199.9	119.7mV	53.39V	205.2	141.6mV
35	54.47V	202.6	120.7mV	52.46V	208.0	152.4mV
36	54.64V	205.8	122.8mV	54.43V	201.5	120.6mV
37	54.36V	201.7	116.0mV	53.53V	211.8	118.4mV
38	53.64V	204.0	141.4mV	53.39V	199.7	137.9mV
39	52.30V	202.6	151.5mV	53.08V	213.1	116.6mV
40	53.85V	202.1	133.0mV	54.38V	197.0	134.0mV
41	54.51V	205.0	138.3mV	53.10V	208.2	151.2mV
42	52.70V	198.8	122.5mV	54.57V	210.0	132.7mV
43	52.53V	211.6	124.0mV	52.55V	209.3	144.6mV
44	53.56V	205.8	134.9mV	53.69V	211.3	134.9mV
45	54.12V	208.5	122.9mV	53.08V	198.2	143.2mV
46	54.08V	208.3	143.6mV	52.72V	199.4	141.4mV
47	54.26V	199.0	118.4mV	52.58V	201.0	155.7mV
48	52.27V	200.4	134.8mV	54.51V	209.2	120.8mV
49	54.32V	211.2	140.6mV	53.74V	209.2	154.9mV
50	52.66V	207.6	114.4mV	53.58V	204.9	133.8mV
51	52.34V	212.4	147.9mV	53.67V	202.9	141.7mV
52	53.49V	201.4	124.0mV	52.64V	212.0	125.0mV
53	53.49V	212.0	133.4mV	52.77V	201.5	147.4mV
54	53.99V	198.6	146.6mV	53.95V	209.6	123.8mV
55	53.43V	207.8	126.0mV	53.46V	197.6	140.7mV
56	53.65V	207.1	134.5mV	52.25V	207.1	153.5mV
57	53.15V	197.0	115.0mV	53.87V	198.7	137.6mV
58	53.58V	197.8	120.9mV	52.95V	208.5	132.7mV
59	53.08V	201.1	142.6mV	53.88V	210.5	146.9mV
60	54.28V	197.2	130.1mV	52.78V	205.5	141.0mV

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2014.05.11 ~ 2014.06.23
Test Standard : JESD22 STANDARD Method-A101
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
61	53.46V	205.0	150.2mV	54.21V	200.0	130.9mV
62	52.29V	213.4	133.2mV	54.30V	212.2	133.8mV
63	54.52V	211.5	123.4mV	54.51V	202.2	142.4mV
64	52.48V	205.5	151.2mV	53.50V	204.7	147.8mV
65	53.87V	210.7	131.2mV	54.14V	205.4	155.0mV
66	53.75V	198.4	144.7mV	53.91V	207.9	155.4mV
67	53.09V	213.0	146.1mV	54.55V	201.4	146.9mV
68	52.90V	199.0	145.8mV	53.92V	212.9	124.1mV
69	52.74V	205.8	153.4mV	52.55V	205.4	128.9mV
70	54.45V	203.4	141.8mV	54.61V	209.3	151.9mV
71	53.45V	200.0	126.7mV	53.18V	209.8	117.3mV
72	53.08V	207.0	124.6mV	54.55V	209.6	141.4mV
73	53.97V	205.4	126.9mV	52.74V	209.3	123.7mV
74	53.68V	198.0	132.3mV	53.36V	206.2	145.7mV
75	53.70V	208.3	152.6mV	54.03V	197.0	146.1mV
76	52.87V	209.0	116.1mV	52.53V	209.1	146.0mV
77	52.92V	206.4	139.8mV	53.30V	203.1	143.3mV

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Solderability Test Data

Report No : T140630-059
Part No : MMBT3904W
Test Equipment: JUNO Test System DTS-1000
Test Condition : V(BR)CEO > 40V, 100 < HFE < 300, VCE(sat) < 300mV
Test Condition: 245℃ ± 5℃, 5Sec
Test Date: 2014.06.28 ~ 2014.06.28
Test Standard : JESD22 STANDER Method-B102
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	h_{FE}	$V_{CE(sat)}$ (mV)
1	54.38V	207.9	124.4mV	54.34V	204.1	149.1mV
2	53.09V	210.4	138.1mV	54.24V	208.4	126.4mV
3	53.09V	211.3	128.2mV	53.77V	197.0	153.6mV
4	54.25V	207.2	135.5mV	54.39V	204.0	122.8mV
5	52.94V	213.0	140.2mV	54.11V	201.6	151.3mV
6	53.44V	205.2	131.2mV	53.39V	206.4	124.0mV
7	53.78V	204.9	143.9mV	53.34V	208.1	135.7mV
8	54.02V	204.0	125.1mV	52.79V	203.3	140.5mV
9	54.00V	198.3	116.1mV	52.96V	203.0	139.4mV
10	53.30V	210.2	126.5mV	53.68V	208.7	133.7mV

Made By: Leo Hsia

Approval: Peter Yang