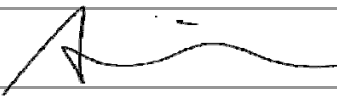


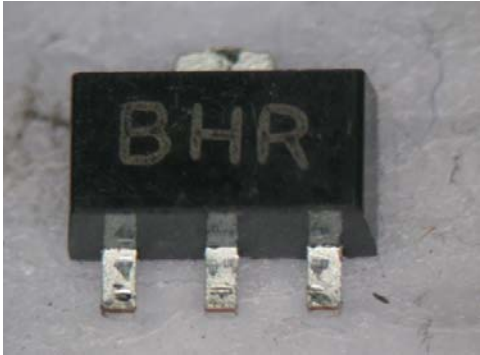
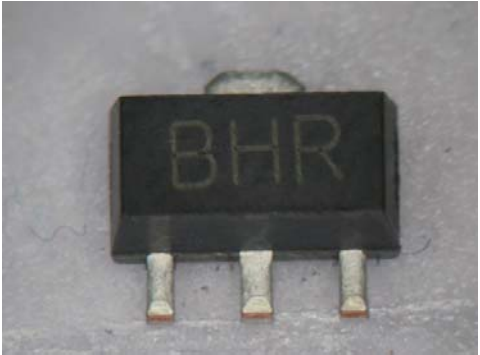

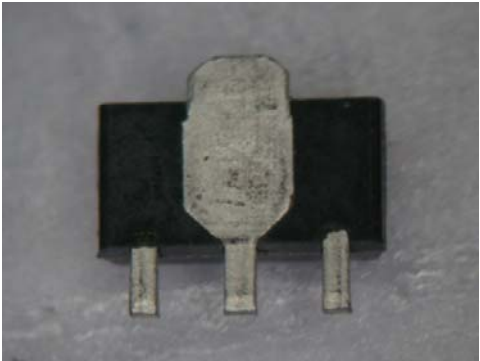


## Product/Process Change Notification

PCN#	Effective Date	Issue Date
2015-10-21C-02	2015/11/1	2015/10/21
PCN Classification		Product Category
Major		Transistor
Subject		
Change the assembly house.		
Affected Product(s)		
2SB1386		
Description of Change(s)		
The original assembly house, GTM Corporation, was shut down; thus, we change to the second assembly house.		
Content of Change(s)		
Assembly house.		
Impact(s)		
None		
Attachment(s)		
Reliability Test Report.		

Approval		
Issue by	Alice Lai	e-mail: alice@secosgmbh.com
Development Engineer		Alice Lai
QA Manager		Peter Yang
General Manger		Mathew Liu
Customer Approval		
Customer's Comment		
Customer's Consent with Signature		

Exterior comparison Chart	
Original	New
 <p>A top-down photograph of a black, rectangular electronic component with three silver leads extending from the bottom. The letters "BHR" are embossed in a light color on the top surface of the component.</p>	 <p>A top-down photograph of a black, rectangular electronic component with three silver leads extending from the bottom. The letters "BHR" are embossed in a light color on the top surface of the component.</p>
Top View	Top View
 <p>A back-view photograph of the original component, showing the three silver leads and the reverse side of the black housing. A faint, illegible marking is visible on the top surface of the housing.</p>	 <p>A back-view photograph of the new component, showing the three silver leads and the reverse side of the black housing. A faint, illegible marking is visible on the top surface of the housing.</p>
Back View	Back View



## Reliability Testing Summary Report

Date: 2015/10/08

Document No.: SI15 -10-102

Test Item	P/N	Test Condition	(LTPD)	Sample Numbers	Allow Fall Numbers	Fall Numbers	Result
HTRB High Temp Reverse Bias	2SB1386	150 ± 5°C, 80% VR, T = 1000hrs		77	0	0	ACC
HTSL High Temperature Storage Life	2SB1386	150°C, T = 1000 hrs		77	0	0	ACC
PCT Pressure Cooker Test	2SB1386	121°C, 29.7PSIG, 168 hrs		77	0	0	ACC
TCT Temperature Cycle Test	2SB1386	-55°C/30min, 150°C/30min, For 1000 Cycle		77	0	0	ACC
THT High Temperature High Humidity Test	2SB1386	85 ± 2°C, RH=85±5%, 1000 hrs		77	0	0	ACC
H3TRB High Temper High Humidity Reverse Bies Test	2SB1386	85 ± 2°C, RH=85±5%, 1000 hrs		77	0	0	ACC
Solderability	2SB1386	245 ± 5°C, 5Sec the inspected area of each lead must have 95% solder coverage minimum		10	0	0	ACC

**Judgment:**

qualified     unqualified

Testing Start Date: 2015.08.17    Testing End Date: 2015.10.08

Tester: King Huang    Approval: Peter Yang



## Electrical Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 25°C

Test Date: 2015.08.17

Test Standard : Specifications

Operator: Leo Hsia

Test Result: PASS

No	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
1	-43.28V	286.1	-278mV
2	-42.63V	257.9	-276mV
3	-42.45V	267.5	-266mV
4	-48.12V	271.6	-270mV
5	-46.21V	256.0	-242mV
6	-47.44V	279.6	-248mV
7	-47.90V	267.7	-274mV
8	-46.56V	252.9	-251mV
9	-42.72V	287.3	-248mV
10	-47.76V	281.2	-272mV
11	-47.20V	285.0	-268mV
12	-47.07V	288.5	-276mV
13	-45.41V	270.9	-272mV
14	-47.33V	274.4	-247mV
15	-46.55V	278.3	-274mV
16	-45.99V	284.7	-260mV
17	-46.09V	272.3	-272mV
18	-44.80V	261.0	-258mV
19	-48.10V	280.5	-273mV
20	-44.14V	279.6	-264mV
21	-46.16V	255.5	-250mV
22	-42.43V	272.8	-241mV
23	-43.04V	271.6	-263mV
24	-46.04V	291.2	-259mV
25	-43.07V	288.3	-253mV
26	-47.89V	287.6	-251mV
27	-47.47V	290.1	-251mV
28	-46.74V	258.0	-261mV
29	-43.30V	280.1	-279mV
30	-47.89V	291.4	-248mV



## Electrical Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 25°C

Test Date: 2015.08.17

Test Standard : Specifications

Operator: Leo Hsia

Test Result: PASS

No	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
31	-46.10V	282.8	-274mV
32	-44.67V	282.2	-278mV
33	-47.20V	263.9	-279mV
34	-43.39V	269.4	-253mV
35	-47.88V	283.5	-279mV
36	-45.89V	273.1	-248mV
37	-45.15V	254.1	-246mV
38	-42.35V	260.3	-253mV
39	-42.47V	283.8	-243mV
40	-47.32V	288.1	-253mV
41	-42.50V	280.1	-277mV
42	-45.26V	278.5	-257mV
43	-46.50V	255.7	-277mV
44	-44.24V	263.9	-277mV
45	-47.08V	271.5	-266mV
46	-47.51V	253.5	-250mV
47	-45.35V	288.1	-263mV
48	-43.65V	270.5	-278mV
49	-44.97V	272.3	-257mV
50	-47.61V	274.2	-279mV
51	-45.06V	273.4	-260mV
52	-44.28V	275.8	-266mV
53	-48.14V	289.5	-257mV
54	-42.66V	268.4	-250mV
55	-44.45V	280.9	-254mV
56	-44.27V	262.0	-272mV
57	-44.74V	283.3	-250mV
58	-45.94V	260.6	-257mV
59	-45.56V	288.5	-279mV
60	-47.09V	290.3	-253mV



# SeCoS Corporation

## Electrical Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 25°C

Test Date: 2015.08.17

Test Standard : Specifications

Operator: Leo Hsia

Test Result: PASS

No	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
61	-47.39V	277.3	-260mV
62	-42.57V	277.7	-262mV
63	-46.33V	253.1	-275mV
64	-48.25V	270.4	-275mV
65	-43.34V	285.6	-258mV
66	-47.63V	260.6	-270mV
67	-47.23V	285.3	-272mV
68	-46.18V	277.4	-269mV
69	-42.47V	284.1	-267mV
70	-42.65V	283.1	-260mV
71	-44.90V	265.6	-259mV
72	-43.69V	281.9	-257mV
73	-47.34V	255.5	-263mV
74	-48.18V	264.9	-274mV
75	-43.39V	288.5	-270mV
76	-42.43V	284.6	-253mV
77	-47.01V	269.3	-263mV

Made By: King Huang

Approval: Peter Yang



## High Temperature Reverse Bias Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $150 \pm 5^\circ C$ , 80% VR, T = 1000 hrs

Test Date: 2015.08.17 ~ 2015.09.29

Test Standard : JESD22 STANDARD Method-A108

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
1	-48.05V	255.1	-245mV	-45.33V	255.3	-271mV
2	-43.71V	264.9	-256mV	-45.40V	278.5	-244mV
3	-45.05V	284.8	-247mV	-46.33V	264.7	-276mV
4	-46.35V	252.1	-247mV	-42.33V	283.2	-270mV
5	-43.65V	266.6	-246mV	-47.48V	283.8	-271mV
6	-43.41V	253.4	-264mV	-43.34V	270.5	-269mV
7	-46.77V	278.7	-251mV	-44.01V	285.9	-255mV
8	-46.37V	253.4	-245mV	-48.23V	267.0	-264mV
9	-43.28V	267.8	-280mV	-48.10V	274.3	-248mV
10	-43.78V	260.7	-258mV	-47.05V	272.0	-253mV
11	-44.24V	273.8	-253mV	-47.92V	264.7	-269mV
12	-45.34V	263.9	-256mV	-42.98V	273.9	-247mV
13	-44.83V	271.3	-259mV	-47.97V	253.6	-273mV
14	-45.47V	283.1	-243mV	-42.80V	253.9	-263mV
15	-43.63V	283.3	-279mV	-43.27V	257.3	-273mV
16	-47.08V	267.2	-279mV	-43.98V	291.5	-245mV
17	-42.54V	256.6	-242mV	-43.17V	272.3	-269mV
18	-45.78V	253.3	-260mV	-45.63V	284.5	-263mV
19	-46.20V	252.9	-270mV	-42.31V	263.7	-249mV
20	-42.93V	272.9	-246mV	-43.24V	278.3	-264mV
21	-45.11V	271.4	-273mV	-46.89V	254.0	-260mV
22	-44.90V	288.5	-271mV	-43.63V	256.2	-245mV
23	-45.17V	275.5	-276mV	-43.64V	255.1	-277mV
24	-47.96V	288.2	-261mV	-43.85V	281.3	-257mV
25	-47.01V	283.7	-274mV	-48.14V	278.1	-248mV
26	-44.23V	289.4	-271mV	-42.89V	262.6	-265mV
27	-43.63V	286.3	-262mV	-48.18V	286.1	-256mV
28	-42.90V	269.1	-274mV	-48.31V	275.0	-241mV
29	-45.55V	251.7	-243mV	-48.17V	274.4	-256mV



## High Temperature Reverse Bias Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $150 \pm 5^\circ C$ , 80% VR, T = 1000 hrs

Test Date: 2015.08.17 ~ 2015.09.29

Test Standard : JESD22 STANDARD Method-A108

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
30	-45.21V	282.4	-249mV	-48.02V	284.9	-241mV
31	-44.09V	252.6	-269mV	-45.75V	260.8	-254mV
32	-46.70V	286.5	-252mV	-42.56V	285.8	-253mV
33	-43.18V	269.7	-272mV	-47.64V	286.2	-279mV
34	-48.13V	257.4	-248mV	-43.46V	290.4	-277mV
35	-43.20V	268.3	-262mV	-44.43V	262.8	-274mV
36	-42.61V	271.5	-252mV	-46.54V	268.4	-244mV
37	-48.15V	289.9	-244mV	-46.74V	282.9	-254mV
38	-45.73V	286.6	-248mV	-45.55V	275.6	-274mV
39	-47.60V	270.6	-278mV	-42.52V	277.4	-262mV
40	-45.52V	265.0	-268mV	-46.69V	286.8	-253mV
41	-48.06V	280.7	-269mV	-44.81V	275.1	-246mV
42	-45.98V	285.1	-273mV	-47.81V	272.7	-246mV
43	-42.40V	256.9	-278mV	-46.72V	261.1	-265mV
44	-45.47V	282.4	-257mV	-46.07V	252.1	-270mV
45	-48.31V	291.8	-252mV	-46.22V	262.7	-255mV
46	-48.13V	283.8	-251mV	-46.24V	259.2	-241mV
47	-43.72V	291.7	-254mV	-42.35V	258.5	-274mV
48	-45.75V	285.1	-272mV	-46.83V	274.0	-259mV
49	-46.31V	279.3	-258mV	-46.33V	290.5	-244mV
50	-46.37V	264.2	-265mV	-46.88V	291.8	-242mV
51	-47.52V	266.1	-251mV	-43.62V	291.5	-277mV
52	-42.58V	278.7	-263mV	-44.26V	273.3	-250mV
53	-43.73V	289.1	-271mV	-45.31V	275.4	-250mV
54	-47.26V	280.6	-260mV	-47.20V	285.4	-261mV
55	-46.14V	273.0	-260mV	-44.67V	269.4	-254mV
56	-46.96V	258.6	-269mV	-46.82V	268.1	-253mV
57	-47.88V	262.4	-241mV	-43.01V	260.6	-273mV
58	-45.34V	278.9	-264mV	-45.36V	289.3	-262mV





# SeCoS Corporation

## High Temperature Reverse Bias Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $150 \pm 5^\circ C$  , 80% VR, T = 1000 hrs

Test Date: 2015.08.17 ~ 2015.09.29

Test Standard : JESD22 STANDARD Method-A108

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
59	-44.40V	257.1	-274mV	-44.27V	271.4	-272mV
60	-43.50V	270.6	-261mV	-43.93V	260.9	-248mV
61	-47.18V	276.2	-241mV	-47.64V	273.5	-252mV
62	-47.90V	257.2	-246mV	-46.43V	259.8	-242mV
63	-43.76V	278.5	-263mV	-44.71V	256.3	-274mV
64	-46.41V	271.4	-265mV	-45.53V	266.5	-247mV
65	-45.47V	292.1	-249mV	-47.25V	287.9	-242mV
66	-43.10V	268.3	-243mV	-47.20V	275.9	-280mV
67	-44.10V	274.1	-243mV	-44.32V	260.9	-277mV
68	-45.81V	286.4	-278mV	-44.39V	279.0	-277mV
69	-47.00V	255.7	-275mV	-43.57V	256.2	-241mV
70	-47.59V	280.8	-274mV	-45.35V	278.3	-268mV
71	-47.89V	271.1	-247mV	-44.67V	267.1	-278mV
72	-44.37V	253.6	-259mV	-46.89V	252.9	-258mV
73	-42.99V	282.2	-263mV	-48.28V	286.8	-269mV
74	-46.70V	274.1	-249mV	-45.78V	283.1	-263mV
75	-46.40V	259.9	-279mV	-46.53V	265.8	-258mV
76	-46.51V	272.3	-249mV	-47.68V	277.9	-257mV
77	-44.88V	271.4	-278mV	-43.76V	267.4	-275mV

Made By: King Huang

Approval: Peter Yang



## High Temperature Storage Life Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 150°C, 1000Hrs

Test Date: 2015.08.17 ~ 2015.09.29

Test Standard : JESD22 STANDARD Method-A103

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
1	-48.13V	258.4	-264mV	-43.56V	258.8	-241mV
2	-42.76V	288.6	-251mV	-42.35V	272.8	-274mV
3	-44.21V	287.5	-245mV	-46.26V	284.8	-269mV
4	-45.64V	273.2	-274mV	-44.87V	253.1	-247mV
5	-45.07V	290.0	-275mV	-47.16V	277.9	-258mV
6	-45.45V	266.4	-244mV	-47.13V	261.0	-248mV
7	-47.95V	278.6	-243mV	-43.23V	253.5	-243mV
8	-45.42V	257.7	-271mV	-43.47V	256.5	-252mV
9	-44.01V	268.1	-252mV	-42.42V	265.3	-271mV
10	-47.32V	260.8	-264mV	-45.75V	287.2	-244mV
11	-42.76V	279.1	-250mV	-46.85V	286.0	-256mV
12	-46.48V	257.5	-249mV	-46.86V	274.8	-266mV
13	-47.62V	272.1	-266mV	-47.61V	274.0	-263mV
14	-43.70V	262.4	-272mV	-45.98V	255.7	-274mV
15	-45.29V	275.4	-250mV	-45.95V	273.0	-279mV
16	-45.42V	266.0	-267mV	-45.31V	270.7	-246mV
17	-42.54V	287.1	-249mV	-46.97V	263.8	-268mV
18	-42.58V	283.1	-242mV	-47.32V	282.1	-247mV
19	-48.14V	256.0	-269mV	-45.10V	278.2	-262mV
20	-46.34V	276.3	-260mV	-45.36V	281.2	-253mV
21	-45.26V	286.6	-263mV	-45.58V	268.9	-265mV
22	-42.80V	288.0	-259mV	-47.28V	259.4	-279mV
23	-47.37V	262.8	-254mV	-42.71V	274.0	-267mV
24	-42.98V	274.2	-244mV	-44.69V	253.1	-251mV
25	-47.74V	292.1	-278mV	-44.31V	273.8	-259mV
26	-46.18V	284.0	-253mV	-44.92V	264.2	-250mV
27	-42.90V	252.0	-267mV	-43.94V	264.8	-249mV
28	-43.62V	275.6	-258mV	-46.90V	278.0	-241mV
29	-45.41V	256.4	-277mV	-47.71V	272.2	-262mV



## High Temperature Storage Life Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 150°C, 1000Hrs

Test Date: 2015.08.17 ~ 2015.09.29

Test Standard : JESD22 STANDARD Method-A103

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
30	-48.08V	268.2	-250mV	-45.34V	260.3	-280mV
31	-46.85V	283.1	-244mV	-46.54V	284.9	-269mV
32	-42.98V	261.6	-264mV	-47.68V	268.2	-271mV
33	-45.76V	254.4	-249mV	-45.96V	260.7	-265mV
34	-43.37V	268.9	-256mV	-44.94V	276.8	-268mV
35	-46.52V	284.1	-272mV	-46.72V	260.7	-250mV
36	-43.05V	277.0	-277mV	-42.81V	276.7	-265mV
37	-46.24V	255.1	-258mV	-46.94V	270.6	-244mV
38	-42.44V	280.1	-251mV	-46.85V	275.5	-277mV
39	-42.84V	289.1	-259mV	-46.63V	276.8	-254mV
40	-44.06V	261.0	-264mV	-46.27V	262.5	-276mV
41	-43.27V	264.4	-267mV	-48.10V	287.9	-279mV
42	-43.18V	270.2	-259mV	-42.90V	261.3	-257mV
43	-44.27V	275.1	-253mV	-47.07V	257.2	-279mV
44	-42.61V	270.6	-279mV	-46.05V	279.2	-264mV
45	-45.65V	271.4	-253mV	-42.82V	272.6	-269mV
46	-47.16V	255.2	-270mV	-44.72V	274.5	-266mV
47	-46.84V	269.5	-259mV	-46.71V	261.5	-251mV
48	-42.79V	267.2	-241mV	-47.12V	274.6	-255mV
49	-44.51V	285.2	-254mV	-46.04V	262.4	-273mV
50	-43.07V	262.7	-247mV	-42.77V	259.4	-263mV
51	-46.83V	252.5	-252mV	-46.71V	275.8	-278mV
52	-44.41V	267.3	-258mV	-42.74V	270.5	-253mV
53	-45.29V	253.5	-241mV	-46.78V	268.7	-269mV
54	-47.28V	282.0	-255mV	-44.80V	284.8	-272mV
55	-45.46V	267.2	-267mV	-47.27V	279.7	-261mV
56	-45.05V	279.4	-253mV	-44.39V	272.6	-275mV
57	-44.45V	289.9	-245mV	-46.79V	282.5	-252mV
58	-45.48V	282.7	-273mV	-47.37V	266.1	-242mV



# SeCoS Corporation

## High Temperature Storage Life Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 150°C, 1000Hrs

Test Date: 2015.08.17 ~ 2015.09.29

Test Standard : JESD22 STANDARD Method-A103

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
59	-44.72V	260.8	-266mV	-45.77V	264.3	-270mV
60	-47.13V	270.1	-279mV	-44.07V	290.5	-249mV
61	-44.07V	256.0	-273mV	-43.17V	255.3	-262mV
62	-45.58V	287.7	-250mV	-47.56V	277.5	-244mV
63	-44.38V	275.5	-246mV	-46.39V	264.7	-259mV
64	-44.53V	273.2	-263mV	-45.51V	259.9	-250mV
65	-47.47V	277.7	-272mV	-43.68V	279.7	-258mV
66	-45.88V	261.2	-279mV	-43.43V	253.1	-256mV
67	-45.27V	258.2	-277mV	-44.99V	291.7	-262mV
68	-48.18V	281.8	-249mV	-42.35V	279.4	-254mV
69	-44.73V	257.0	-259mV	-47.48V	271.7	-265mV
70	-47.35V	257.3	-250mV	-47.53V	283.7	-272mV
71	-42.33V	262.9	-278mV	-44.41V	283.3	-271mV
72	-45.05V	289.9	-244mV	-42.57V	281.4	-259mV
73	-44.81V	289.1	-252mV	-42.36V	274.8	-242mV
74	-42.47V	260.7	-264mV	-43.01V	262.9	-248mV
75	-46.44V	276.5	-242mV	-44.91V	263.2	-251mV
76	-44.93V	267.4	-248mV	-47.01V	282.6	-249mV
77	-43.54V	256.1	-273mV	-47.87V	288.3	-245mV

Made By: King Huang

Approval: Peter Yang



# SeCoS Corporation

## Pressure Cooker Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 121°C, 100%RH, 29.7PSIG, 168Hrs

Test Date: 2015.08.17 ~ 2015.08.25

Test Standard : JESD22 STANDARD Method-A102

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
1	-45.48V	258.0	-278mV	-45.54V	269.1	-275mV
2	-42.53V	288.8	-243mV	-46.50V	262.2	-251mV
3	-45.94V	268.2	-257mV	-44.16V	258.1	-258mV
4	-44.90V	253.4	-252mV	-47.64V	275.3	-247mV
5	-45.89V	291.2	-247mV	-45.32V	290.6	-274mV
6	-46.32V	260.4	-275mV	-45.34V	270.6	-249mV
7	-46.60V	278.3	-271mV	-46.59V	291.7	-267mV
8	-47.93V	259.6	-242mV	-44.08V	278.6	-244mV
9	-44.90V	279.3	-251mV	-48.27V	255.2	-279mV
10	-43.78V	267.1	-271mV	-46.46V	253.5	-247mV
11	-47.51V	285.9	-262mV	-42.94V	287.9	-265mV
12	-43.37V	273.6	-249mV	-47.60V	265.7	-259mV
13	-43.17V	251.9	-256mV	-45.98V	268.1	-268mV
14	-44.60V	259.0	-255mV	-43.97V	290.9	-258mV
15	-47.81V	280.1	-266mV	-42.48V	261.9	-253mV
16	-46.55V	260.4	-268mV	-46.82V	264.0	-262mV
17	-47.11V	254.9	-254mV	-46.09V	289.2	-267mV
18	-44.55V	253.0	-274mV	-44.72V	268.2	-249mV
19	-47.47V	254.8	-246mV	-43.06V	254.5	-269mV
20	-46.79V	288.8	-259mV	-48.20V	276.0	-275mV
21	-46.98V	262.1	-267mV	-45.13V	281.5	-243mV
22	-42.51V	288.8	-275mV	-42.96V	270.6	-276mV
23	-45.63V	263.7	-277mV	-43.69V	254.3	-268mV
24	-43.88V	276.2	-276mV	-47.77V	259.0	-244mV
25	-44.92V	284.7	-262mV	-48.29V	285.1	-268mV
26	-44.33V	289.8	-279mV	-47.10V	283.2	-266mV
27	-44.90V	268.1	-263mV	-44.97V	264.4	-247mV
28	-45.57V	277.5	-266mV	-42.83V	257.2	-265mV
29	-47.74V	268.5	-255mV	-44.73V	260.8	-264mV



# SeCoS Corporation

## Pressure Cooker Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 121°C, 100%RH, 29.7PSIG, 168Hrs

Test Date: 2015.08.17 ~ 2015.08.25

Test Standard : JESD22 STANDARD Method-A102

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
30	-45.29V	287.6	-249mV	-45.37V	256.5	-256mV
31	-44.61V	266.6	-250mV	-44.76V	278.8	-246mV
32	-47.21V	291.8	-246mV	-42.91V	265.6	-267mV
33	-45.32V	277.0	-267mV	-44.68V	273.1	-248mV
34	-46.54V	263.0	-272mV	-42.91V	263.4	-249mV
35	-45.36V	257.1	-266mV	-48.17V	276.4	-263mV
36	-44.97V	267.3	-263mV	-45.23V	282.9	-258mV
37	-43.61V	275.5	-245mV	-44.03V	288.6	-273mV
38	-45.96V	286.7	-250mV	-45.05V	272.2	-249mV
39	-43.50V	288.5	-243mV	-47.21V	254.2	-255mV
40	-43.72V	260.8	-242mV	-42.68V	289.3	-270mV
41	-45.92V	282.9	-267mV	-45.41V	267.5	-257mV
42	-47.80V	288.7	-242mV	-45.93V	288.2	-241mV
43	-43.42V	273.2	-246mV	-46.00V	271.5	-245mV
44	-47.26V	266.2	-269mV	-48.20V	267.1	-248mV
45	-46.45V	280.2	-258mV	-46.16V	267.2	-251mV
46	-44.93V	251.8	-276mV	-45.29V	289.5	-244mV
47	-44.19V	290.6	-274mV	-47.52V	287.6	-272mV
48	-42.89V	287.5	-248mV	-45.41V	291.3	-276mV
49	-43.12V	261.0	-265mV	-47.66V	264.6	-255mV
50	-46.09V	254.6	-243mV	-47.33V	269.1	-277mV
51	-46.31V	281.2	-251mV	-43.67V	290.5	-242mV
52	-46.75V	276.9	-242mV	-46.38V	285.0	-272mV
53	-46.79V	252.0	-247mV	-47.75V	266.8	-253mV
54	-46.98V	282.2	-275mV	-43.22V	273.9	-274mV
55	-43.00V	269.5	-274mV	-43.41V	290.0	-266mV
56	-45.91V	252.3	-263mV	-45.20V	263.0	-250mV
57	-43.78V	270.0	-260mV	-43.52V	265.0	-277mV
58	-45.23V	283.1	-265mV	-46.93V	262.2	-246mV



# SeCoS Corporation

## Pressure Cooker Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition: 121°C, 100%RH, 29.7PSIG, 168Hrs

Test Date: 2015.08.17 ~ 2015.08.25

Test Standard : JESD22 STANDARD Method-A102

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
59	-43.02V	286.7	-261mV	-47.00V	273.4	-273mV
60	-44.63V	266.7	-258mV	-47.51V	259.5	-279mV
61	-47.85V	281.8	-263mV	-44.93V	291.3	-247mV
62	-45.75V	274.8	-276mV	-44.33V	270.8	-267mV
63	-47.85V	271.1	-260mV	-45.71V	262.1	-261mV
64	-48.31V	288.8	-267mV	-44.82V	284.0	-268mV
65	-47.02V	279.6	-276mV	-48.23V	291.2	-255mV
66	-44.08V	289.0	-256mV	-48.19V	257.2	-245mV
67	-45.82V	291.3	-276mV	-42.32V	265.4	-249mV
68	-44.56V	264.7	-259mV	-47.95V	273.7	-253mV
69	-42.83V	256.1	-260mV	-42.80V	271.1	-259mV
70	-42.74V	289.8	-253mV	-43.38V	263.9	-279mV
71	-47.98V	273.4	-246mV	-48.30V	273.2	-268mV
72	-45.24V	273.6	-259mV	-45.43V	287.9	-269mV
73	-46.61V	269.9	-254mV	-42.81V	284.3	-254mV
74	-47.85V	286.6	-252mV	-45.37V	279.4	-263mV
75	-47.24V	260.9	-241mV	-44.49V	273.2	-259mV
76	-47.18V	269.9	-258mV	-47.66V	271.8	-267mV
77	-46.74V	270.6	-259mV	-44.11V	277.3	-242mV

Made By: King Huang

Approval: Peter Yang



# SeCoS Corporation

## Temperature Cycle Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $-55^{\circ}C/30min, 150^{\circ}C/30min$ , for 1000 Cycle

Test Date: 2015.08.17 ~ 2015.10.08

Test Standard : JESD22 STANDARD Method-A104

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
1	-42.81V	261.3	-252mV	-46.67V	270.0	-249mV
2	-44.95V	270.5	-273mV	-46.21V	265.3	-259mV
3	-47.05V	256.3	-277mV	-47.04V	270.7	-253mV
4	-44.31V	270.7	-272mV	-45.34V	288.2	-275mV
5	-47.55V	272.4	-268mV	-47.53V	268.0	-245mV
6	-46.94V	274.3	-247mV	-43.27V	266.3	-245mV
7	-44.46V	287.2	-250mV	-47.80V	286.1	-269mV
8	-43.45V	260.2	-244mV	-42.51V	265.2	-258mV
9	-42.39V	270.9	-257mV	-44.61V	288.0	-261mV
10	-45.26V	275.1	-248mV	-42.90V	289.2	-265mV
11	-42.85V	256.7	-265mV	-43.06V	272.2	-249mV
12	-42.58V	288.6	-244mV	-45.98V	290.0	-246mV
13	-45.25V	273.7	-279mV	-45.95V	291.7	-263mV
14	-46.60V	283.8	-262mV	-47.96V	282.1	-270mV
15	-43.03V	267.0	-263mV	-45.19V	286.9	-267mV
16	-46.99V	286.1	-267mV	-44.12V	252.4	-257mV
17	-47.05V	254.7	-273mV	-45.18V	271.1	-269mV
18	-46.30V	291.0	-268mV	-46.02V	278.8	-265mV
19	-47.96V	261.0	-246mV	-45.24V	279.7	-267mV
20	-46.84V	285.9	-256mV	-45.57V	285.6	-245mV
21	-47.61V	272.5	-246mV	-44.85V	255.5	-253mV
22	-44.45V	263.2	-250mV	-46.53V	257.8	-249mV
23	-42.83V	259.3	-268mV	-46.91V	276.4	-275mV
24	-42.52V	285.9	-269mV	-44.14V	273.4	-242mV
25	-47.84V	265.1	-242mV	-45.26V	258.2	-266mV
26	-45.73V	259.5	-252mV	-43.83V	289.3	-245mV
27	-46.82V	259.3	-243mV	-47.19V	266.4	-261mV
28	-48.20V	275.9	-271mV	-47.13V	272.8	-249mV
29	-43.91V	262.0	-266mV	-46.43V	258.8	-273mV





# SeCoS Corporation

## Temperature Cycle Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $-55^{\circ}C/30min, 150^{\circ}C/30min$ , for 1000 Cycle

Test Date: 2015.08.17 ~ 2015.10.08

Test Standard : JESD22 STANDARD Method-A104

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
30	-44.75V	270.3	-255mV	-42.99V	291.2	-270mV
31	-43.86V	255.9	-247mV	-42.61V	256.0	-260mV
32	-45.27V	276.7	-279mV	-45.83V	287.0	-246mV
33	-43.27V	278.7	-247mV	-47.50V	255.5	-263mV
34	-47.05V	267.1	-248mV	-47.33V	264.4	-277mV
35	-44.12V	272.9	-262mV	-45.17V	255.8	-261mV
36	-44.90V	259.7	-265mV	-44.26V	258.0	-244mV
37	-43.60V	288.4	-260mV	-43.44V	271.0	-262mV
38	-45.49V	267.6	-279mV	-45.94V	272.5	-273mV
39	-45.74V	288.3	-264mV	-47.90V	287.7	-259mV
40	-45.67V	283.5	-247mV	-44.34V	253.5	-268mV
41	-45.87V	251.8	-270mV	-44.06V	264.6	-261mV
42	-42.66V	287.9	-268mV	-45.75V	264.0	-262mV
43	-42.43V	259.0	-256mV	-42.53V	276.0	-267mV
44	-47.90V	274.3	-260mV	-47.27V	290.4	-253mV
45	-43.73V	261.4	-268mV	-44.10V	260.6	-259mV
46	-46.10V	254.7	-264mV	-43.75V	276.3	-258mV
47	-45.30V	251.9	-249mV	-47.28V	291.8	-242mV
48	-42.54V	280.8	-248mV	-42.39V	262.9	-266mV
49	-45.26V	291.9	-246mV	-44.09V	276.0	-260mV
50	-42.93V	262.1	-256mV	-46.74V	262.4	-278mV
51	-46.27V	268.8	-270mV	-45.06V	253.0	-280mV
52	-43.58V	285.5	-260mV	-47.65V	273.0	-276mV
53	-44.27V	265.5	-273mV	-43.10V	291.6	-247mV
54	-47.98V	274.1	-253mV	-47.49V	291.6	-247mV
55	-44.55V	275.7	-253mV	-45.04V	259.6	-248mV
56	-44.43V	265.0	-279mV	-46.14V	261.7	-266mV
57	-44.28V	287.5	-249mV	-43.16V	266.4	-270mV
58	-45.62V	255.7	-247mV	-45.89V	254.0	-259mV



# SeCoS Corporation

## Temperature Cycle Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $-55^{\circ}C/30min, 150^{\circ}C/30min$ , for 1000 Cycle

Test Date: 2015.08.17 ~ 2015.10.08

Test Standard : JESD22 STANDARD Method-A104

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
59	-48.18V	254.1	-253mV	-45.30V	259.3	-244mV
60	-45.41V	276.5	-246mV	-46.40V	280.8	-277mV
61	-45.13V	259.6	-251mV	-45.44V	261.5	-249mV
62	-48.03V	276.5	-257mV	-42.40V	261.7	-269mV
63	-47.59V	269.1	-267mV	-43.82V	267.7	-254mV
64	-43.33V	265.4	-252mV	-47.26V	255.1	-278mV
65	-44.87V	272.4	-277mV	-47.70V	270.4	-264mV
66	-43.51V	292.0	-252mV	-43.58V	266.5	-273mV
67	-45.76V	253.6	-252mV	-45.95V	258.9	-268mV
68	-45.53V	286.2	-266mV	-43.37V	263.7	-249mV
69	-46.19V	259.5	-274mV	-44.64V	277.3	-269mV
70	-44.01V	286.9	-254mV	-42.82V	275.6	-259mV
71	-48.24V	260.5	-260mV	-47.39V	255.4	-268mV
72	-45.66V	260.9	-272mV	-46.94V	253.5	-251mV
73	-45.04V	259.1	-245mV	-48.19V	288.4	-245mV
74	-47.99V	264.9	-272mV	-45.81V	264.3	-272mV
75	-42.67V	255.7	-245mV	-46.65V	275.9	-256mV
76	-42.55V	270.2	-268mV	-45.63V	272.2	-263mV
77	-43.72V	277.7	-254mV	-47.70V	277.8	-251mV

Made By: King Huang

Approval: Peter Yang



## High Temperature High Humidity Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $85 \pm 2^\circ C$ ,  $85 \pm 5\% RH$ , 1000Hrs

Test Date: 2015.08.25 ~ 2015.10.06

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
1	-44.26V	289.0	-270mV	-45.14V	253.2	-241mV
2	-44.86V	271.8	-269mV	-44.13V	262.2	-267mV
3	-47.72V	254.9	-263mV	-42.52V	259.7	-276mV
4	-48.26V	274.4	-265mV	-45.21V	257.8	-268mV
5	-48.08V	251.7	-241mV	-44.45V	274.5	-247mV
6	-47.79V	263.7	-274mV	-42.35V	266.5	-248mV
7	-45.05V	290.9	-249mV	-44.80V	264.3	-266mV
8	-42.84V	273.8	-251mV	-45.00V	260.0	-249mV
9	-45.47V	285.3	-262mV	-42.46V	287.6	-245mV
10	-42.41V	262.7	-267mV	-45.48V	286.7	-278mV
11	-44.70V	290.8	-276mV	-44.50V	253.4	-269mV
12	-46.41V	283.8	-274mV	-44.91V	262.2	-256mV
13	-43.17V	257.5	-248mV	-44.57V	288.9	-268mV
14	-42.66V	286.7	-263mV	-45.53V	275.0	-263mV
15	-42.59V	278.7	-262mV	-47.37V	274.0	-274mV
16	-46.33V	258.9	-260mV	-45.32V	265.9	-275mV
17	-48.21V	251.7	-262mV	-47.02V	262.7	-254mV
18	-44.67V	255.8	-271mV	-44.61V	253.4	-243mV
19	-46.68V	281.2	-273mV	-42.38V	257.5	-255mV
20	-47.39V	256.3	-248mV	-46.57V	264.7	-274mV
21	-43.67V	252.4	-265mV	-46.89V	269.7	-252mV
22	-46.06V	276.1	-264mV	-45.25V	259.3	-272mV
23	-44.86V	271.0	-243mV	-43.73V	279.6	-242mV
24	-46.12V	254.3	-277mV	-46.89V	269.1	-251mV
25	-44.02V	274.1	-249mV	-47.97V	252.9	-253mV
26	-48.30V	279.4	-246mV	-46.89V	253.6	-241mV
27	-45.60V	260.1	-260mV	-47.41V	259.2	-269mV
28	-44.27V	255.3	-262mV	-47.68V	266.9	-245mV
29	-43.54V	277.6	-242mV	-46.94V	274.0	-264mV



# SeCoS Corporation

## High Temperature High Humidity Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $85 \pm 2^\circ C$ ,  $85 \pm 5\% RH$ , 1000Hrs

Test Date: 2015.08.25 ~ 2015.10.06

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
30	-45.59V	286.9	-243mV	-47.16V	260.8	-270mV
31	-48.21V	267.8	-253mV	-47.25V	269.9	-280mV
32	-43.32V	256.5	-260mV	-43.14V	288.3	-246mV
33	-44.36V	266.9	-266mV	-43.84V	274.2	-255mV
34	-47.47V	255.6	-278mV	-43.95V	290.9	-248mV
35	-45.83V	280.1	-256mV	-46.96V	270.8	-246mV
36	-43.43V	260.0	-245mV	-47.63V	264.9	-275mV
37	-44.97V	254.5	-251mV	-42.58V	266.6	-278mV
38	-44.07V	274.7	-265mV	-47.10V	278.8	-279mV
39	-44.05V	276.4	-262mV	-47.20V	272.6	-261mV
40	-46.07V	262.4	-248mV	-46.61V	282.6	-270mV
41	-46.29V	262.9	-249mV	-45.17V	252.7	-267mV
42	-46.48V	252.7	-270mV	-47.31V	287.1	-241mV
43	-47.74V	281.0	-253mV	-45.88V	256.1	-247mV
44	-46.21V	283.5	-267mV	-43.90V	256.3	-261mV
45	-45.89V	279.0	-260mV	-46.08V	281.0	-269mV
46	-46.30V	259.0	-264mV	-43.54V	270.6	-245mV
47	-46.96V	271.1	-244mV	-47.56V	288.9	-248mV
48	-44.76V	253.2	-252mV	-43.22V	279.6	-259mV
49	-45.87V	274.8	-241mV	-42.36V	269.0	-278mV
50	-46.04V	272.5	-270mV	-44.29V	264.5	-271mV
51	-46.07V	274.1	-275mV	-44.80V	291.0	-265mV
52	-47.79V	269.7	-261mV	-47.66V	282.0	-267mV
53	-47.84V	288.9	-268mV	-45.72V	281.5	-274mV
54	-44.32V	277.1	-261mV	-44.75V	261.7	-268mV
55	-42.66V	268.0	-260mV	-48.08V	275.2	-263mV
56	-43.92V	288.5	-250mV	-43.26V	269.6	-251mV
57	-47.40V	282.8	-254mV	-47.76V	284.0	-273mV
58	-45.18V	282.1	-255mV	-43.04V	253.7	-279mV



# SeCoS Corporation

## High Temperature High Humidity Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $85 \pm 2^\circ C$ ,  $85 \pm 5\% RH$ , 1000Hrs

Test Date: 2015.08.25 ~ 2015.10.06

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
59	-47.34V	285.2	-272mV	-44.24V	267.6	-271mV
60	-46.85V	267.8	-262mV	-44.34V	274.1	-265mV
61	-43.86V	282.4	-255mV	-43.35V	292.0	-267mV
62	-43.11V	274.6	-257mV	-45.94V	265.1	-247mV
63	-47.58V	282.8	-255mV	-43.42V	259.5	-252mV
64	-46.56V	257.0	-270mV	-48.24V	282.1	-261mV
65	-45.61V	252.6	-257mV	-47.28V	283.2	-258mV
66	-43.27V	264.8	-255mV	-43.52V	282.7	-265mV
67	-43.11V	276.2	-272mV	-47.50V	278.5	-278mV
68	-42.76V	276.3	-255mV	-42.63V	265.6	-266mV
69	-46.01V	287.8	-253mV	-42.87V	277.9	-264mV
70	-46.19V	278.0	-245mV	-46.34V	272.5	-249mV
71	-45.59V	281.4	-279mV	-44.79V	274.4	-270mV
72	-47.86V	276.1	-265mV	-43.23V	284.0	-269mV
73	-44.34V	263.6	-267mV	-46.52V	252.4	-262mV
74	-43.49V	262.6	-248mV	-45.84V	259.4	-266mV
75	-47.28V	255.5	-267mV	-46.62V	284.3	-279mV
76	-46.73V	275.8	-254mV	-45.57V	268.0	-258mV
77	-45.06V	269.3	-279mV	-46.03V	291.8	-249mV

Made By: King Huang

Approval: Peter Yang



## High Temper High Humidity Reverse Bies Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $85 \pm 2^\circ C$  ,  $85 \pm 5\% RH$  , 1000Hrs

Test Date: 2015.08.25 ~ 2015.10.06

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
1	-46.98V	264.6	-252mV	-43.73V	275.6	-265mV
2	-48.30V	286.7	-260mV	-46.49V	290.3	-250mV
3	-47.64V	266.0	-265mV	-46.45V	283.6	-256mV
4	-45.35V	272.2	-260mV	-45.95V	277.1	-267mV
5	-47.15V	253.2	-279mV	-43.43V	278.3	-278mV
6	-44.36V	275.3	-273mV	-45.09V	256.6	-254mV
7	-43.36V	260.8	-279mV	-47.75V	252.0	-245mV
8	-42.74V	266.1	-258mV	-46.34V	284.8	-277mV
9	-45.09V	267.3	-268mV	-44.28V	288.2	-264mV
10	-42.34V	255.0	-251mV	-46.01V	262.5	-248mV
11	-46.05V	270.6	-258mV	-44.41V	261.1	-250mV
12	-48.24V	254.7	-275mV	-45.65V	252.5	-260mV
13	-43.40V	291.4	-247mV	-47.59V	275.8	-247mV
14	-43.99V	269.9	-270mV	-47.95V	253.8	-244mV
15	-43.29V	271.6	-273mV	-46.38V	272.8	-278mV
16	-44.32V	288.6	-275mV	-44.20V	257.6	-262mV
17	-42.97V	283.1	-264mV	-42.89V	264.2	-248mV
18	-42.85V	261.8	-260mV	-46.66V	282.3	-277mV
19	-48.15V	282.8	-271mV	-45.10V	272.0	-244mV
20	-45.13V	266.0	-250mV	-47.68V	273.9	-253mV
21	-46.80V	273.3	-260mV	-46.90V	254.8	-260mV
22	-45.02V	279.8	-243mV	-47.09V	274.2	-266mV
23	-44.44V	285.3	-275mV	-42.39V	285.7	-262mV
24	-43.69V	276.7	-253mV	-43.71V	262.6	-267mV
25	-45.83V	264.4	-262mV	-43.27V	285.5	-258mV
26	-43.70V	254.2	-268mV	-47.43V	289.3	-246mV
27	-42.89V	290.2	-270mV	-45.45V	266.8	-267mV
28	-46.81V	255.6	-264mV	-46.39V	264.8	-279mV
29	-42.67V	268.2	-255mV	-43.93V	290.4	-273mV



## High Temper High Humidity Reverse Bies Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $85 \pm 2^\circ C$  ,  $85 \pm 5\% RH$  , 1000Hrs

Test Date: 2015.08.25 ~ 2015.10.06

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
30	-45.17V	289.1	-275mV	-46.42V	265.4	-265mV
31	-43.04V	275.4	-265mV	-47.44V	291.9	-243mV
32	-45.11V	281.2	-275mV	-44.70V	281.2	-258mV
33	-46.70V	287.6	-242mV	-47.37V	280.6	-257mV
34	-43.81V	266.1	-278mV	-44.41V	290.8	-276mV
35	-46.46V	288.8	-261mV	-43.64V	271.2	-256mV
36	-46.61V	254.3	-260mV	-46.59V	273.5	-243mV
37	-43.62V	288.8	-256mV	-45.00V	290.4	-266mV
38	-42.52V	287.1	-263mV	-45.31V	262.4	-257mV
39	-45.40V	290.8	-267mV	-42.76V	261.1	-252mV
40	-45.99V	252.9	-274mV	-48.30V	253.5	-250mV
41	-46.45V	268.5	-256mV	-42.44V	270.5	-269mV
42	-42.65V	267.5	-254mV	-43.09V	282.1	-246mV
43	-48.17V	254.9	-248mV	-46.62V	283.9	-242mV
44	-46.53V	268.5	-264mV	-44.38V	253.7	-279mV
45	-42.38V	267.0	-271mV	-48.24V	288.6	-270mV
46	-48.11V	277.9	-255mV	-44.75V	291.4	-262mV
47	-48.00V	258.4	-270mV	-43.95V	273.7	-260mV
48	-42.52V	275.6	-245mV	-47.86V	272.3	-243mV
49	-43.37V	289.2	-276mV	-47.12V	268.9	-274mV
50	-47.42V	290.0	-257mV	-44.96V	272.8	-241mV
51	-48.04V	290.3	-253mV	-45.92V	287.7	-276mV
52	-43.49V	287.6	-244mV	-44.91V	257.1	-271mV
53	-43.17V	281.5	-252mV	-44.80V	274.4	-278mV
54	-43.43V	273.7	-278mV	-44.26V	290.7	-262mV
55	-44.18V	275.2	-272mV	-43.87V	266.6	-263mV
56	-45.07V	272.6	-243mV	-47.72V	255.4	-243mV
57	-43.79V	274.5	-266mV	-47.06V	271.0	-259mV
58	-44.19V	279.6	-276mV	-43.07V	270.2	-249mV



## High Temper High Humidity Reverse Bies Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $85 \pm 2^\circ C$  ,  $85 \pm 5\% RH$  , 1000Hrs

Test Date: 2015.08.25 ~ 2015.10.06

Test Standard : JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
59	-45.86V	264.2	-269mV	-47.48V	289.8	-247mV
60	-44.04V	273.5	-253mV	-42.77V	264.8	-269mV
61	-43.09V	277.2	-251mV	-46.24V	282.8	-259mV
62	-46.56V	286.3	-245mV	-48.29V	260.4	-272mV
63	-47.35V	257.1	-248mV	-44.39V	281.2	-269mV
64	-42.51V	271.3	-277mV	-44.33V	280.0	-249mV
65	-45.96V	257.9	-267mV	-47.94V	259.9	-258mV
66	-48.26V	286.8	-259mV	-46.70V	271.7	-255mV
67	-44.50V	286.0	-268mV	-45.18V	257.5	-259mV
68	-42.74V	259.7	-252mV	-47.03V	259.9	-268mV
69	-44.33V	283.7	-274mV	-43.14V	286.3	-244mV
70	-47.24V	251.9	-247mV	-43.23V	289.6	-278mV
71	-47.89V	261.6	-251mV	-42.56V	262.3	-247mV
72	-47.75V	254.0	-270mV	-46.94V	287.0	-255mV
73	-45.71V	263.2	-254mV	-45.38V	284.4	-267mV
74	-47.80V	285.0	-265mV	-47.81V	290.0	-261mV
75	-44.26V	286.3	-246mV	-48.15V	272.9	-275mV
76	-44.82V	277.4	-254mV	-43.03V	278.5	-244mV
77	-45.38V	252.1	-278mV	-47.19V	260.0	-271mV

Made By: King Huang

Approval: Peter Yang





# SeCoS Corporation

## Solderability Test Data

Report No : T151008-102

Part No : 2SB1386

Test Equipment: JUNO Test System DTS-1000

Test Condition :  $V_{(BR)CEO} > -20V @ I_C = -1mA, I_B = 0$  ;  $82 < h_{FE} < 390 @ V_{CE} = -2V, I_C = -500mA$   
 $V_{CE(sat)} < -1000mV @ I_C = -4A, I_B = -100mA$

Test Condition:  $245^{\circ}C \pm 5^{\circ}C, 5Sec$

Test Date: 2015.10.08

Test Standard : JESD22 STANDER Method-B102

Operator: Leo Hsia

Test Result: PASS

No	Before			After		
	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)	$V_{(BR)CEO}$ (V)	$h_{FE}$	$V_{CE(sat)}$ (mV)
1	-46.84V	269.1	-242mV	-44.53V	254.4	-256mV
2	-44.04V	289.4	-260mV	-46.86V	271.4	-257mV
3	-42.74V	252.9	-280mV	-45.65V	267.2	-243mV
4	-46.51V	258.2	-242mV	-43.99V	284.5	-263mV
5	-42.91V	267.7	-272mV	-45.74V	270.6	-243mV
6	-43.39V	252.3	-259mV	-46.63V	258.3	-249mV
7	-45.83V	264.2	-243mV	-45.91V	254.5	-241mV
8	-42.44V	266.0	-249mV	-45.66V	272.2	-265mV
9	-43.55V	262.7	-259mV	-47.16V	273.1	-252mV
10	-46.09V	270.2	-277mV	-44.21V	254.4	-253mV

Made By: King Huang

Approval: Peter Yang