www.SeCosGmbH.com

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## Product/Process Change Notification

| PCN# | Effective Date | Issue Date |
|---|---|---|
| 2013-06-17C-01 | 2013/12/17 | 2013/6/17 |

| PCN Classification | Product Category |
|---|---|
| Major | Bridge Diode |

| Subject |
|---|
| Change assembbly factory for MDS package |

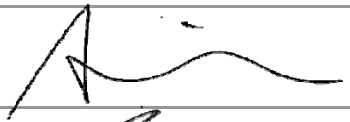
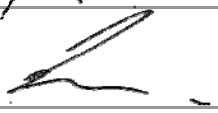
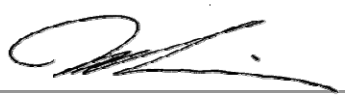
| Affected Product(s) |
|---|
| MD1S~MD7S |

| Description of Change(s) |
|---|
| Original assembly factory EOL, thus Change assembbly factory. |

| Content of Change(s) |
|---|
| Assembly factory |

| Impact(s) |
|---|
| None |

| Attachment(s) |
|---|
| Reliability test report. Packge information. Specification. |

| 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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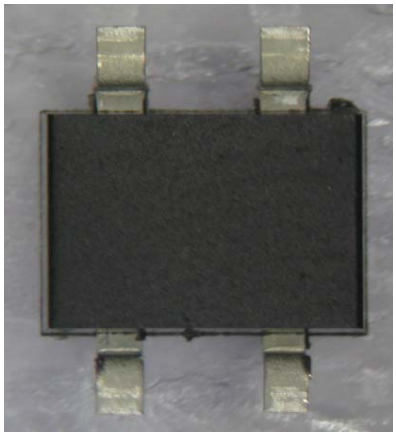
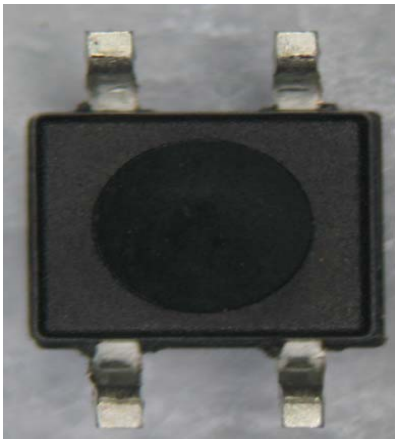
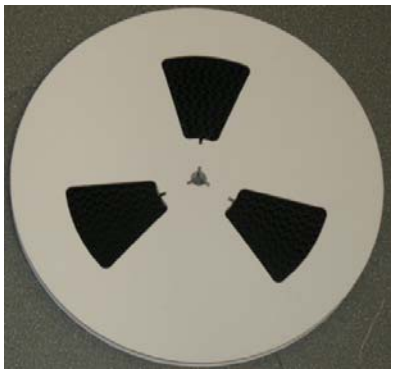
| Exterior comparison Chart | |
|---|---|
| Original | News |
|  Top View |  Top View |
|  Rear View |  Rear View |
|  Reel |  Reel |

Elektronische Bauelemente

# MD1S ~ MD7S

**Voltage 50V ~ 1000V**

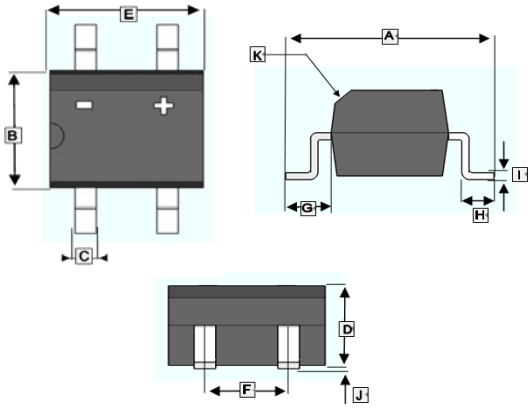
**0.8 Amp Surface Mount Bridge Rectifiers**

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Plastic material has UL flammability classification 94V-0
- High surge current capability
- Saves space on printed circuit boards
- Glass passivated structure

**MDS**




| REF. | Millimeter | | REF. | Millimeter | |
|---|---|---|---|---|---|
| | Min. | Max. | | Min. | Max. |
| A | - | 7.0 | G | 1.3 | 1.7 |
| B | 3.5 | 4.2 | H | 0.48 | 1.1 |
| C | 0.4 | 0.8 | I | 0.1 | 0.45 |
| D | 2.3 | 2.7 | J | 0.2(TYP.) | |
| E | 4.5 | 5.0 | K | 0.5*15° | |
| F | 2.3 | 2.7 | | | |

## MECHANICAL DATA

- Case: Molded plastic body over passivated junctions
- Polarity: As marked on body
- Mounting position: Any

## PACKAGE INFORMATION

| Package | MPQ | Leader Size |
|---|---|---|
| MDS | 3K | 13 inch |

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating 25°C ambient temperature unless otherwise specified. Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, de-rate current by 20%.)

| Parameter | | Symbol | Part Number | | | | | | | Unit |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | MD1S | MD2S | MD3S | MD4S | MD5S | MD6S | MD7S | |
| Maximum Recurrent Peak Reverse Voltage | | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Current | On glass-epoxy P.C.B. | $I_{F(AV)}$ | 0.5 | | | | | | | A |
| | On aluminum substrate | | 0.8 | | | | | | | |
| Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) | | $I_{FSM}$ | 30 | | | | | | | A |
| Maximum instantaneous forward voltage @ 0.4A per leg | | $V_F$ | 1 | | | | | | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | $T_A$=25°C | $I_R$ | 5 | | | | | | | μA |
| | $T_A$=125°C | | 500 | | | | | | | |
| Rating for fusing, 1ms≦t≦8.3ms | | $I^2T$ | 5 | | | | | | | $A^2S$ |
| Thermal resistance junction to ambient [1] | | $R_{\theta JA}$ | 85 | | | | | | | °C/W |
| Thermal resistance junction to lead [1] | | $R_{\theta JL}$ | 20 | | | | | | | °C/W |
| Operating and Storage Temperature range | | $T_J$, $T_{STG}$ | -55~150 | | | | | | | °C |

Note:
1. On glass epoxy P.C.B. mounted on 0.05x0.05"(1.3x1.3mm) pads
2. On aluminum substrate P.C.B. with area of 0.8"x0.8"(20x20mm) mounted on 0.05X0.05"(1.3X1.3mm) solder pad

Elektronische Bauelemente

# MD1S ~ MD7S

**Voltage 50V ~ 1000V**

**0.8 Amp Surface Mount Bridge Rectifiers**

## RATINGS AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

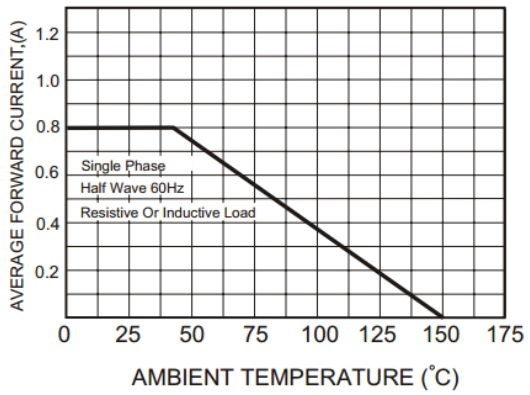



FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

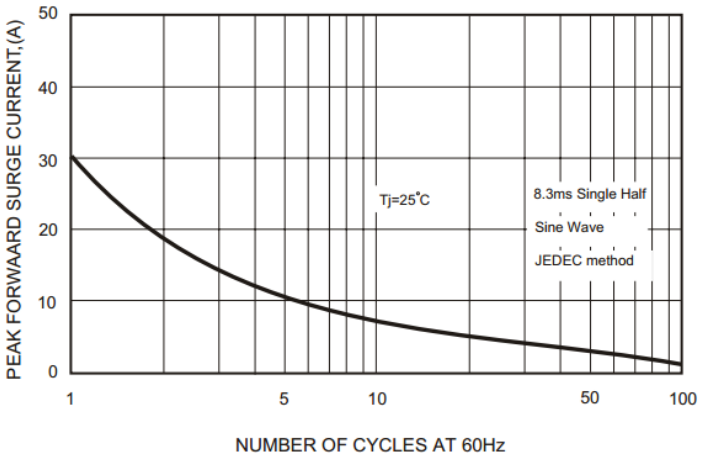



FIG.3-TYPICAL FORWARD CHARACTERISTICS

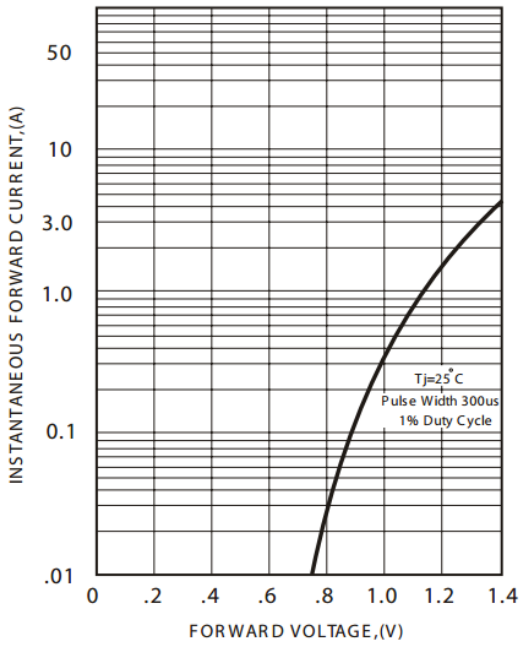
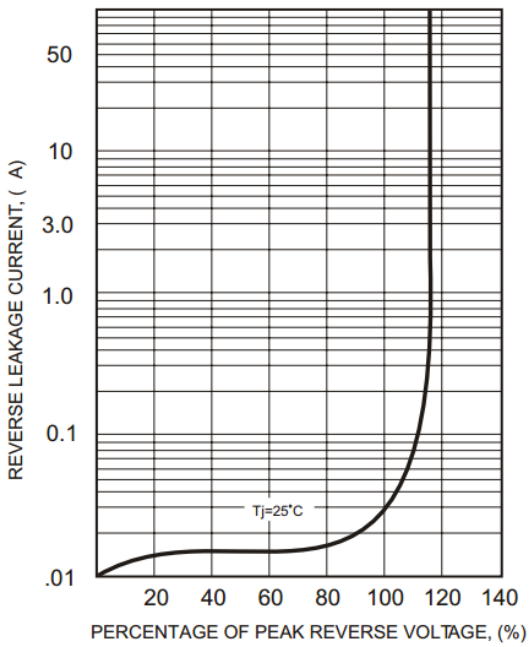



FIG.4-TYPICAL REVERSE CHARACTERISTICS

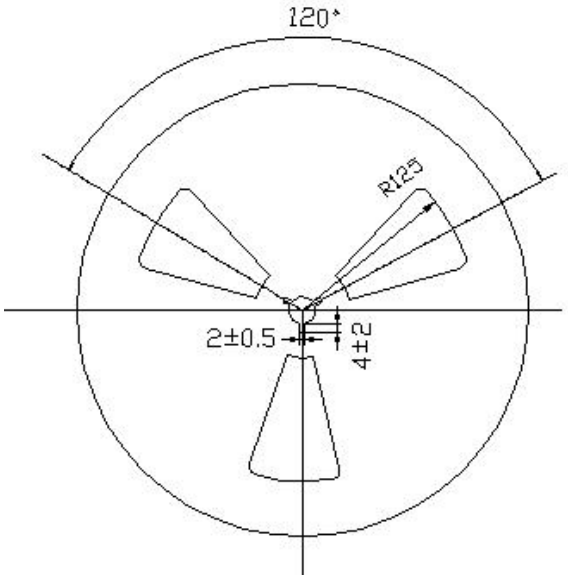


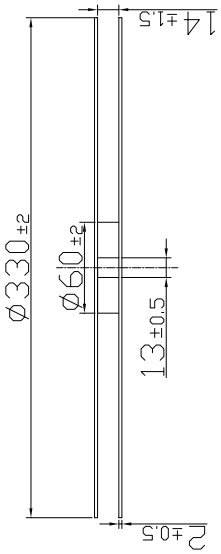
Elektronische Bauelemente

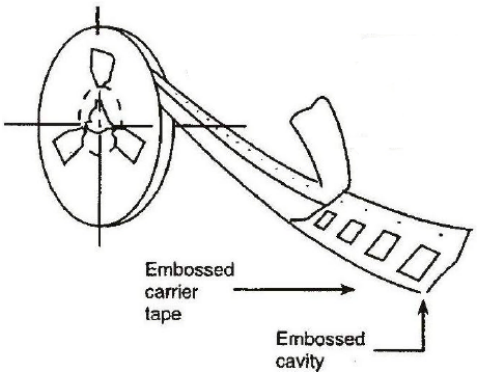
# Packaging Information

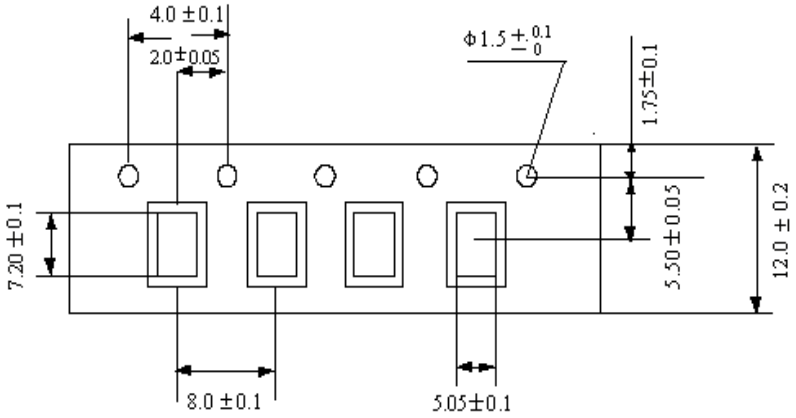
## Reel Taping Specifications
## Surface Mount Device

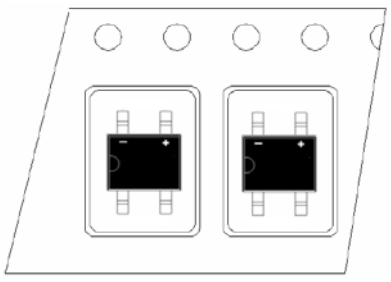
# MDS



**Unit: mm**

| Reel | Reel Size | Box | Box Size (mm) | Carton | Carton Size (mm) |
|---|---|---|---|---|---|
| 3,000pcs | 13 inch | 6,000 pcs | 350*350*40 | 48,000 | 350*350*350 |

# SeCoS Corporation

## Reliability Testing Summary Report

Date: 2013/05/31 Document No.: SG13 -04- 009

| Test Item | P/N | Test Condition | (LTPD) | Sample Numbers | Allow Fall Numbers | Fall Numbers | Result |
|---|---|---|---|---|---|---|---|
| HTRB High Temp Reverse Bias | MD5S | 100 ± 5℃, 80%VR, T = 1000hrs | | 77 | 0 | 0 | ACC |
| HTSL High Temperature Storage Life | MD5S | 150℃, T = 1000 hrs | | 77 | 0 | 0 | ACC |
| PCT Pressure Cooker Test | MD5S | 121℃, 29.7PSIG, 168 hrs | | 77 | 0 | 0 | ACC |
| TCT Temperature Cycle Test | MD5S | -55℃/30min, 150℃/30min, For 1000 Cycle | | 77 | 0 | 0 | ACC |
| THT High Temperature High Humidity Test | MD5S | 85 ± 2℃, RH=85±5%, 1000 hrs | | 77 | 0 | 0 | ACC |
| Solder Resistance DITY | MD5S | 270±5℃, 7Sec +2/−0 Sec | | 10 | 0 | 0 | ACC |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

**Judgment:**

■ **qualified** ☐ **unqualified**

**Testing Start Date:** 2013.04.01 **Testing End Date:** 2013.05.31

**Tester:** King Huang **Approval:** Peter Yang

# SeCoS Corporation

## Electrical Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 25℃
Test Date: 2013.04.01 ~ 2013.04.01
Test Standard : Specifications
Operator: Bruce Chang

Test Result: PASS

| No | VF (mV) | IR (uA) |
|---|---|---|
| 1 | 899mV | 0.07uA |
| 2 | 904mV | 0.10uA |
| 3 | 894mV | 0.04uA |
| 4 | 892mV | 0.05uA |
| 5 | 890mV | 0.07uA |
| 6 | 893mV | 0.05uA |
| 7 | 904mV | 0.05uA |
| 8 | 890mV | 0.06uA |
| 9 | 897mV | 0.10uA |
| 10 | 905mV | 0.09uA |
| 11 | 899mV | 0.03uA |
| 12 | 906mV | 0.05uA |
| 13 | 899mV | 0.04uA |
| 14 | 892mV | 0.04uA |
| 15 | 904mV | 0.07uA |
| 16 | 901mV | 0.06uA |
| 17 | 895mV | 0.07uA |
| 18 | 894mV | 0.09uA |
| 19 | 894mV | 0.05uA |
| 20 | 907mV | 0.09uA |
| 21 | 907mV | 0.07uA |
| 22 | 895mV | 0.03uA |
| 23 | 907mV | 0.09uA |
| 24 | 901mV | 0.02uA |
| 25 | 897mV | 0.08uA |
| 26 | 909mV | 0.02uA |
| 27 | 901mV | 0.08uA |
| 28 | 898mV | 0.05uA |
| 29 | 908mV | 0.07uA |
| 30 | 909mV | 0.06uA |
| 31 | 908mV | 0.08uA |
| 32 | 904mV | 0.05uA |
| 33 | 893mV | 0.03uA |
| 34 | 891mV | 0.07uA |
| 35 | 909mV | 0.04uA |
| 36 | 908mV | 0.03uA |
| 37 | 900mV | 0.06uA |
| 38 | 908mV | 0.06uA |
| 39 | 892mV | 0.03uA |
| 40 | 901mV | 0.08uA |
| 41 | 898mV | 0.08uA |

# SeCoS Corporation

## Electrical Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 25℃
Test Date: 2013.04.01 ~ 2013.04.01
Test Standard : Specifications
Operator: Bruce Chang

Test Result: PASS

| No | VF (mV) | IR (uA) |
|---|---|---|
| 42 | 891mV | 0.04uA |
| 43 | 909mV | 0.04uA |
| 44 | 906mV | 0.06uA |
| 45 | 895mV | 0.05uA |
| 46 | 907mV | 0.05uA |
| 47 | 894mV | 0.10uA |
| 48 | 891mV | 0.03uA |
| 49 | 894mV | 0.08uA |
| 50 | 908mV | 0.05uA |
| 51 | 902mV | 0.07uA |
| 52 | 899mV | 0.09uA |
| 53 | 891mV | 0.04uA |
| 54 | 891mV | 0.04uA |
| 55 | 899mV | 0.06uA |
| 56 | 891mV | 0.05uA |
| 57 | 903mV | 0.08uA |
| 58 | 894mV | 0.06uA |
| 59 | 901mV | 0.04uA |
| 60 | 895mV | 0.04uA |
| 61 | 901mV | 0.07uA |
| 62 | 898mV | 0.06uA |
| 63 | 891mV | 0.04uA |
| 64 | 901mV | 0.10uA |
| 65 | 906mV | 0.07uA |
| 66 | 906mV | 0.07uA |
| 67 | 906mV | 0.09uA |
| 68 | 896mV | 0.03uA |
| 69 | 905mV | 0.07uA |
| 70 | 903mV | 0.08uA |
| 71 | 892mV | 0.07uA |
| 72 | 902mV | 0.03uA |
| 73 | 891mV | 0.09uA |
| 74 | 910mV | 0.08uA |
| 75 | 909mV | 0.06uA |
| 76 | 900mV | 0.06uA |
| 77 | 908mV | 0.04uA |

Made By: King Huang

Approval: Peter Yang

# SeCoS Corporation

## High Temperature Reverse Bias Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 100 ± 5℃, 80%VR, T = 1000 hrs
Test Date: 2013.04.02 ~ 2013.05.14
Test Standard : JESD22 STANDER Method-A108
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 1 | 910mV | 0.07uA | 896mV | 0.07uA |
| 2 | 894mV | 0.08uA | 908mV | 0.07uA |
| 3 | 891mV | 0.08uA | 909mV | 0.05uA |
| 4 | 890mV | 0.10uA | 902mV | 0.06uA |
| 5 | 895mV | 0.03uA | 904mV | 0.10uA |
| 6 | 898mV | 0.04uA | 902mV | 0.05uA |
| 7 | 893mV | 0.07uA | 903mV | 0.04uA |
| 8 | 895mV | 0.06uA | 890mV | 0.10uA |
| 9 | 903mV | 0.02uA | 905mV | 0.10uA |
| 10 | 895mV | 0.03uA | 893mV | 0.03uA |
| 11 | 907mV | 0.04uA | 899mV | 0.07uA |
| 12 | 899mV | 0.08uA | 907mV | 0.04uA |
| 13 | 891mV | 0.10uA | 892mV | 0.10uA |
| 14 | 901mV | 0.08uA | 902mV | 0.03uA |
| 15 | 899mV | 0.07uA | 897mV | 0.09uA |
| 16 | 900mV | 0.10uA | 900mV | 0.09uA |
| 17 | 905mV | 0.04uA | 909mV | 0.09uA |
| 18 | 897mV | 0.08uA | 901mV | 0.09uA |
| 19 | 899mV | 0.03uA | 900mV | 0.06uA |
| 20 | 910mV | 0.06uA | 901mV | 0.05uA |
| 21 | 907mV | 0.10uA | 893mV | 0.04uA |
| 22 | 901mV | 0.09uA | 899mV | 0.09uA |
| 23 | 896mV | 0.08uA | 908mV | 0.06uA |
| 24 | 909mV | 0.04uA | 905mV | 0.09uA |
| 25 | 907mV | 0.06uA | 899mV | 0.06uA |
| 26 | 907mV | 0.09uA | 897mV | 0.03uA |
| 27 | 905mV | 0.05uA | 907mV | 0.05uA |
| 28 | 895mV | 0.08uA | 891mV | 0.07uA |
| 29 | 899mV | 0.08uA | 894mV | 0.04uA |
| 30 | 904mV | 0.08uA | 901mV | 0.10uA |
| 31 | 897mV | 0.04uA | 895mV | 0.07uA |
| 32 | 903mV | 0.07uA | 903mV | 0.03uA |
| 33 | 905mV | 0.06uA | 905mV | 0.08uA |
| 34 | 900mV | 0.09uA | 900mV | 0.02uA |
| 35 | 899mV | 0.03uA | 904mV | 0.07uA |
| 36 | 900mV | 0.08uA | 897mV | 0.03uA |
| 37 | 906mV | 0.02uA | 897mV | 0.03uA |
| 38 | 908mV | 0.02uA | 904mV | 0.09uA |
| 39 | 902mV | 0.04uA | 903mV | 0.10uA |

# SeCoS Corporation

## High Temperature Reverse Bias Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 100 ± 5℃, 80%VR, T = 1000 hrs
Test Date: 2013.04.02 ~ 2013.05.14
Test Standard : JESD22 STANDER Method-A108
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 40 | 907mV | 0.07uA | 899mV | 0.08uA |
| 41 | 897mV | 0.09uA | 906mV | 0.06uA |
| 42 | 906mV | 0.10uA | 900mV | 0.09uA |
| 43 | 907mV | 0.09uA | 900mV | 0.05uA |
| 44 | 908mV | 0.05uA | 894mV | 0.09uA |
| 45 | 898mV | 0.07uA | 896mV | 0.04uA |
| 46 | 897mV | 0.06uA | 908mV | 0.07uA |
| 47 | 903mV | 0.09uA | 896mV | 0.06uA |
| 48 | 902mV | 0.08uA | 897mV | 0.08uA |
| 49 | 896mV | 0.05uA | 907mV | 0.03uA |
| 50 | 900mV | 0.09uA | 896mV | 0.04uA |
| 51 | 898mV | 0.05uA | 891mV | 0.09uA |
| 52 | 909mV | 0.07uA | 903mV | 0.06uA |
| 53 | 906mV | 0.09uA | 906mV | 0.07uA |
| 54 | 904mV | 0.07uA | 896mV | 0.03uA |
| 55 | 892mV | 0.04uA | 902mV | 0.08uA |
| 56 | 902mV | 0.09uA | 908mV | 0.06uA |
| 57 | 896mV | 0.04uA | 900mV | 0.04uA |
| 58 | 894mV | 0.06uA | 906mV | 0.07uA |
| 59 | 903mV | 0.03uA | 902mV | 0.09uA |
| 60 | 903mV | 0.09uA | 901mV | 0.07uA |
| 61 | 900mV | 0.03uA | 894mV | 0.06uA |
| 62 | 901mV | 0.03uA | 898mV | 0.05uA |
| 63 | 905mV | 0.02uA | 895mV | 0.03uA |
| 64 | 904mV | 0.07uA | 897mV | 0.05uA |
| 65 | 900mV | 0.08uA | 904mV | 0.05uA |
| 66 | 909mV | 0.09uA | 904mV | 0.06uA |
| 67 | 891mV | 0.10uA | 904mV | 0.09uA |
| 68 | 903mV | 0.09uA | 891mV | 0.10uA |
| 69 | 899mV | 0.09uA | 897mV | 0.10uA |
| 70 | 895mV | 0.05uA | 903mV | 0.06uA |
| 71 | 903mV | 0.09uA | 907mV | 0.08uA |
| 72 | 907mV | 0.10uA | 905mV | 0.05uA |
| 73 | 902mV | 0.04uA | 902mV | 0.08uA |
| 74 | 891mV | 0.03uA | 896mV | 0.09uA |
| 75 | 894mV | 0.04uA | 891mV | 0.10uA |
| 76 | 891mV | 0.06uA | 895mV | 0.05uA |
| 77 | 905mV | 0.08uA | 900mV | 0.07uA |

Made By: King Huang  Approval: Peter Yang

# SeCoS Corporation

## High Temperature Storage Life Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 150℃, 1000Hrs
Test Date: 2013.04.02 ~ 2013.05.14
Test Standard : JESD22 STANDER Method-A103
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 1 | 893mV | 0.06uA | 897mV | 0.05uA |
| 2 | 902mV | 0.05uA | 908mV | 0.07uA |
| 3 | 899mV | 0.02uA | 895mV | 0.07uA |
| 4 | 890mV | 0.04uA | 905mV | 0.05uA |
| 5 | 910mV | 0.08uA | 902mV | 0.07uA |
| 6 | 895mV | 0.08uA | 897mV | 0.06uA |
| 7 | 891mV | 0.10uA | 897mV | 0.04uA |
| 8 | 895mV | 0.10uA | 902mV | 0.03uA |
| 9 | 907mV | 0.07uA | 906mV | 0.08uA |
| 10 | 905mV | 0.07uA | 900mV | 0.04uA |
| 11 | 903mV | 0.09uA | 900mV | 0.03uA |
| 12 | 903mV | 0.03uA | 908mV | 0.09uA |
| 13 | 904mV | 0.06uA | 895mV | 0.09uA |
| 14 | 910mV | 0.06uA | 898mV | 0.06uA |
| 15 | 905mV | 0.09uA | 908mV | 0.08uA |
| 16 | 898mV | 0.09uA | 903mV | 0.05uA |
| 17 | 905mV | 0.08uA | 892mV | 0.10uA |
| 18 | 902mV | 0.08uA | 908mV | 0.07uA |
| 19 | 907mV | 0.05uA | 904mV | 0.08uA |
| 20 | 907mV | 0.04uA | 897mV | 0.05uA |
| 21 | 901mV | 0.08uA | 892mV | 0.04uA |
| 22 | 892mV | 0.03uA | 906mV | 0.06uA |
| 23 | 892mV | 0.04uA | 897mV | 0.09uA |
| 24 | 903mV | 0.03uA | 900mV | 0.06uA |
| 25 | 898mV | 0.07uA | 903mV | 0.04uA |
| 26 | 894mV | 0.04uA | 893mV | 0.05uA |
| 27 | 896mV | 0.10uA | 897mV | 0.09uA |
| 28 | 902mV | 0.04uA | 896mV | 0.09uA |
| 29 | 902mV | 0.03uA | 903mV | 0.06uA |
| 30 | 908mV | 0.03uA | 897mV | 0.06uA |
| 31 | 900mV | 0.05uA | 904mV | 0.02uA |
| 32 | 907mV | 0.03uA | 890mV | 0.09uA |
| 33 | 906mV | 0.09uA | 903mV | 0.04uA |
| 34 | 901mV | 0.06uA | 903mV | 0.09uA |
| 35 | 897mV | 0.03uA | 901mV | 0.09uA |
| 36 | 893mV | 0.07uA | 893mV | 0.08uA |
| 37 | 900mV | 0.09uA | 891mV | 0.08uA |
| 38 | 905mV | 0.04uA | 893mV | 0.08uA |
| 39 | 892mV | 0.04uA | 906mV | 0.10uA |

# SeCoS Corporation

## High Temperature Storage Life Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 150℃, 1000Hrs
Test Date: 2013.04.02 ~ 2013.05.14
Test Standard : JESD22 STANDER Method-A103
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 40 | 903mV | 0.04uA | 899mV | 0.06uA |
| 41 | 901mV | 0.07uA | 900mV | 0.06uA |
| 42 | 898mV | 0.06uA | 899mV | 0.07uA |
| 43 | 905mV | 0.09uA | 909mV | 0.06uA |
| 44 | 896mV | 0.09uA | 903mV | 0.04uA |
| 45 | 907mV | 0.03uA | 893mV | 0.02uA |
| 46 | 891mV | 0.05uA | 904mV | 0.10uA |
| 47 | 900mV | 0.07uA | 897mV | 0.05uA |
| 48 | 903mV | 0.05uA | 900mV | 0.08uA |
| 49 | 895mV | 0.08uA | 906mV | 0.08uA |
| 50 | 908mV | 0.05uA | 897mV | 0.08uA |
| 51 | 892mV | 0.09uA | 905mV | 0.10uA |
| 52 | 910mV | 0.08uA | 899mV | 0.10uA |
| 53 | 905mV | 0.09uA | 895mV | 0.08uA |
| 54 | 898mV | 0.02uA | 894mV | 0.10uA |
| 55 | 895mV | 0.03uA | 893mV | 0.08uA |
| 56 | 896mV | 0.04uA | 894mV | 0.10uA |
| 57 | 906mV | 0.05uA | 891mV | 0.03uA |
| 58 | 890mV | 0.03uA | 893mV | 0.05uA |
| 59 | 895mV | 0.08uA | 899mV | 0.07uA |
| 60 | 897mV | 0.07uA | 903mV | 0.02uA |
| 61 | 892mV | 0.10uA | 906mV | 0.09uA |
| 62 | 907mV | 0.09uA | 897mV | 0.10uA |
| 63 | 900mV | 0.09uA | 892mV | 0.05uA |
| 64 | 904mV | 0.05uA | 900mV | 0.08uA |
| 65 | 902mV | 0.07uA | 893mV | 0.05uA |
| 66 | 899mV | 0.06uA | 905mV | 0.08uA |
| 67 | 907mV | 0.10uA | 902mV | 0.06uA |
| 68 | 904mV | 0.09uA | 896mV | 0.10uA |
| 69 | 898mV | 0.05uA | 897mV | 0.07uA |
| 70 | 892mV | 0.09uA | 901mV | 0.08uA |
| 71 | 898mV | 0.02uA | 907mV | 0.03uA |
| 72 | 904mV | 0.07uA | 896mV | 0.07uA |
| 73 | 899mV | 0.04uA | 895mV | 0.04uA |
| 74 | 909mV | 0.07uA | 899mV | 0.07uA |
| 75 | 907mV | 0.07uA | 899mV | 0.08uA |
| 76 | 903mV | 0.10uA | 896mV | 0.06uA |
| 77 | 896mV | 0.09uA | 902mV | 0.09uA |

Made By: King Huang  Approval: Peter Yang

# SeCoS Corporation

## Pressure Cooker Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2013.04.08 ~ 2013.04.16
Test Standard : JESD22 STANDER Method-A102
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 1 | 908mV | 0.05uA | 907mV | 0.10uA |
| 2 | 892mV | 0.07uA | 908mV | 0.04uA |
| 3 | 896mV | 0.06uA | 898mV | 0.07uA |
| 4 | 900mV | 0.05uA | 899mV | 0.03uA |
| 5 | 906mV | 0.09uA | 906mV | 0.07uA |
| 6 | 892mV | 0.03uA | 897mV | 0.08uA |
| 7 | 900mV | 0.08uA | 900mV | 0.03uA |
| 8 | 894mV | 0.02uA | 894mV | 0.09uA |
| 9 | 899mV | 0.03uA | 905mV | 0.08uA |
| 10 | 905mV | 0.03uA | 891mV | 0.07uA |
| 11 | 896mV | 0.04uA | 899mV | 0.08uA |
| 12 | 898mV | 0.08uA | 892mV | 0.07uA |
| 13 | 908mV | 0.03uA | 904mV | 0.07uA |
| 14 | 905mV | 0.03uA | 897mV | 0.10uA |
| 15 | 909mV | 0.08uA | 892mV | 0.05uA |
| 16 | 896mV | 0.05uA | 895mV | 0.04uA |
| 17 | 899mV | 0.02uA | 902mV | 0.09uA |
| 18 | 892mV | 0.10uA | 904mV | 0.04uA |
| 19 | 901mV | 0.04uA | 892mV | 0.08uA |
| 20 | 909mV | 0.09uA | 901mV | 0.04uA |
| 21 | 891mV | 0.04uA | 894mV | 0.03uA |
| 22 | 897mV | 0.07uA | 893mV | 0.08uA |
| 23 | 891mV | 0.06uA | 896mV | 0.08uA |
| 24 | 899mV | 0.08uA | 903mV | 0.03uA |
| 25 | 898mV | 0.08uA | 899mV | 0.04uA |
| 26 | 894mV | 0.03uA | 898mV | 0.10uA |
| 27 | 895mV | 0.05uA | 902mV | 0.04uA |
| 28 | 906mV | 0.07uA | 893mV | 0.06uA |
| 29 | 901mV | 0.05uA | 893mV | 0.06uA |
| 30 | 906mV | 0.06uA | 909mV | 0.03uA |
| 31 | 908mV | 0.09uA | 902mV | 0.09uA |
| 32 | 906mV | 0.03uA | 890mV | 0.05uA |
| 33 | 900mV | 0.05uA | 907mV | 0.09uA |
| 34 | 893mV | 0.07uA | 895mV | 0.07uA |
| 35 | 904mV | 0.04uA | 897mV | 0.02uA |
| 36 | 898mV | 0.09uA | 891mV | 0.07uA |
| 37 | 890mV | 0.04uA | 905mV | 0.08uA |
| 38 | 899mV | 0.07uA | 901mV | 0.05uA |
| 39 | 901mV | 0.03uA | 898mV | 0.09uA |
| 40 | 891mV | 0.09uA | 908mV | 0.08uA |

# SeCoS Corporation

## Pressure Cooker Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 121℃, 100%RH, 29.7PSIG, 168Hrs
Test Date: 2013.04.08 ~ 2013.04.16
Test Standard : JESD22 STANDER Method-A102
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 41 | 891mV | 0.05uA | 895mV | 0.04uA |
| 42 | 903mV | 0.03uA | 892mV | 0.08uA |
| 43 | 891mV | 0.06uA | 903mV | 0.08uA |
| 44 | 891mV | 0.07uA | 903mV | 0.09uA |
| 45 | 897mV | 0.03uA | 908mV | 0.03uA |
| 46 | 894mV | 0.03uA | 897mV | 0.07uA |
| 47 | 908mV | 0.05uA | 901mV | 0.05uA |
| 48 | 900mV | 0.02uA | 899mV | 0.09uA |
| 49 | 907mV | 0.08uA | 910mV | 0.02uA |
| 50 | 896mV | 0.06uA | 900mV | 0.04uA |
| 51 | 893mV | 0.02uA | 898mV | 0.10uA |
| 52 | 899mV | 0.09uA | 895mV | 0.02uA |
| 53 | 905mV | 0.05uA | 906mV | 0.03uA |
| 54 | 907mV | 0.05uA | 897mV | 0.06uA |
| 55 | 894mV | 0.08uA | 909mV | 0.06uA |
| 56 | 900mV | 0.08uA | 893mV | 0.03uA |
| 57 | 892mV | 0.07uA | 897mV | 0.06uA |
| 58 | 897mV | 0.09uA | 903mV | 0.08uA |
| 59 | 905mV | 0.07uA | 902mV | 0.04uA |
| 60 | 904mV | 0.04uA | 898mV | 0.04uA |
| 61 | 902mV | 0.06uA | 895mV | 0.07uA |
| 62 | 901mV | 0.08uA | 896mV | 0.08uA |
| 63 | 909mV | 0.03uA | 903mV | 0.09uA |
| 64 | 894mV | 0.05uA | 904mV | 0.06uA |
| 65 | 909mV | 0.08uA | 893mV | 0.05uA |
| 66 | 900mV | 0.09uA | 895mV | 0.05uA |
| 67 | 903mV | 0.04uA | 899mV | 0.07uA |
| 68 | 890mV | 0.10uA | 906mV | 0.07uA |
| 69 | 907mV | 0.08uA | 904mV | 0.06uA |
| 70 | 898mV | 0.02uA | 905mV | 0.02uA |
| 71 | 902mV | 0.08uA | 908mV | 0.07uA |
| 72 | 896mV | 0.09uA | 894mV | 0.05uA |
| 73 | 892mV | 0.08uA | 910mV | 0.07uA |
| 74 | 908mV | 0.06uA | 893mV | 0.08uA |
| 75 | 892mV | 0.10uA | 894mV | 0.03uA |
| 76 | 906mV | 0.08uA | 896mV | 0.05uA |
| 77 | 900mV | 0.03uA | 908mV | 0.10uA |

Made By: King Huang  Approval: Peter Yang

# SeCoS Corporation

## Temperature Cycle Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2013.04.05 ~ 2013.05.28
Test Standard : JESD22 STANDER Method-A104
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 1 | 896mV | 0.05uA | 903mV | 0.03uA |
| 2 | 895mV | 0.10uA | 904mV | 0.05uA |
| 3 | 904mV | 0.07uA | 903mV | 0.05uA |
| 4 | 893mV | 0.03uA | 906mV | 0.08uA |
| 5 | 897mV | 0.06uA | 891mV | 0.02uA |
| 6 | 909mV | 0.02uA | 902mV | 0.10uA |
| 7 | 891mV | 0.05uA | 900mV | 0.02uA |
| 8 | 894mV | 0.04uA | 907mV | 0.07uA |
| 9 | 908mV | 0.02uA | 907mV | 0.09uA |
| 10 | 895mV | 0.10uA | 902mV | 0.04uA |
| 11 | 893mV | 0.04uA | 908mV | 0.04uA |
| 12 | 902mV | 0.04uA | 900mV | 0.06uA |
| 13 | 908mV | 0.07uA | 890mV | 0.04uA |
| 14 | 896mV | 0.03uA | 897mV | 0.10uA |
| 15 | 902mV | 0.07uA | 897mV | 0.04uA |
| 16 | 902mV | 0.07uA | 895mV | 0.04uA |
| 17 | 903mV | 0.06uA | 909mV | 0.06uA |
| 18 | 890mV | 0.09uA | 897mV | 0.06uA |
| 19 | 899mV | 0.02uA | 891mV | 0.06uA |
| 20 | 907mV | 0.08uA | 897mV | 0.09uA |
| 21 | 906mV | 0.07uA | 910mV | 0.04uA |
| 22 | 894mV | 0.09uA | 904mV | 0.03uA |
| 23 | 907mV | 0.04uA | 892mV | 0.05uA |
| 24 | 903mV | 0.09uA | 899mV | 0.05uA |
| 25 | 906mV | 0.03uA | 907mV | 0.04uA |
| 26 | 898mV | 0.03uA | 907mV | 0.06uA |
| 27 | 906mV | 0.06uA | 893mV | 0.08uA |
| 28 | 891mV | 0.08uA | 896mV | 0.06uA |
| 29 | 904mV | 0.05uA | 900mV | 0.06uA |
| 30 | 895mV | 0.04uA | 890mV | 0.09uA |
| 31 | 898mV | 0.06uA | 893mV | 0.05uA |
| 32 | 890mV | 0.07uA | 901mV | 0.09uA |
| 33 | 904mV | 0.02uA | 898mV | 0.08uA |
| 34 | 904mV | 0.09uA | 904mV | 0.02uA |
| 35 | 895mV | 0.10uA | 890mV | 0.04uA |
| 36 | 896mV | 0.03uA | 897mV | 0.09uA |
| 37 | 895mV | 0.08uA | 905mV | 0.07uA |
| 38 | 909mV | 0.06uA | 902mV | 0.05uA |
| 39 | 907mV | 0.03uA | 904mV | 0.03uA |

# SeCoS Corporation

## Temperature Cycle Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2013.04.05 ~ 2013.05.28
Test Standard : JESD22 STANDER Method-A104
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 40 | 897mV | 0.06uA | 890mV | 0.02uA |
| 41 | 903mV | 0.05uA | 890mV | 0.07uA |
| 42 | 904mV | 0.04uA | 893mV | 0.07uA |
| 43 | 904mV | 0.07uA | 897mV | 0.03uA |
| 44 | 893mV | 0.08uA | 902mV | 0.05uA |
| 45 | 908mV | 0.05uA | 892mV | 0.08uA |
| 46 | 898mV | 0.07uA | 899mV | 0.04uA |
| 47 | 894mV | 0.10uA | 905mV | 0.04uA |
| 48 | 908mV | 0.05uA | 906mV | 0.04uA |
| 49 | 906mV | 0.06uA | 902mV | 0.08uA |
| 50 | 893mV | 0.09uA | 903mV | 0.08uA |
| 51 | 894mV | 0.09uA | 901mV | 0.09uA |
| 52 | 897mV | 0.06uA | 907mV | 0.06uA |
| 53 | 896mV | 0.06uA | 898mV | 0.05uA |
| 54 | 894mV | 0.06uA | 895mV | 0.06uA |
| 55 | 902mV | 0.03uA | 895mV | 0.04uA |
| 56 | 894mV | 0.02uA | 909mV | 0.08uA |
| 57 | 905mV | 0.05uA | 904mV | 0.04uA |
| 58 | 896mV | 0.05uA | 904mV | 0.03uA |
| 59 | 898mV | 0.05uA | 892mV | 0.03uA |
| 60 | 906mV | 0.10uA | 899mV | 0.09uA |
| 61 | 899mV | 0.06uA | 901mV | 0.08uA |
| 62 | 898mV | 0.03uA | 900mV | 0.03uA |
| 63 | 894mV | 0.02uA | 893mV | 0.04uA |
| 64 | 894mV | 0.04uA | 902mV | 0.09uA |
| 65 | 897mV | 0.09uA | 894mV | 0.08uA |
| 66 | 910mV | 0.04uA | 902mV | 0.03uA |
| 67 | 901mV | 0.05uA | 904mV | 0.09uA |
| 68 | 900mV | 0.05uA | 893mV | 0.06uA |
| 69 | 898mV | 0.07uA | 906mV | 0.04uA |
| 70 | 910mV | 0.07uA | 890mV | 0.04uA |
| 71 | 903mV | 0.09uA | 902mV | 0.09uA |
| 72 | 897mV | 0.04uA | 906mV | 0.02uA |
| 73 | 900mV | 0.10uA | 910mV | 0.07uA |
| 74 | 902mV | 0.08uA | 893mV | 0.06uA |
| 75 | 907mV | 0.07uA | 905mV | 0.05uA |
| 76 | 910mV | 0.03uA | 899mV | 0.04uA |
| 77 | 891mV | 0.04uA | 897mV | 0.03uA |

Made By: King Huang  Approval: Peter Yang

# SeCoS Corporation

## High Temperature High Humidity Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2013.04.10 ~ 2013.05.22
Test Standard : JESD22 STANDER Method-A101
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 1 | 900mV | 0.07uA | 897mV | 0.09uA |
| 2 | 893mV | 0.08uA | 898mV | 0.03uA |
| 3 | 910mV | 0.05uA | 904mV | 0.08uA |
| 4 | 906mV | 0.05uA | 896mV | 0.04uA |
| 5 | 900mV | 0.02uA | 899mV | 0.10uA |
| 6 | 897mV | 0.08uA | 909mV | 0.04uA |
| 7 | 905mV | 0.03uA | 892mV | 0.05uA |
| 8 | 897mV | 0.03uA | 907mV | 0.07uA |
| 9 | 894mV | 0.08uA | 902mV | 0.06uA |
| 10 | 897mV | 0.04uA | 904mV | 0.10uA |
| 11 | 895mV | 0.10uA | 902mV | 0.07uA |
| 12 | 899mV | 0.06uA | 891mV | 0.08uA |
| 13 | 903mV | 0.09uA | 908mV | 0.07uA |
| 14 | 895mV | 0.10uA | 897mV | 0.07uA |
| 15 | 895mV | 0.09uA | 897mV | 0.02uA |
| 16 | 903mV | 0.04uA | 891mV | 0.03uA |
| 17 | 908mV | 0.08uA | 902mV | 0.03uA |
| 18 | 901mV | 0.08uA | 902mV | 0.07uA |
| 19 | 910mV | 0.03uA | 903mV | 0.06uA |
| 20 | 903mV | 0.04uA | 899mV | 0.06uA |
| 21 | 904mV | 0.09uA | 902mV | 0.03uA |
| 22 | 894mV | 0.03uA | 899mV | 0.10uA |
| 23 | 893mV | 0.04uA | 895mV | 0.08uA |
| 24 | 908mV | 0.08uA | 899mV | 0.06uA |
| 25 | 909mV | 0.10uA | 901mV | 0.03uA |
| 26 | 903mV | 0.06uA | 892mV | 0.05uA |
| 27 | 895mV | 0.09uA | 907mV | 0.08uA |
| 28 | 904mV | 0.09uA | 908mV | 0.08uA |
| 29 | 901mV | 0.04uA | 906mV | 0.06uA |
| 30 | 897mV | 0.07uA | 903mV | 0.04uA |
| 31 | 897mV | 0.04uA | 895mV | 0.05uA |
| 32 | 907mV | 0.09uA | 906mV | 0.02uA |
| 33 | 903mV | 0.08uA | 909mV | 0.08uA |
| 34 | 899mV | 0.05uA | 901mV | 0.09uA |
| 35 | 895mV | 0.05uA | 891mV | 0.04uA |
| 36 | 909mV | 0.07uA | 898mV | 0.10uA |
| 37 | 902mV | 0.07uA | 908mV | 0.02uA |
| 38 | 900mV | 0.09uA | 900mV | 0.05uA |
| 39 | 891mV | 0.06uA | 895mV | 0.05uA |
| 40 | 910mV | 0.03uA | 897mV | 0.04uA |

# SeCoS Corporation

## High Temperature High Humidity Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 85±2℃, 85±5%RH, 1000Hrs
Test Date: 2013.04.10 ~ 2013.05.22
Test Standard : JESD22 STANDER Method-A101
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 41 | 909mV | 0.04uA | 902mV | 0.10uA |
| 42 | 900mV | 0.02uA | 908mV | 0.04uA |
| 43 | 895mV | 0.05uA | 900mV | 0.04uA |
| 44 | 904mV | 0.09uA | 910mV | 0.05uA |
| 45 | 897mV | 0.05uA | 905mV | 0.08uA |
| 46 | 893mV | 0.08uA | 893mV | 0.10uA |
| 47 | 893mV | 0.05uA | 901mV | 0.03uA |
| 48 | 893mV | 0.06uA | 904mV | 0.03uA |
| 49 | 895mV | 0.02uA | 894mV | 0.03uA |
| 50 | 897mV | 0.07uA | 905mV | 0.06uA |
| 51 | 905mV | 0.04uA | 891mV | 0.04uA |
| 52 | 894mV | 0.05uA | 905mV | 0.02uA |
| 53 | 908mV | 0.03uA | 905mV | 0.06uA |
| 54 | 908mV | 0.03uA | 891mV | 0.09uA |
| 55 | 904mV | 0.06uA | 906mV | 0.07uA |
| 56 | 899mV | 0.06uA | 909mV | 0.06uA |
| 57 | 906mV | 0.10uA | 903mV | 0.09uA |
| 58 | 898mV | 0.02uA | 893mV | 0.10uA |
| 59 | 907mV | 0.07uA | 908mV | 0.03uA |
| 60 | 897mV | 0.02uA | 902mV | 0.06uA |
| 61 | 903mV | 0.06uA | 895mV | 0.03uA |
| 62 | 893mV | 0.09uA | 904mV | 0.06uA |
| 63 | 906mV | 0.08uA | 898mV | 0.09uA |
| 64 | 907mV | 0.07uA | 905mV | 0.09uA |
| 65 | 904mV | 0.03uA | 903mV | 0.10uA |
| 66 | 898mV | 0.08uA | 910mV | 0.04uA |
| 67 | 904mV | 0.03uA | 894mV | 0.08uA |
| 68 | 908mV | 0.10uA | 894mV | 0.07uA |
| 69 | 899mV | 0.09uA | 892mV | 0.09uA |
| 70 | 896mV | 0.06uA | 908mV | 0.05uA |
| 71 | 900mV | 0.07uA | 909mV | 0.06uA |
| 72 | 905mV | 0.03uA | 907mV | 0.07uA |
| 73 | 906mV | 0.02uA | 899mV | 0.10uA |
| 74 | 898mV | 0.09uA | 897mV | 0.09uA |
| 75 | 899mV | 0.04uA | 906mV | 0.07uA |
| 76 | 900mV | 0.08uA | 906mV | 0.06uA |
| 77 | 904mV | 0.03uA | 895mV | 0.09uA |

Made By: King Huang  Approval: Peter Yang

# SeCoS Corporation

## Solderability Test Data

Report No : T130402-009
Part No : MD5S
Test Equipment: JUNO Test System DTS-1000
Test Condition : VF<1.0V@IF=0.4A, IR<5uA@VR=600V
Test Condition: 270℃ ± 5℃, 7 Sec ± 2Sec
Test Date: 2013.05.23 ~ 2013.05.24
Test Standard : JESD22 STANDER Method-A106
Operator: Bruce Chang

Test Result: PASS

| | Before | | After | |
|---|---|---|---|---|
| No | VF (mV) | IR (uA) | VF (mV) | IR (uA) |
| 1 | 906mV | 0.04uA | 904mV | 0.03uA |
| 2 | 892mV | 0.02uA | 894mV | 0.05uA |
| 3 | 904mV | 0.05uA | 904mV | 0.03uA |
| 4 | 898mV | 0.07uA | 900mV | 0.07uA |
| 5 | 893mV | 0.06uA | 902mV | 0.09uA |
| 6 | 899mV | 0.10uA | 905mV | 0.05uA |
| 7 | 892mV | 0.09uA | 904mV | 0.05uA |
| 8 | 898mV | 0.06uA | 891mV | 0.07uA |
| 9 | 909mV | 0.03uA | 893mV | 0.02uA |
| 10 | 901mV | 0.03uA | 898mV | 0.07uA |

Made By: King Huang  Approval: Peter Yang