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## **Product/Process Change Notification**

PCN#	Effective Date		Issue Date				
2017-05-25C-04	2017/8/25		2017/5/25				
PCN Classification		Product Category					
Major		Mosfet					
	Sı	ubject					
Production process change from	n lead free to	halogen free.					
	Affected	l Product(s)					
SOT-723 Package of Mosfet, in	nclouding SSN	13043. SSN3134ŀ	K. SSN3139K and SSN3541.				
	Description	of Change(s)					
To meet EU environment requir	rement, we imp	olement halogen	free to our products.				
	Content	of Change(s)					
Adding "-C" to each part number.							
Impact(s)							
N/A							
Attachment(s)							
SGS report. Reliability report.							

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

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



# **Test Report**

號碼(No.): KA/2016/61540 日期(Date): 2016/07/04 頁數(Page): 1 of 21

義典(無錫義典)科技股份有限公司

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NO. 130, LIOUAN, LIOUAN LI, JIALI DIST., TAINAN CITY, TAIWAN

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

### 以下測試樣品係由客户送樣,且由客户聲稱並經客户確認如下

(The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description)

樣品型號(Style/Item No.)

收件日期(Sample Receiving Date)

測試期間(Testing Period)

送樣廠商(Sample Submitted By)

: EXPOXY MOLDING COMPOUND

: ELER-8-SERIES

: 2016/06/27

: 2016/06/27 TO 2016/07/04

\_\_\_\_\_\_

: 義典科技股份有限公司 (E'DALE (WUXI-E'DALE) TECHNOLOGY CO., LTD.)

測試需求(Test Requested)

: 依據客户要求, 參考RoHS 2011/65/EU Annex II 指令進行鎘, 鉛, 汞, 六價 鉻, 多溴聯苯, 多溴聯苯醚測試. (As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs contents in the submitted sample.)

測試結果(Test Results)

結論(Conclusion)

: 請見下一頁 (Please refer to next pages).

: 根據客户所提供的樣品,其鎬,鉛,汞,六價鉻,多溴聯苯,多溴聯苯醚的 測試結果符合RoHS指令2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on submitted samples, the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)

Ray Chang Ph.D. / Manag

Signed for and on behalf of **SGS Taiwan Limited** 

Chemical Laboratory-Kaohsiung

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號碼(No.): KA/2016/61540 日期(Date): 2016/07/04 頁數(Page): 2 of 21

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### 測試結果(Test Results)

測試部位(PART NAME) NO.1 : 黑色 EXPOXY MOLDING COMPOUND (BLACK EXPOXY MOLDING COMPOUND)

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1	法規 限値 (Limit)
鎬 / Cadmium (Cd)	mg/kg	参考IEC 62321-5: 2013方法, 以感應 耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.	100
鋁 / Lead (Pb)	mg/kg	参考IEC 62321-5: 2013方法,以感應 耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-5: 2013 and performed by ICP-AES.	2	n.d.	1000
汞 / Mercury (Hg)	mg/kg	參考IEC 62321-4: 2013方法,以感應 耦合電漿原子發射光譜儀檢測. / With reference to IEC 62321-4: 2013 and performed by ICP-AES.	2	n.d.	1000
六價絡 / Hexavalent Chromium Cr(VI) by alkaline extraction	mg/kg	参考IEC 62321: 2008方法,用UV-VIS 檢測. / With reference to IEC 62321: 2008 and performed by UV- VIS.	2	n.d.	1000
六價络 / Hexavalent Chromium Cr(VI)(#2)	µg/cm <sup>2</sup>	參考IEC 62321-7-1:2015,以UV-VIS檢測./With reference to IEC 62321-7-1:2015 and performed by by UV-VIS.	0.10	n.d.	-

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號碼(No.): KA/2016/61540 日期(Date): 2016/07/04 頁數(Page): 3 of 21

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1	法規 限値 (Limit)
多溴聯苯總和 / Sum of PBBs			-	n.d.	1000
一溴聯苯 / Monobromobiphenyl			5	n.d.	-
二溴聯苯 / Dibromobiphenyl			5	n.d.	-
三溴聯苯 / Tribromobiphenyl		A 7 100 co201 c 2015 + 2 以 5 h	5	n.d.	-
四溴聯苯 / Tetrabromobiphenyl		參考IEC 62321-6: 2015方法, 以氣相	5	n.d.	-
五溴聯苯 / Pentabromobiphenyl	mg/kg	層析儀/質譜儀檢測. / With reference to IEC 62321-6: 2015 and	5	n.d.	-
六溴聯苯 / Hexabromobiphenyl		performed by GC/MS.	5	n.d.	-
七溴聯苯 / Heptabromobiphenyl		performed by GC/MS.	5	n.d.	-
八溴聯苯 / Octabromobiphenyl			5	n.d.	-
九溴聯苯 / Nonabromobiphenyl			5	n.d.	-
十溴聯苯 / Decabromobiphenyl			5	n.d.	-
多溴聯苯醚總和 / Sum of PBDEs			ı	n.d.	1000
一溴聯苯醚 / Monobromodiphenyl ether			5	n.d.	-
二溴聯苯醚 / Dibromodiphenyl ether			5	n.d.	-
三溴聯苯醚 / Tribromodiphenyl ether		A 4 IEC (0001 C 0015 + 3 以 5 扫	5	n.d.	-
四溴聯苯醚 / Tetrabromodiphenyl ether		參考IEC 62321-6: 2015方法,以氣相 層析儀/質譜儀檢測./With	5	n.d.	-
五溴聯苯醚 / Pentabromodiphenyl ether	mg/kg	reference to IEC 62321-6: 2015 and	5	n.d.	-
六溴聯苯醚 / Hexabromodiphenyl ether		performed by GC/MS.	5	n.d.	-
七溴聯苯醚 / Heptabromodiphenyl ether		performed by GC/MS.	5	n.d.	-
八溴聯苯醚 / Octabromodiphenyl ether			5	n.d.	-
九溴聯苯醚 / Nonabromodiphenyl ether			5	n.d.	-
十溴聯苯醚 / Decabromodiphenyl ether			5	n.d.	-
种 / Arsenic (As)	mg/kg	參考US EPA 3052方法,用感應藕合電 漿原子發射光譜儀 (ICP-AES) 檢測砷 含量. / With reference to US EPA Method 3052 for Arsenic Content. Analysis was performed by ICP-AES.	2	n.d.	-

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號碼(No.): KA/2016/61540 日期(Date): 2016/07/04 頁數(Page): 4 of 21

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測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1	法規 限値 (Limit)
绨 / Antimony (Sb)	mg/kg	参考US EPA 3052方法,用感應藕合電 漿原子發射光譜儀檢測錦含量. / With reference to US EPA Method 3052 for Antimony Content. Analysis was performed by ICP-AES.	2	n.d.	-
磷 / Phosphorus (P)	mg/kg	參考US EPA 3052方法,用感應藕合電 漿原子發射光譜儀檢測磷含量. / With reference to US EPA Method 3052 for Phosphorus Content. Analysis was performed by ICP-AES.	2	118	-
鈹 / Beryllium (Be)	mg/kg	参考US EPA 3052方法,用感應藕合電 漿原子發射光譜儀檢測鈹含量./ With reference to US EPA Method 3052 for Beryllium Content. Analysis was performed by ICP-AES.	2	n.d.	-
聚氯乙烯 / PVC	**	以紅外光譜分析及焰色法檢測./ Analysis was performed by FTIR and FLAME Test.	-	Negative	-
紅磷 / Red phosphorus	**	本測試以熱裂解儀分析. / Analysis was performed by Pyrolyzer-GC/MS.	-	Negative	-

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號碼(No.): KA/2016/61540 日期(Date): 2016/07/04 頁數(Page): 5 of 21

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全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS)	mg/kg	参考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測./ With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	-
全氟辛酸(銨) / PFOA (CAS No.: 335-67-1)	mg/kg	參考US EPA 3550C: 2007方法,以液相層析/質譜儀檢測./With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	10	n.d.	-
六溴環十二烷及所有主要被辨别出的異構物 / Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ - HBCDD, $\beta$ - HBCDD, $\gamma$ - HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8))	mg/kg	参考IEC 62321: 2008方法,以氣相層析/質譜儀檢測. / With reference to IEC 62321: 2008 method. Analysis was performed by GC/MS.	5	n.d.	-
四溴雙酚-A / Tetrabromobisphenol A (TBBP-A) (CAS No.: 79-94-7)	mg/kg	参考RSTS-E&E-121方法,以液相層析/ 質譜儀分析. / With reference to RSTS-E&E-121. Analysis was performed by LC/MS.	10	n.d.	-
雙酚 A / Bisphenol A (CAS No.: 80-05-7)	mg/kg	参考RSTS-HL-229-1方法,以液相層析/質譜儀檢測. / With reference to RSTS-HL-229-1 method. Analysis was performed by LC/MS.	1	n.d.	-

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

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號碼(No.): KA/2016/61540 日期(Date): 2016/07/04 頁數(Page): 7 of 21

義典(無錫義典)科技股份有限公司

E'DALE(WUXI-E'DALE) TECHNOLOGY CO., LTD

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NO. 130, LIOUAN, LIOUAN LI, JIALI DIST., TAINAN CITY, TAIWAN

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

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限値 (MDL)	結果 (Result) NO.1	法規 限値 (Limit)
鹵素 / Halogen					
鹵素 (氟) / Halogen-Fluorine (F) (CAS No.: 14762-94-8)	mg/kg		50	n.d.	-
鹵素 (氣) / Halogen-Chlorine (C1) (CAS No.: 22537-15-1)	mg/kg	参考BS EN 14582:2007, 以離子層析儀 分析. / With reference to BS EN	50	89.6	-
鹵素(溴)/ Halogen-Bromine (Br) (CAS No.: 10097-32-2)	mg/kg	14582:2007. Analysis was performed by IC.	50	n.d.	-
鹵素(碘)/ Halogen-Iodine (I) (CAS No.: 14362-44-8)	mg/kg		50	n.d.	-
鄰苯二甲酸二異丁酯 / DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	mg/kg		50	n.d.	1000
鄰苯二甲酸二丁酯 / DBP (Dibutyl phthalate) (CAS No.: 84-74-2)	mg/kg		50	n.d.	1000
鄰苯二甲酸丁苯甲酯 / BBP (Butyl Benzyl phthalate) (CAS No.: 85-68-7)	mg/kg	参考IEC 62321-8 (111/321/CD),以氣相層析儀/質譜儀檢測之. / With reference to IEC 62321-8	50	n.d.	1000
鄰苯二甲酸二 (2-乙基己基)酯 / DEHP (Di- (2-ethylhexyl) phthalate) (CAS No.: 117-81-7)	mg/kg	(111/321/CD). Analysis was performed by GC/MS.	50	n.d.	1000
鄰苯二甲酸二異壬酯 / DINP (Di-isononyl phthalate) (CAS No.: 28553-12-0; 68515-48-0)	mg/kg		50	n.d.	-

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號碼(No.): KA/2016/61540 日期(Date): 2016/07/04 頁數(Page): 8 of 21

義典(無錫義典)科技股份有限公司

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

### 備註(Note):

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. n.d. = Not Detected (未檢出)
- 3. MDL = Method Detection Limit (方法偵測極限值)
- 4. "-" = Not Regulated (無規格值)
- 5. \*\*= Qualitative analysis (No Unit) 定性分析(無單位)
- 6. Negative = Undetectable 陰性(未偵測到); Positive = Detectable 陽性(已偵測到)
- 7. 聚氯乙烯、紅磷測試由SGS其他實驗室執行 (The PVC & Red Phosphorus test was subcontracted to other SGS Laboratory. )
- 8. (#2) =
  - a. 當六價鉻結果大於0.13 µg/cm²,表示樣品表層含有六價鉻. / The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13  $\mu g/cm^2$ . The sample coating is considered to contain Cr(VI).
  - b. 當六價鉻結果爲n.d. (濃度小於0.10 μg/cm²),表示表層不含六價鉻. / The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10  $\mu g/cm^2$ ). The coating is considered a non-Cr(VI) based coating
  - c. 當六價鉻結果介於 0.10 及 0.13 ug/cm² 時,無法確定塗層是否含有六價鉻. / The result between 0.10 µg/cm<sup>2</sup> and 0.13 µg/cm<sup>2</sup> is considered to be inconclusive - unavoidable coating variations may influence the determination.

### PFOS参考資訊(Reference Information): 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm),在半成品、成品或零部件中不得超過0.1%(1000ppm),在紡織品或塗層材料中 不得超過1µg/m<sup>2</sup>。(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semifinished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above  $1\mu g/m^2$ .)

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

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### 德國產品安全委員會(AfPS) GS PAHs 要求 /

AfPS (German commission for Product Safety): GS PAHs requirements

項目 (Parameter)	第1類 (Category 1)	第2類 (C	第3類 (C	第3類 (Category 3)		
	意圖放入嘴内的材料 或玩具會與皮膚有所 接觸(超過30秒). (Material indented to be put in the mouth or toys with intended skin	觸逾30秒(長期或經 (Materials not facategory 1 with	alling under foreseeable for longer than 30 rm skin or	膚接觸),以及不屬	for less than 30	
	contact (longer than 30 s).)	列於2009/48/EC之 玩具 (Toy under 2009/48/EC)	列於德國產品安全 法之其他產品 (Other products under ProdSG)		列於德國產品安全 法之其他產品 (Other products under ProdSG)	
Naphthalene	< 1	<	2	<	10	
Acenaphthylene						
Acenaphthene	1					
Fluorene	1					
Phenanthrene	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum	
Anthracene	1					
Fluoranthene	1					
Pyrene						
Benzo(a)anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Chrysene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[b]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[j]fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo(k)fluoranthene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo(a)pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[e]pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Indeno[1,2,3-c,d] pyrene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Dibenzo(a,h)anthracene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
Benzo[g,h,i]perylene	< 0.2	< 0.2	< 0.5	< 0.5	< 1	
18項PAH總濃度 (Sum of 18 PAH)	< 1	< 5	< 10	< 20	< 50	

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# **Test Report**

號碼(No.) : KA/2016/61540 日期(Date) : 2016/07/04 頁數(Page) : 10 of 21

義典(無錫義典)科技股份有限公司

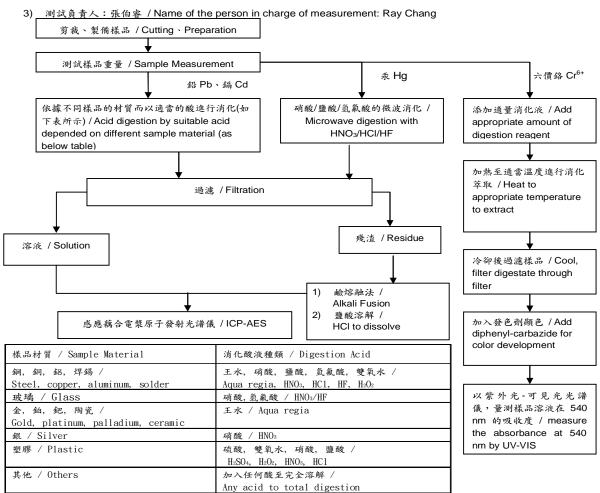
E'DALE(WUXI-E'DALE) TECHNOLOGY CO., LTD

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

- 1) 根據以下的流程圖之條件,樣品已完全溶解。( 六價鉻測試方法除外 ) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員:劉俊宏 / Name of the person who made measurement: Jony Liu



Note\*\*: (1) 針對非金屬材料加入鹼性消化液,加熱至 90~95℃萃取. / For non-metallic material, add alkaline digestion reagent and heat to 90~95℃.

(2) 針對金屬材料加入純水,加熱至沸騰萃取./For metallic material, add pure water and heat to boiling.

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號碼(No.) : KA/2016/61540 日期(Date) : 2016/07/04 頁數(Page) : 11 of 21

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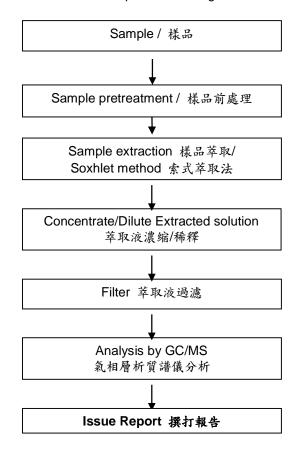
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### 多溴聯苯/多溴聯苯醚 分析流程圖 / PBB/PBDE analytical FLOW CHART

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



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E'DALE(WUXI-E'DALE) TECHNOLOGY CO., LTD

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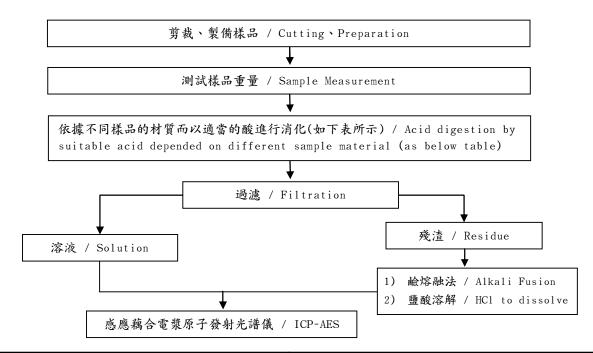
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- 1) 根據以下的流程圖之條件,樣品已完全溶解。 / These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) 測試人員:劉俊宏 / Name of the person who made measurement: Jony Liu
- 3) 測試負責人:張伯睿 / Name of the person in charge of measurement: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

### 元素以 ICP-AES 分析的消化流程圖

(Flow Chart of digestion for the elements analysis performed by ICP-AES)



鋼,銅,鋁,焊錫 / Steel, copper, aluminum, solder	王水,硝酸,鹽酸,氫氟酸,雙氧水 /
	Aqua regia, HNO3, HC1, HF, H2O2
玻璃 / Glass	硝酸,氫氟酸 / HNO₃/HF
金,鉑,鈀,陶瓷 / Gold, platinum, palladium, ceramic	王水 / Aqua regia
銀 / Silver	硝酸 / HNO3
塑膠 / Plastic	硫酸,雙氧水,硝酸,鹽酸 / H2SO4, H2O2, HNO3, HC1
其他 / Others	加入任何酸至完全溶解 / Any acid to total digestion

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號碼(No.) : KA/2016/61540 日期(Date) : 2016/07/04 頁數(Page) : 13 of 21

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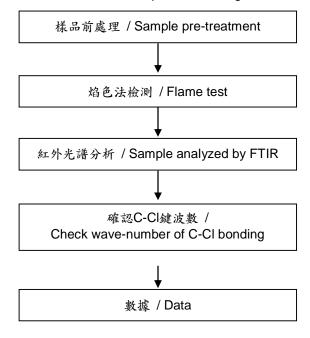
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### 聚氯乙烯物質判定分析流程圖 /

### Analysis flow chart for determination of PVC in material

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



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號碼(No.) : KA/2016/61540 日期(Date) : 2016/07/04 頁數(Page) : 14 of 21

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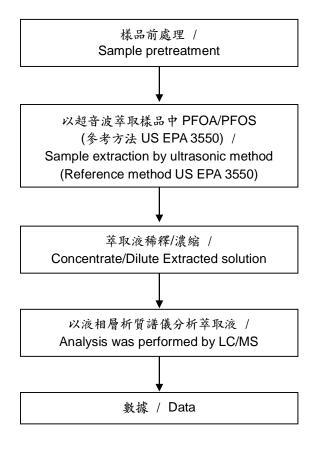
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### 全氟辛酸(銨)/ 全氟辛烷磺酸分析流程圖 / Analytical flow chart of PFOA/PFOS content

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

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



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號碼(No.) : KA/2016/61540 日期(Date) : 2016/07/04 頁數(Page) : 15 of 21

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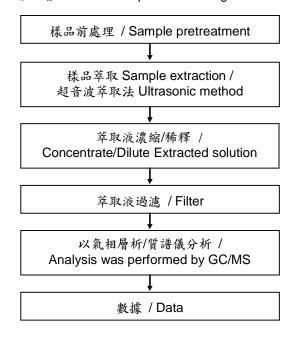
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### 六溴環十二烷分析流程圖 / HBCDD analytical flow chart

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



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號碼(No.) : KA/2016/61540 日期(Date) : 2016/07/04 頁數(Page) : 16 of 21

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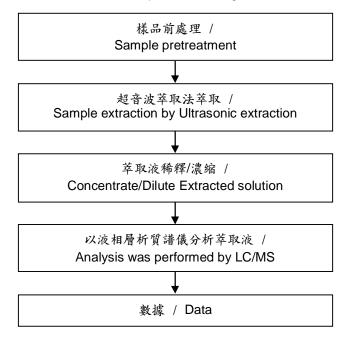
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### 四溴雙酚-A分析流程圖 / TBBP-A analytical flow chart

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



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號碼(No.) : KA/2016/61540 日期(Date) : 2016/07/04 頁數(Page) : 17 of 21

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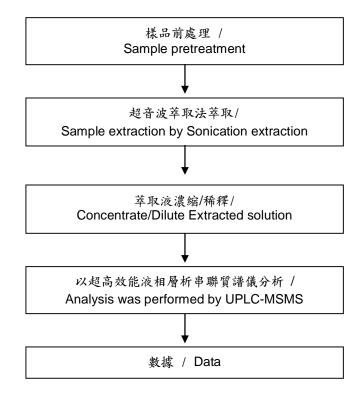
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### 雙酚A分析流程圖 / Bisphenol A analytical flow chart

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



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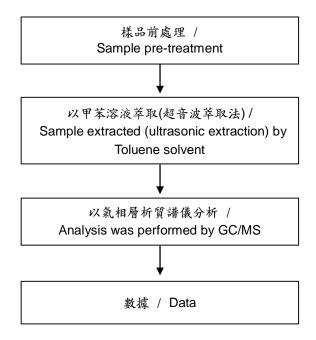
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### 多苯環芳香族化合物分析流程圖 / PAHs (Poly Aromatic Hydrocarbons) analytical flow chart

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

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



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號碼(No.) : KA/2016/61540 日期(Date) : 2016/07/04 頁數(Page) : 19 of 21

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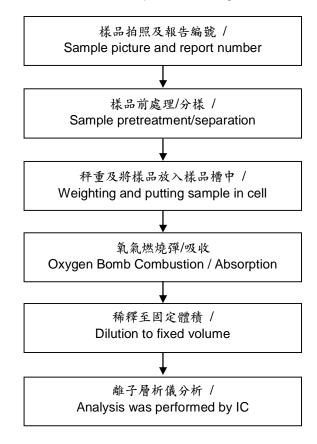
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### 鹵素分析流程圖 / Analytical flow chart of halogen content

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



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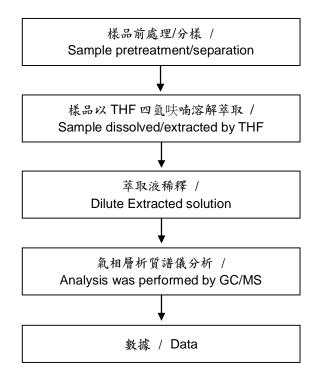
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### 可塑劑分析流程圖 / Analytical flow chart of phthalate content

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

### 【測試方法/Test method: IEC 62321-8】



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\* 照片中如有箭頭標示,則表示為實際檢測之樣品/部位. \*

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

# KA/2016/61540



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# **Reliability Testing Summary Report**

Date: 2017/05/12 Document No.: SK17 -05- 102

Test Item	P/N	Test Condition	(LTPD)	Sample Numbers	Allow Fall Numbers	Fall Numbers	Result
HTRB High Temp Reverse Bias	SSN3134K-C	150°C ± 5°C, 80%VR, T = 1000 hrs		77	0	0	ACC
HTSL High Temperature Storage Life	SSN3134K-C	150°C, T = 1000 hrs		77	0	0	ACC
PCT Pressure Cooker Test	SSN3134K-C	121°ℂ, 29.7PSIG, 168 hrs		77	0	0	ACC
TCT Temperature Cycle Test	SSN3134K-C	-55°C/30min, 150°C/30min, For 1000 Cycle		77	0	0	ACC
THT High Temperature High Humidity Test	SSN3134K-C	85 ± 2°C, RH=85±5%, 1000 hrs		77	0	0	ACC
H3TRB High Temper High Humidity Reverse Bies Test	SSN3134K-C	85 ± 2°C, RH=85±5%, 80% VR, 1000 hrs		77	0	0	ACC
Resistance to Solder Heat Test	SSN3134K-C	270℃±5℃, 7Sec +2/-0Sec		77	0	0	ACC
Judgment:	—						
qualit	-		F 12				
		esting End Date: 2017.0	<b>ਹ.1∠</b>				
Tester: King Hua	ang Approval:	Peter Yang					



# **High Temperature Reverse Bias Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

 $Test\ Condition:\ 20V < V(BR)DSS\ @ID=250\mu A\ ;\ IDSS < 1.0\mu A @VDS=20V$ 

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.20 ~ 2017.05.02

Test Standard: JESD22 STANDARD Method-A108

Operator: Leo Hsia

Test Pegult. DACC

Test Result:	PASS			1		
		Before	I		After	
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)
1	26.37V	0.035uA	315mΩ	26.01V	0.028uA	$308\mathrm{m}\Omega$
2	26.32V	0.019uA	314mΩ	26.02V	0.035uA	$309 \mathrm{m}\Omega$
3	26.61V	0.018uA	$313$ m $\Omega$	26.76V	0.025uA	$313 \mathrm{m}\Omega$
4	26.21V	0.025uA	$314 \mathrm{m}\Omega$	26.20V	0.030uA	$309 \mathrm{m}\Omega$
5	25.98V	0.034uA	$312 \mathrm{m}\Omega$	26.96V	0.031uA	$316 \mathrm{m}\Omega$
6	25.87V	0.018uA	$310 \mathrm{m}\Omega$	26.20V	0.017uA	$313 \text{m}\Omega$
7	27.21V	0.024uA	$315 \mathrm{m}\Omega$	27.22V	0.035uA	$313 \mathrm{m}\Omega$
8	26.36V	0.020uA	$313 \mathrm{m}\Omega$	26.62V	0.027uA	$312 \text{m}\Omega$
9	26.64V	0.029uA	$310 \mathrm{m}\Omega$	26.16V	0.023uA	$316 \text{m}\Omega$
10	26.43V	0.036uA	$314 \mathrm{m}\Omega$	26.63V	0.022uA	$311 \text{m}\Omega$
11	25.91V	0.033uA	$313 \mathrm{m}\Omega$	25.96V	0.021uA	$311 \text{m}\Omega$
12	26.07V	0.028uA	$315 \mathrm{m}\Omega$	27.00V	0.026uA	$315 \mathrm{m}\Omega$
13	26.88V	0.017uA	$315 \mathrm{m}\Omega$	26.40V	0.027uA	$309 \mathrm{m}\Omega$
13	27.26V	0.024uA	$310 \mathrm{m}\Omega$	27.21V	0.031uA	$313 \mathrm{m}\Omega$
15	26.09V	0.023uA	$312 \mathrm{m}\Omega$	26.02V	0.036uA	$316 \mathrm{m}\Omega$
16	26.88V	0.026uA	$308$ m $\Omega$	26.72V	0.029uA	$316 \mathrm{m}\Omega$
17	27.21V	0.018uA	$312 \mathrm{m}\Omega$	26.39V	0.036uA	$312 \mathrm{m}\Omega$
18	25.94V	0.023uA	$315 \mathrm{m}\Omega$	26.37V	0.029uA	$310 \mathrm{m}\Omega$
19	26.40V	0.031uA	$308 \mathrm{m}\Omega$	26.89V	0.033uA	$310 \mathrm{m}\Omega$
20	26.69V	0.035uA	$316 \mathrm{m}\Omega$	27.18V	0.037uA	$309 \mathrm{m}\Omega$
21	26.71V	0.028uA	$313 \mathrm{m}\Omega$	25.89V	0.035uA	$315 \mathrm{m}\Omega$
22	26.88V	0.032uA	$317 \mathrm{m}\Omega$	26.84V	0.036uA	$311 \text{m}\Omega$
23	26.58V	0.033uA	$309 \mathrm{m}\Omega$	25.93V	0.025uA	$313 \mathrm{m}\Omega$
24	25.93V	0.033uA	311mΩ	26.53V	0.026uA	311mΩ
25	27.16V	0.021uA	$315 \mathrm{m}\Omega$	26.94V	0.034uA	$309 \mathrm{m}\Omega$
26	26.22V	0.035uA	316mΩ	26.45V	0.027uA	310mΩ
27	26.88V	0.028uA	316mΩ	26.15V	0.021uA	$309 \mathrm{m}\Omega$
28	26.67V	0.035uA	315mΩ	26.08V	0.035uA	$317 \mathrm{m}\Omega$
29	26.36V	0.018uA	316mΩ	26.90V	0.029uA	$312 \mathrm{m}\Omega$



## **High Temperature Reverse Bias Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

 $Test\ Condition:\ 20V < V(BR)DSS\ @ID=250\mu A\ ;\ IDSS < 1.0\mu A @VDS=20V$ 

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.20 ~ 2017.05.02

Test Standard: JESD22 STANDARD Method-A108

Operator: Leo Hsia

		Before		After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	RDS(ON)	
30	27.27V	0.026uA	$311 \mathrm{m}\Omega$	25.98V	0.034uA	316mΩ	
31	26.35V	0.024uA	$312 \mathrm{m}\Omega$	26.41V	0.035uA	311mΩ	
32	26.37V	0.020uA	$314 \mathrm{m}\Omega$	26.77V	0.031uA	316mΩ	
33	26.49V	0.019uA	$311 \mathrm{m}\Omega$	26.77V	0.018uA	311mΩ	
34	26.66V	0.027uA	$314 \mathrm{m}\Omega$	25.89V	0.017uA	315mΩ	
35	27.03V	0.027uA	$316 \mathrm{m}\Omega$	26.58V	0.031uA	311mΩ	
36	26.26V	0.025uA	$312 \mathrm{m}\Omega$	27.05V	0.032uA	314mΩ	
37	26.13V	0.023uA	$316 \text{m}\Omega$	26.50V	0.027uA	311mΩ	
38	26.09V	0.030uA	$315 \mathrm{m}\Omega$	27.03V	0.029uA	310mΩ	
39	26.88V	0.031uA	$313 \mathrm{m}\Omega$	25.98V	0.018uA	317mΩ	
40	26.45V	0.032uA	$313 \mathrm{m}\Omega$	25.88V	0.025uA	316mΩ	
41	26.54V	0.032uA	$313 \mathrm{m}\Omega$	26.92V	0.031uA	313mΩ	
42	27.15V	0.021uA	$309 \mathrm{m}\Omega$	26.06V	0.032uA	314mΩ	
43	25.94V	0.022uA	$310 \mathrm{m}\Omega$	26.94V	0.032uA	309mΩ	
44	27.03V	0.022uA	$310 \mathrm{m}\Omega$	26.28V	0.021uA	314mΩ	
45	26.95V	0.034uA	$313 \mathrm{m}\Omega$	27.16V	0.029uA	309mΩ	
46	27.16V	0.031uA	$310 \mathrm{m}\Omega$	27.22V	0.017uA	311mΩ	
47	26.65V	0.037uA	$310 \mathrm{m}\Omega$	26.04V	0.033uA	313mΩ	
48	26.79V	0.024uA	$308 \mathrm{m}\Omega$	26.71V	0.022uA	308mΩ	
49	26.59V	0.037uA	$315 \mathrm{m}\Omega$	26.34V	0.036uA	311mΩ	
50	27.20V	0.020uA	$315 \mathrm{m}\Omega$	26.45V	0.021uA	311mΩ	
51	26.20V	0.018uA	311mΩ	26.70V	0.022uA	313mΩ	
52	26.03V	0.026uA	$315 \mathrm{m}\Omega$	26.15V	0.031uA	313mΩ	
53	25.94V	0.033uA	$313 \mathrm{m}\Omega$	26.58V	0.033uA	317mΩ	
54	26.38V	0.029uA	$314 \mathrm{m}\Omega$	26.48V	0.019uA	310mΩ	
55	26.12V	0.019uA	311mΩ	26.14V	0.027uA	313mΩ	
56	27.25V	0.025uA	$315 \mathrm{m}\Omega$	26.40V	0.022uA	311mΩ	
57	27.05V	0.033uA	$308$ m $\Omega$	26.26V	0.031uA	315mΩ	
58	26.78V	0.033uA	$310 \mathrm{m}\Omega$	26.23V	0.018uA	316mΩ	



## **High Temperature Reverse Bias Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID=250µA ; IDSS < 1.0µA@VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.20 ~ 2017.05.02

Test Standard: JESD22 STANDARD Method-A108

Operator: Leo Hsia

Test Result: PASS

rest Result:	PASS					
		Before			After	
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)
59	26.17V	0.028uA	$314 \mathrm{m}\Omega$	26.51V	0.029uA	311mΩ
60	26.27V	0.019uA	$314 \mathrm{m}\Omega$	26.85V	0.024uA	$308 \mathrm{m}\Omega$
61	26.65V	0.035uA	$308$ m $\Omega$	26.01V	0.029uA	$315 \mathrm{m}\Omega$
62	26.63V	0.028uA	$309 \mathrm{m}\Omega$	26.00V	0.023uA	$315 \mathrm{m}\Omega$
63	26.44V	0.029uA	$312 \mathrm{m}\Omega$	26.53V	0.023uA	$312 \mathrm{m}\Omega$
64	27.16V	0.031uA	$314m\Omega$	26.45V	0.031uA	$308 \mathrm{m}\Omega$
65	26.12V	0.019uA	$308$ m $\Omega$	26.40V	0.036uA	$315 \mathrm{m}\Omega$
66	27.10V	0.030uA	$315 \mathrm{m}\Omega$	26.97V	0.022uA	$315 \mathrm{m}\Omega$
67	26.99V	0.031uA	$309 \mathrm{m}\Omega$	26.09V	0.033uA	$315 \mathrm{m}\Omega$
68	27.03V	0.022uA	$312 \mathrm{m}\Omega$	26.72V	0.032uA	$313 \mathrm{m}\Omega$
69	27.24V	0.029uA	$314 \mathrm{m}\Omega$	26.84V	0.023uA	$314 \mathrm{m}\Omega$
70	26.68V	0.026uA	$313 \mathrm{m}\Omega$	26.93V	0.028uA	$315 \mathrm{m}\Omega$
71	26.31V	0.020uA	$313$ m $\Omega$	27.19V	0.036uA	$315 \mathrm{m}\Omega$
72	26.79V	0.031uA	$313 \mathrm{m}\Omega$	27.01V	0.028uA	$314 \mathrm{m}\Omega$
73	25.93V	0.029uA	$311 \mathrm{m}\Omega$	26.46V	0.021uA	$310 \mathrm{m}\Omega$
74	26.65V	0.017uA	$309 \mathrm{m}\Omega$	26.07V	0.022uA	$312 \mathrm{m}\Omega$
75	26.60V	0.020uA	$313 \mathrm{m}\Omega$	26.92V	0.025uA	$317 \mathrm{m}\Omega$
76	26.07V	0.033uA	$313 \mathrm{m}\Omega$	26.70V	0.035uA	312mΩ
77	25.93V	0.029uA	$309 \mathrm{m}\Omega$	26.50V	0.024uA	$313 \mathrm{m}\Omega$

Made By: King Huang Approval: Peter Yang



## **High Temperature Storage Life Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

 $Test\ Condition:\ 20V < V(BR)DSS\ @ID=250\mu A\ ;\ IDSS < 1.0\mu A @VDS=20V$ 

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition: 150°C, 1000Hrs Test Date: 2017.03.20 ~ 2017.05.02

Test Standard: JESD22 STANDARD Method-A103

Operator: Leo Hsia

Test Result: PASS

		Before		After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on	
1	25.90V	0.032uA	$312 \mathrm{m}\Omega$	26.06V	0.021uA	316mΩ	
2	26.17V	0.026uA	$316 \mathrm{m}\Omega$	26.85V	0.028uA	309mΩ	
3	26.80V	0.025uA	$313 \mathrm{m}\Omega$	27.04V	0.037uA	313mΩ	
4	26.20V	0.036uA	$316$ m $\Omega$	27.22V	0.027uA	314mΩ	
5	26.73V	0.024uA	$317 \mathrm{m}\Omega$	26.12V	0.032uA	310mΩ	
6	26.49V	0.029uA	$313 \mathrm{m}\Omega$	25.92V	0.031uA	315mΩ	
7	26.90V	0.028uA	$312 \mathrm{m}\Omega$	26.85V	0.019uA	310mΩ	
8	26.30V	0.025uA	$313 \mathrm{m}\Omega$	26.51V	0.032uA	313mΩ	
9	27.25V	0.017uA	$316 \mathrm{m}\Omega$	26.84V	0.032uA	312mΩ	
10	26.40V	0.018uA	311mΩ	26.29V	0.030uA	310mΩ	
11	25.94V	0.027uA	$312 \mathrm{m}\Omega$	26.97V	0.022uA	311mΩ	
12	26.87V	0.019uA	$309 \mathrm{m}\Omega$	27.01V	0.024uA	308mΩ	
13	26.33V	0.029uA	$314 \mathrm{m}\Omega$	27.27V	0.027uA	309mΩ	
13	27.16V	0.029uA	$316 \mathrm{m}\Omega$	26.02V	0.027uA	313mΩ	
15	26.07V	0.018uA	$309 \mathrm{m}\Omega$	26.28V	0.025uA	315mΩ	
16	26.35V	0.028uA	$311 \text{m}\Omega$	26.50V	0.020uA	310mΩ	
17	26.59V	0.023uA	$312 \mathrm{m}\Omega$	27.18V	0.031uA	310mΩ	
18	26.23V	0.027uA	$316 \mathrm{m}\Omega$	26.56V	0.025uA	314mΩ	
19	26.40V	0.021uA	$312 \mathrm{m}\Omega$	27.23V	0.025uA	309mΩ	
20	26.40V	0.023uA	$316 \mathrm{m}\Omega$	26.93V	0.022uA	310mΩ	
21	26.31V	0.026uA	$315 \mathrm{m}\Omega$	26.08V	0.034uA	311mΩ	
22	26.70V	0.024uA	$312 \mathrm{m}\Omega$	26.89V	0.021uA	314mΩ	
23	27.15V	0.020uA	$309 \mathrm{m}\Omega$	26.64V	0.019uA	309mΩ	
24	26.84V	0.018uA	$312 \mathrm{m}\Omega$	26.13V	0.035uA	308mΩ	
25	27.04V	0.029uA	$309 \mathrm{m}\Omega$	26.32V	0.032uA	313mΩ	
26	25.88V	0.035uA	$317 \mathrm{m}\Omega$	26.08V	0.031uA	314mΩ	
27	26.90V	0.022uA	$312 \mathrm{m}\Omega$	26.46V	0.031uA	311mΩ	
28	26.16V	0.030uA	$317 \mathrm{m}\Omega$	26.81V	0.033uA	309mΩ	
29	26.12V	0.037uA	$309 \mathrm{m}\Omega$	26.99V	0.032uA	315mΩ	



## **High Temperature Storage Life Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

 $Test\ Condition:\ 20V < V(BR)DSS\ @ID=250\mu A\ ;\ IDSS < 1.0\mu A @VDS=20V$ 

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition: 150°C, 1000Hrs Test Date: 2017.03.20 ~ 2017.05.02

Test Standard: JESD22 STANDARD Method-A103

Operator: Leo Hsia

Test Result: PASS

	Before			After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)	
30	26.67V	0.036uA	309mΩ	26.89V	0.035uA	$317 \mathrm{m}\Omega$	
31	27.00V	0.030uA	311mΩ	26.32V	0.023uA	310mΩ	
32	26.12V	0.028uA	311mΩ	26.62V	0.028uA	314mΩ	
33	26.64V	0.026uA	315mΩ	26.84V	0.025uA	310mΩ	
34	26.14V	0.033uA	310mΩ	26.99V	0.030uA	312mΩ	
35	27.18V	0.035uA	308mΩ	26.25V	0.037uA	314mΩ	
36	26.97V	0.026uA	317mΩ	26.94V	0.027uA	311mΩ	
37	26.24V	0.034uA	$309 \mathrm{m}\Omega$	26.17V	0.024uA	$313 \mathrm{m}\Omega$	
38	26.59V	0.033uA	$310 \mathrm{m}\Omega$	26.61V	0.029uA	$311 \mathrm{m}\Omega$	
39	26.13V	0.027uA	$309 \mathrm{m}\Omega$	26.29V	0.018uA	$309 \mathrm{m}\Omega$	
40	25.93V	0.023uA	$311 \mathrm{m}\Omega$	27.27V	0.020uA	$308 \mathrm{m}\Omega$	
41	26.91V	0.018uA	$313 \mathrm{m}\Omega$	26.13V	0.034uA	$309 \mathrm{m}\Omega$	
42	26.72V	0.028uA	$314 \mathrm{m}\Omega$	26.88V	0.024uA	$308 \mathrm{m}\Omega$	
43	27.02V	0.036uA	$315 \mathrm{m}\Omega$	26.46V	0.029uA	$310 \text{m}\Omega$	
44	26.91V	0.020uA	$310 \mathrm{m}\Omega$	26.01V	0.029uA	$315 \mathrm{m}\Omega$	
45	26.54V	0.033uA	$314 \mathrm{m}\Omega$	27.22V	0.031uA	$312 \text{m}\Omega$	
46	27.04V	0.036uA	$316$ m $\Omega$	26.85V	0.032uA	$311 \text{m}\Omega$	
47	26.42V	0.026uA	$315 \mathrm{m}\Omega$	26.71V	0.035uA	$314 \mathrm{m}\Omega$	
48	26.53V	0.018uA	$309 \mathrm{m}\Omega$	25.99V	0.026uA	$316 \text{m}\Omega$	
49	26.30V	0.033uA	$309 \mathrm{m}\Omega$	26.75V	0.025uA	$313 \text{m}\Omega$	
50	25.91V	0.030uA	$310 \mathrm{m}\Omega$	27.07V	0.020uA	$310 \text{m}\Omega$	
51	26.50V	0.021uA	$309 \mathrm{m}\Omega$	27.17V	0.025uA	$311 \text{m}\Omega$	
52	27.09V	0.035uA	$311 \text{m}\Omega$	26.96V	0.033uA	$314 \mathrm{m}\Omega$	
53	26.92V	0.028uA	$312 \mathrm{m}\Omega$	26.78V	0.028uA	$312 \text{m}\Omega$	
54	25.99V	0.021uA	$311 \mathrm{m}\Omega$	26.62V	0.023uA	$317 \mathrm{m}\Omega$	
55	26.74V	0.020uA	$309 \mathrm{m}\Omega$	26.70V	0.025uA	$312 \text{m}\Omega$	
56	26.13V	0.024uA	$315 \mathrm{m}\Omega$	26.67V	0.028uA	$314 \mathrm{m}\Omega$	
57	26.04V	0.033uA	$308$ m $\Omega$	26.48V	0.032uA	$312 \mathrm{m}\Omega$	
58	26.38V	0.037uA	$317 \mathrm{m}\Omega$	26.93V	0.019uA	$311 \text{m}\Omega$	



## **High Temperature Storage Life Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$ ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition: 150°C, 1000Hrs Test Date: 2017.03.20 ~ 2017.05.02

Test Standard: JESD22 STANDARD Method-A103

Operator: Leo Hsia

Test Result: PASS

Test Result: I	ASS			-		
		Before			After	
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)
59	27.21V	0.031uA	$310 \mathrm{m}\Omega$	26.83V	0.034uA	$315 \mathrm{m}\Omega$
60	26.74V	0.029uA	$310 \mathrm{m}\Omega$	26.75V	0.024uA	$312 \mathrm{m}\Omega$
61	27.03V	0.035uA	$309 \mathrm{m}\Omega$	26.33V	0.032uA	$311 \mathrm{m}\Omega$
62	26.15V	0.019uA	$310 \mathrm{m}\Omega$	26.70V	0.036uA	$308 \mathrm{m}\Omega$
63	26.07V	0.027uA	$315 \mathrm{m}\Omega$	27.17V	0.021uA	$309 \mathrm{m}\Omega$
64	27.03V	0.033uA	$309 \mathrm{m}\Omega$	26.43V	0.020uA	$313 \mathrm{m}\Omega$
65	26.81V	0.024uA	$310 \mathrm{m}\Omega$	26.41V	0.018uA	$309 \mathrm{m}\Omega$
66	26.24V	0.029uA	$312 \mathrm{m}\Omega$	26.64V	0.025uA	$313 \mathrm{m}\Omega$
67	26.20V	0.036uA	$309 \mathrm{m}\Omega$	26.70V	0.035uA	$309 \mathrm{m}\Omega$
68	26.06V	0.023uA	$310 \mathrm{m}\Omega$	26.27V	0.027uA	$314 \mathrm{m}\Omega$
69	26.29V	0.030uA	$317 \mathrm{m}\Omega$	26.25V	0.036uA	$316 \mathrm{m}\Omega$
70	26.02V	0.036uA	$309 \mathrm{m}\Omega$	27.03V	0.023uA	$316 \mathrm{m}\Omega$
71	26.01V	0.033uA	$310 \mathrm{m}\Omega$	26.94V	0.035uA	$315 \mathrm{m}\Omega$
72	26.29V	0.025uA	$311 \text{m}\Omega$	26.73V	0.024uA	$317 \mathrm{m}\Omega$
73	27.08V	0.023uA	$309 \mathrm{m}\Omega$	27.23V	0.026uA	$310 \mathrm{m}\Omega$
74	26.77V	0.021uA	$317 \mathrm{m}\Omega$	27.03V	0.024uA	$309 \mathrm{m}\Omega$
75	26.92V	0.030uA	$312 \mathrm{m}\Omega$	26.93V	0.034uA	$308 \mathrm{m}\Omega$
76	27.01V	0.020uA	$312 \mathrm{m}\Omega$	27.26V	0.024uA	$308 \mathrm{m}\Omega$
77	26.87V	0.031uA	$316$ m $\Omega$	26.23V	0.032uA	$312 \mathrm{m}\Omega$

Made By: King Huang Approval: Peter Yang



## **Pressure Cooker Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : 20V < V(BR)DSS @ID= $250\mu A$  ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.20 ~ 2017.03.28

Test Standard: JESD22 STANDARD Method-A102

Operator: Leo Hsia

Test Result. PASS

		Before		After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)	
1	25.98V	0.034uA	311mΩ	26.83V	0.027uA	$310 \mathrm{m}\Omega$	
2	26.95V	0.027uA	309mΩ	26.84V	0.037uA	$309 \mathrm{m}\Omega$	
3	26.43V	0.027uA	$315 \mathrm{m}\Omega$	26.90V	0.030uA	$312 \mathrm{m}\Omega$	
4	25.99V	0.030uA	312mΩ	27.22V	0.019uA	$309 \mathrm{m}\Omega$	
5	26.23V	0.028uA	314mΩ	26.77V	0.035uA	309mΩ	
6	26.55V	0.033uA	315mΩ	26.69V	0.025uA	313mΩ	
7	27.18V	0.023uA	309mΩ	26.39V	0.033uA	313mΩ	
8	26.12V	0.019uA	312mΩ	26.83V	0.018uA	312mΩ	
9	25.96V	0.026uA	316mΩ	26.28V	0.037uA	314mΩ	
10	26.70V	0.032uA	316mΩ	26.05V	0.032uA	$315 \mathrm{m}\Omega$	
11	26.77V	0.025uA	310mΩ	26.67V	0.033uA	$313 \mathrm{m}\Omega$	
12	26.91V	0.025uA	316mΩ	26.10V	0.036uA	$308$ m $\Omega$	
13	26.66V	0.018uA	$315 \mathrm{m}\Omega$	27.00V	0.029uA	309mΩ	
13	26.98V	0.025uA	310mΩ	27.18V	0.018uA	309mΩ	
15	27.19V	0.021uA	311mΩ	25.94V	0.018uA	311mΩ	
16	26.58V	0.028uA	314mΩ	25.91V	0.036uA	317mΩ	
17	26.35V	0.027uA	309mΩ	26.51V	0.018uA	310mΩ	
18	26.41V	0.033uA	$315 \mathrm{m}\Omega$	26.16V	0.023uA	313mΩ	
19	26.73V	0.037uA	314mΩ	25.89V	0.037uA	312mΩ	
20	26.66V	0.024uA	314mΩ	26.75V	0.023uA	313mΩ	
21	26.06V	0.034uA	309mΩ	26.07V	0.025uA	313mΩ	
22	26.81V	0.036uA	316mΩ	27.11V	0.023uA	316mΩ	
23	26.28V	0.031uA	315mΩ	27.00V	0.026uA	311mΩ	
24	26.74V	0.035uA	310mΩ	27.08V	0.028uA	309mΩ	
25	27.06V	0.019uA	$317 \mathrm{m}\Omega$	27.12V	0.028uA	316mΩ	
26	26.35V	0.019uA	312mΩ	26.26V	0.031uA	317mΩ	
27	27.06V	0.024uA	313mΩ	26.04V	0.028uA	312mΩ	
28	25.92V	0.029uA	311mΩ	26.01V	0.019uA	315mΩ	
29	26.64V	0.027uA	$314 \mathrm{m}\Omega$	27.04V	0.029uA	317mΩ	



## **Pressure Cooker Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : 20V < V(BR)DSS @ID= $250\mu A$  ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.20 ~ 2017.03.28

Test Standard: JESD22 STANDARD Method-A102

Operator: Leo Hsia

		Before		After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	RDS(ON)	
30	27.15V	0.023uA	$310 \mathrm{m}\Omega$	26.42V	0.028uA	312mΩ	
31	26.55V	0.023uA	$312 \mathrm{m}\Omega$	26.69V	0.018uA	316mΩ	
32	26.34V	0.034uA	$315 \mathrm{m}\Omega$	26.69V	0.032uA	315mΩ	
33	26.47V	0.019uA	$309 \mathrm{m}\Omega$	26.57V	0.022uA	315mΩ	
34	25.91V	0.035uA	$312 \text{m}\Omega$	26.69V	0.026uA	313mΩ	
35	26.10V	0.031uA	$311 \mathrm{m}\Omega$	25.89V	0.035uA	313mΩ	
36	26.01V	0.022uA	$312 \mathrm{m}\Omega$	26.82V	0.022uA	311mΩ	
37	27.10V	0.019uA	$309 \mathrm{m}\Omega$	26.28V	0.028uA	314mΩ	
38	26.39V	0.036uA	$316 \mathrm{m}\Omega$	26.35V	0.022uA	310mΩ	
39	26.95V	0.024uA	$310 \mathrm{m}\Omega$	25.89V	0.029uA	312mΩ	
40	26.93V	0.024uA	$316 \text{m}\Omega$	26.20V	0.019uA	317mΩ	
41	25.95V	0.033uA	$316$ m $\Omega$	26.67V	0.034uA	309mΩ	
42	26.76V	0.024uA	$317 \mathrm{m}\Omega$	26.45V	0.029uA	314mΩ	
43	26.84V	0.031uA	$316 \mathrm{m}\Omega$	26.63V	0.031uA	309mΩ	
44	26.70V	0.029uA	$310 \mathrm{m}\Omega$	27.19V	0.017uA	311mΩ	
45	26.26V	0.026uA	$315 \mathrm{m}\Omega$	26.12V	0.034uA	308mΩ	
46	27.11V	0.030uA	$311 \text{m}\Omega$	26.30V	0.030uA	312mΩ	
47	26.41V	0.027uA	$316 \text{m}\Omega$	26.72V	0.030uA	312mΩ	
48	26.48V	0.020uA	$313 \mathrm{m}\Omega$	27.10V	0.035uA	309mΩ	
49	26.72V	0.037uA	$309 \mathrm{m}\Omega$	26.14V	0.031uA	312mΩ	
50	26.51V	0.021uA	$310 \mathrm{m}\Omega$	26.92V	0.019uA	310mΩ	
51	27.10V	0.034uA	$313 \mathrm{m}\Omega$	27.05V	0.031uA	309mΩ	
52	25.95V	0.019uA	$316 \text{m}\Omega$	26.84V	0.036uA	308mΩ	
53	26.64V	0.028uA	$313 \mathrm{m}\Omega$	26.21V	0.035uA	316mΩ	
54	25.92V	0.029uA	$314 \mathrm{m}\Omega$	25.90V	0.026uA	312mΩ	
55	26.88V	0.029uA	$311 \text{m}\Omega$	25.97V	0.037uA	309mΩ	
56	26.39V	0.027uA	$314 \mathrm{m}\Omega$	25.96V	0.025uA	309mΩ	
57	27.10V	0.021uA	$317 \mathrm{m}\Omega$	27.01V	0.031uA	309mΩ	
58	27.11V	0.020uA	$308 \mathrm{m}\Omega$	26.75V	0.026uA	312mΩ	



# SeCoS Corporation

## **Pressure Cooker Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$  ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.20 ~ 2017.03.28

Test Standard: JESD22 STANDARD Method-A102

Operator: Leo Hsia

Test Result: PASS

Test Result: F	ASS			7		
		Before			After	
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)
59	25.92V	0.032uA	$316$ m $\Omega$	25.92V	0.030uA	$309 \mathrm{m}\Omega$
60	26.86V	0.025uA	$316 \mathrm{m}\Omega$	26.05V	0.020uA	$316 \mathrm{m}\Omega$
61	26.75V	0.026uA	$313 \mathrm{m}\Omega$	26.35V	0.028uA	$311 \text{m}\Omega$
62	25.97V	0.036uA	$310 \mathrm{m}\Omega$	26.41V	0.033uA	$308 \mathrm{m}\Omega$
63	26.87V	0.035uA	$309 \mathrm{m}\Omega$	26.98V	0.029uA	$308 \mathrm{m}\Omega$
64	26.74V	0.020uA	$313 \mathrm{m}\Omega$	26.31V	0.019uA	$310 \mathrm{m}\Omega$
65	27.20V	0.017uA	$312 \mathrm{m}\Omega$	26.25V	0.021uA	$313 \mathrm{m}\Omega$
66	26.07V	0.029uA	$314 \mathrm{m}\Omega$	26.63V	0.035uA	$310 \mathrm{m}\Omega$
67	26.49V	0.028uA	$311 \text{m}\Omega$	26.97V	0.034uA	$317 \mathrm{m}\Omega$
68	26.87V	0.032uA	$316$ m $\Omega$	26.78V	0.037uA	$310 \mathrm{m}\Omega$
69	26.50V	0.022uA	$309 \mathrm{m}\Omega$	26.97V	0.029uA	$314 \mathrm{m}\Omega$
70	26.90V	0.036uA	$311 \text{m}\Omega$	26.54V	0.019uA	$311 \text{m}\Omega$
71	27.11V	0.024uA	$315 \mathrm{m}\Omega$	25.99V	0.032uA	$311 \text{m}\Omega$
72	26.27V	0.021uA	$308 \mathrm{m}\Omega$	26.47V	0.027uA	$311 \text{m}\Omega$
73	26.09V	0.033uA	$312 \mathrm{m}\Omega$	26.73V	0.026uA	$309 \mathrm{m}\Omega$
74	26.93V	0.018uA	$313 \mathrm{m}\Omega$	26.22V	0.023uA	$314 \mathrm{m}\Omega$
75	27.24V	0.021uA	$317 \mathrm{m}\Omega$	26.91V	0.032uA	$309 \mathrm{m}\Omega$
76	26.76V	0.032uA	$316$ m $\Omega$	26.12V	0.019uA	$311 \text{m}\Omega$
77	27.17V	0.020uA	311mΩ	26.30V	0.035uA	$314 \mathrm{m}\Omega$

Made By: King Huang Approval: Peter Yang



# **Temperature Cycle Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : 20V < V(BR)DSS @ID= $250\mu A$  ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.21 ~ 2017.05.12

Test Standard: JESD22 STANDARD Method-A104

Operator: Leo Hsia

		Before		After		
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	RDS(ON)
1	26.45V	0.021uA	312mΩ	26.27V	0.037uA	310mΩ
2	26.73V	0.037uA	311mΩ	26.11V	0.036uA	317mΩ
3	26.32V	0.025uA	310mΩ	26.31V	0.019uA	$308 \mathrm{m}\Omega$
4	25.87V	0.028uA	316mΩ	26.32V	0.030uA	316mΩ
5	27.15V	0.019uA	$309 \mathrm{m}\Omega$	26.84V	0.033uA	313mΩ
6	26.51V	0.024uA	312mΩ	25.91V	0.023uA	314mΩ
7	26.49V	0.019uA	$313 \mathrm{m}\Omega$	26.53V	0.021uA	312mΩ
8	27.10V	0.025uA	$315 \mathrm{m}\Omega$	26.56V	0.024uA	$312 \mathrm{m}\Omega$
9	27.03V	0.028uA	$309 \mathrm{m}\Omega$	26.74V	0.034uA	$310 \mathrm{m}\Omega$
10	26.84V	0.035uA	$317 \mathrm{m}\Omega$	26.56V	0.036uA	311mΩ
11	26.84V	0.031uA	$314 \mathrm{m}\Omega$	25.95V	0.035uA	314mΩ
12	27.10V	0.023uA	312mΩ	26.24V	0.034uA	313mΩ
13	26.70V	0.036uA	314mΩ	26.29V	0.030uA	313mΩ
13	25.90V	0.034uA	311mΩ	26.13V	0.037uA	309mΩ
15	26.11V	0.024uA	$315 \mathrm{m}\Omega$	26.94V	0.037uA	312mΩ
16	26.69V	0.035uA	311mΩ	26.30V	0.018uA	316mΩ
17	26.20V	0.037uA	309mΩ	25.97V	0.022uA	313mΩ
18	26.42V	0.024uA	313mΩ	26.50V	0.021uA	312mΩ
19	25.98V	0.029uA	$314 \mathrm{m}\Omega$	26.85V	0.030uA	312mΩ
20	26.87V	0.022uA	312mΩ	26.78V	0.031uA	313mΩ
21	26.92V	0.027uA	$313 \mathrm{m}\Omega$	26.93V	0.030uA	309mΩ
22	26.18V	0.026uA	315mΩ	26.15V	0.033uA	311mΩ
23	26.77V	0.025uA	311mΩ	26.11V	0.018uA	315mΩ
24	26.61V	0.021uA	$317 \mathrm{m}\Omega$	26.53V	0.034uA	311mΩ
25	26.12V	0.034uA	$312 \mathrm{m}\Omega$	26.71V	0.027uA	316mΩ
26	27.15V	0.019uA	310mΩ	26.99V	0.030uA	311mΩ
27	26.58V	0.020uA	311mΩ	26.89V	0.033uA	310mΩ
28	26.27V	0.035uA	$315 \mathrm{m}\Omega$	25.92V	0.024uA	311mΩ
29	27.08V	0.035uA	310mΩ	27.23V	0.019uA	312mΩ



# **Temperature Cycle Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition : 20V < V(BR)DSS @ID= $250\mu A$  ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.21 ~ 2017.05.12

Test Standard: JESD22 STANDARD Method-A104

Operator: Leo Hsia

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Test Result:	PASS			T			
		Before		After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)	
30	27.05V	0.025uA	$308\mathrm{m}\Omega$	26.90V	0.023uA	$317 \mathrm{m}\Omega$	
31	26.18V	0.036uA	$310 \mathrm{m}\Omega$	26.59V	0.022uA	$316\text{m}\Omega$	
32	26.33V	0.022uA	$315 \mathrm{m}\Omega$	26.31V	0.034uA	$314 \mathrm{m}\Omega$	
33	26.52V	0.027uA	$317 \mathrm{m}\Omega$	26.04V	0.035uA	$314 \mathrm{m}\Omega$	
34	26.54V	0.027uA	$311 \mathrm{m}\Omega$	26.93V	0.026uA	$317 \mathrm{m}\Omega$	
35	26.34V	0.026uA	$311 \text{m}\Omega$	25.95V	0.034uA	$316 \text{m}\Omega$	
36	26.68V	0.034uA	$309 \mathrm{m}\Omega$	25.95V	0.022uA	$311 \text{m}\Omega$	
37	25.95V	0.034uA	$314 \mathrm{m}\Omega$	26.97V	0.032uA	$313 \mathrm{m}\Omega$	
38	25.95V	0.023uA	$310 \mathrm{m}\Omega$	26.05V	0.033uA	$313 \mathrm{m}\Omega$	
39	26.66V	0.033uA	$316 \mathrm{m}\Omega$	26.10V	0.023uA	$315 \mathrm{m}\Omega$	
40	26.16V	0.036uA	$314 \mathrm{m}\Omega$	25.98V	0.021uA	$310 \mathrm{m}\Omega$	
41	25.90V	0.025uA	$314 \mathrm{m}\Omega$	26.98V	0.033uA	$314 \mathrm{m}\Omega$	
42	27.11V	0.036uA	$315 \mathrm{m}\Omega$	26.53V	0.030uA	$313 \mathrm{m}\Omega$	
43	27.10V	0.022uA	$316 \text{m}\Omega$	26.78V	0.029uA	$310 \mathrm{m}\Omega$	
44	25.92V	0.037uA	$309 \mathrm{m}\Omega$	26.48V	0.027uA	$311 \text{m}\Omega$	
45	26.31V	0.035uA	$312 \text{m}\Omega$	27.00V	0.022uA	$311 \mathrm{m}\Omega$	
46	26.56V	0.018uA	$313 \mathrm{m}\Omega$	26.17V	0.027uA	$308 \mathrm{m}\Omega$	
47	26.93V	0.022uA	$309 \mathrm{m}\Omega$	27.20V	0.031uA	$310 \mathrm{m}\Omega$	
48	26.12V	0.022uA	$317 \mathrm{m}\Omega$	26.32V	0.028uA	$313 \mathrm{m}\Omega$	
49	26.00V	0.036uA	$314 \mathrm{m}\Omega$	25.92V	0.034uA	$309 \mathrm{m}\Omega$	
50	26.33V	0.034uA	$311 \mathrm{m}\Omega$	26.51V	0.030uA	$309 \mathrm{m}\Omega$	
51	26.50V	0.030uA	$314 \mathrm{m}\Omega$	26.45V	0.020uA	$308 \mathrm{m}\Omega$	
52	26.90V	0.030uA	316mΩ	26.01V	0.025uA	316mΩ	
53	26.26V	0.026uA	$308 \mathrm{m}\Omega$	25.89V	0.034uA	$310 \mathrm{m}\Omega$	
54	27.22V	0.035uA	$315 \mathrm{m}\Omega$	26.29V	0.022uA	311mΩ	
55	26.13V	0.020uA	$312 \mathrm{m}\Omega$	26.54V	0.019uA	$308 \mathrm{m}\Omega$	
56	26.93V	0.030uA	312mΩ	26.38V	0.030uA	$314 \mathrm{m}\Omega$	
57	26.83V	0.033uA	313mΩ	27.16V	0.032uA	$316$ m $\Omega$	
58	26.41V	0.019uA	310mΩ	26.37V	0.021uA	314mΩ	



# SeCoS Corporation

## **Temperature Cycle Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID=250µA ; IDSS < 1.0µA@VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.21 ~ 2017.05.12

Test Standard: JESD22 STANDARD Method-A104

Operator: Leo Hsia

Test Result: PASS

lest Kesuit.	PASS						
		Before		After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)	
59	27.22V	0.020uA	$314 \mathrm{m}\Omega$	26.52V	0.028uA	$309 \mathrm{m}\Omega$	
60	26.66V	0.028uA	$313$ m $\Omega$	27.07V	0.022uA	$310 \mathrm{m}\Omega$	
61	26.49V	0.028uA	311mΩ	26.51V	0.027uA	$312 \mathrm{m}\Omega$	
62	26.84V	0.024uA	$314 \mathrm{m}\Omega$	27.09V	0.023uA	$311 \mathrm{m}\Omega$	
63	26.05V	0.025uA	$310 \mathrm{m}\Omega$	26.71V	0.020uA	$311 \mathrm{m}\Omega$	
64	26.14V	0.019uA	$309 \mathrm{m}\Omega$	27.05V	0.022uA	$310 \mathrm{m}\Omega$	
65	27.23V	0.018uA	311mΩ	26.98V	0.023uA	$312 \mathrm{m}\Omega$	
66	26.34V	0.033uA	$313 \mathrm{m}\Omega$	26.77V	0.021uA	$312 \mathrm{m}\Omega$	
67	26.43V	0.031uA	$311 \text{m}\Omega$	27.01V	0.024uA	$316 \mathrm{m}\Omega$	
68	26.75V	0.027uA	$316$ m $\Omega$	25.89V	0.018uA	$311 \text{m}\Omega$	
69	25.97V	0.023uA	$314 \mathrm{m}\Omega$	27.16V	0.029uA	$314 \mathrm{m}\Omega$	
70	26.71V	0.024uA	$317 \mathrm{m}\Omega$	26.40V	0.020uA	$316 \mathrm{m}\Omega$	
71	26.25V	0.021uA	$316$ m $\Omega$	26.83V	0.030uA	$316 \mathrm{m}\Omega$	
72	26.99V	0.019uA	$312 \mathrm{m}\Omega$	25.98V	0.030uA	$313 \mathrm{m}\Omega$	
73	26.47V	0.034uA	$313 \mathrm{m}\Omega$	26.23V	0.032uA	$309 \mathrm{m}\Omega$	
74	26.26V	0.031uA	$312 \mathrm{m}\Omega$	27.05V	0.022uA	$317 \mathrm{m}\Omega$	
75	26.55V	0.033uA	$311 \text{m}\Omega$	27.16V	0.036uA	$314 \text{m}\Omega$	
76	26.91V	0.022uA	$313 \mathrm{m}\Omega$	26.59V	0.035uA	310mΩ	
77	26.34V	0.025uA	$315 \mathrm{m}\Omega$	26.68V	0.018uA	$313 \mathrm{m}\Omega$	

Made By: King Huang Approval: Peter Yang



# **High Temperature High Humidity Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$ ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.28 ~ 2017.05.10

Test Standard: JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

	Before			After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)	
1	26.55V	0.030uA	$313 \mathrm{m}\Omega$	26.58V	0.024uA	$313 \text{m}\Omega$	
2	26.43V	0.032uA	$310 \mathrm{m}\Omega$	26.97V	0.019uA	$310 \mathrm{m}\Omega$	
3	26.11V	0.018uA	$313 \mathrm{m}\Omega$	27.12V	0.029uA	$311 \mathrm{m}\Omega$	
4	26.47V	0.030uA	311mΩ	26.45V	0.020uA	$315 \mathrm{m}\Omega$	
5	27.25V	0.019uA	309mΩ	26.74V	0.022uA	$315 \mathrm{m}\Omega$	
6	26.18V	0.036uA	$315 \mathrm{m}\Omega$	26.83V	0.026uA	$314 \mathrm{m}\Omega$	
7	25.97V	0.017uA	311mΩ	26.93V	0.022uA	$311 \mathrm{m}\Omega$	
8	26.36V	0.034uA	315mΩ	26.60V	0.034uA	$317 \mathrm{m}\Omega$	
9	26.22V	0.035uA	314mΩ	27.21V	0.035uA	$313 \mathrm{m}\Omega$	
10	26.91V	0.032uA	$308 \mathrm{m}\Omega$	27.15V	0.020uA	$312 \mathrm{m}\Omega$	
11	27.22V	0.019uA	315mΩ	26.70V	0.036uA	316mΩ	
12	27.06V	0.023uA	$313 \mathrm{m}\Omega$	26.41V	0.019uA	$312 \mathrm{m}\Omega$	
13	26.64V	0.032uA	$312 \mathrm{m}\Omega$	26.36V	0.029uA	$314 \mathrm{m}\Omega$	
13	26.19V	0.032uA	$314 \mathrm{m}\Omega$	26.79V	0.033uA	$308 \mathrm{m}\Omega$	
15	26.88V	0.031uA	$311 \mathrm{m}\Omega$	26.02V	0.034uA	$314 \mathrm{m}\Omega$	
16	26.82V	0.032uA	$315 \mathrm{m}\Omega$	26.59V	0.025uA	$313 \mathrm{m}\Omega$	
17	26.82V	0.028uA	$313 \mathrm{m}\Omega$	26.41V	0.020uA	$314 \mathrm{m}\Omega$	
18	26.84V	0.027uA	$314 \mathrm{m}\Omega$	26.03V	0.036uA	$309 \mathrm{m}\Omega$	
19	26.48V	0.027uA	$312 \mathrm{m}\Omega$	26.93V	0.032uA	$309 \mathrm{m}\Omega$	
20	26.20V	0.029uA	$309 \mathrm{m}\Omega$	26.85V	0.028uA	$313 \mathrm{m}\Omega$	
21	26.94V	0.023uA	$314 \mathrm{m}\Omega$	26.95V	0.023uA	$314 \mathrm{m}\Omega$	
22	25.87V	0.036uA	$310 \mathrm{m}\Omega$	26.85V	0.034uA	$308 \mathrm{m}\Omega$	
23	26.14V	0.026uA	$313 \mathrm{m}\Omega$	26.45V	0.017uA	$309 \mathrm{m}\Omega$	
24	26.25V	0.017uA	311mΩ	27.00V	0.032uA	310mΩ	
25	26.12V	0.024uA	$314 \mathrm{m}\Omega$	26.87V	0.024uA	309mΩ	
26	26.06V	0.030uA	$312 \mathrm{m}\Omega$	26.27V	0.017uA	309mΩ	
27	26.98V	0.029uA	$315 \mathrm{m}\Omega$	26.08V	0.033uA	311mΩ	
28	25.98V	0.033uA	$311 \text{m}\Omega$	25.94V	0.034uA	$314 \text{m}\Omega$	
29	26.31V	0.031uA	311mΩ	26.69V	0.027uA	311mΩ	



# **High Temperature High Humidity Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$ ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

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

Test Date: 2017.03.28 ~ 2017.05.10

Test Standard: JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Pegult. DACC

Test Result:	PASS						
		Before		After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	RDS(ON)	
30	27.25V	0.032uA	$314 \mathrm{m}\Omega$	26.54V	0.024uA	$311 \text{m}\Omega$	
31	26.01V	0.035uA	$316$ m $\Omega$	26.85V	0.029uA	$308 \mathrm{m}\Omega$	
32	27.21V	0.036uA	$312 \mathrm{m}\Omega$	27.18V	0.032uA	$309 \mathrm{m}\Omega$	
33	25.95V	0.030uA	$315 \mathrm{m}\Omega$	25.89V	0.021uA	$309 \mathrm{m}\Omega$	
34	27.09V	0.019uA	$310 \mathrm{m}\Omega$	26.67V	0.019uA	$312 \text{m}\Omega$	
35	26.61V	0.033uA	$315 \mathrm{m}\Omega$	26.02V	0.022uA	$313 \text{m}\Omega$	
36	26.76V	0.028uA	$311 \text{m}\Omega$	26.95V	0.028uA	$312 \text{m}\Omega$	
37	26.07V	0.027uA	$316$ m $\Omega$	26.75V	0.021uA	$310 \text{m}\Omega$	
38	27.10V	0.032uA	$316 \mathrm{m}\Omega$	26.35V	0.020uA	$313 \mathrm{m}\Omega$	
39	27.20V	0.031uA	$311 \text{m}\Omega$	26.41V	0.031uA	$310 \text{m}\Omega$	
40	26.20V	0.022uA	$316 \mathrm{m}\Omega$	26.84V	0.032uA	$314 \mathrm{m}\Omega$	
41	26.61V	0.026uA	$308 \mathrm{m}\Omega$	26.90V	0.024uA	$309 \mathrm{m}\Omega$	
42	26.09V	0.037uA	$314 \mathrm{m}\Omega$	26.44V	0.018uA	$312 \text{m}\Omega$	
43	26.29V	0.026uA	$310 \mathrm{m}\Omega$	26.51V	0.019uA	$309 \mathrm{m}\Omega$	
44	27.11V	0.028uA	$310 \mathrm{m}\Omega$	26.90V	0.017uA	$310 \text{m}\Omega$	
45	26.61V	0.024uA	$313 \mathrm{m}\Omega$	26.71V	0.018uA	$312 \text{m}\Omega$	
46	26.70V	0.020uA	$311 \text{m}\Omega$	27.15V	0.023uA	$317 \mathrm{m}\Omega$	
47	27.12V	0.018uA	$309 \mathrm{m}\Omega$	26.99V	0.034uA	$316 \text{m}\Omega$	
48	26.61V	0.021uA	$311 \text{m}\Omega$	26.65V	0.032uA	$311 \text{m}\Omega$	
49	26.17V	0.033uA	$315 \mathrm{m}\Omega$	27.04V	0.033uA	$317 \mathrm{m}\Omega$	
50	26.16V	0.029uA	$309 \mathrm{m}\Omega$	26.95V	0.025uA	$309 \mathrm{m}\Omega$	
51	26.59V	0.027uA	$311 \text{m}\Omega$	27.03V	0.021uA	$316 \text{m}\Omega$	
52	26.53V	0.024uA	$311 \text{m}\Omega$	26.97V	0.028uA	$316 \text{m}\Omega$	
53	26.94V	0.020uA	$312 \mathrm{m}\Omega$	26.62V	0.022uA	$313 \text{m}\Omega$	
54	27.07V	0.020uA	$308 \mathrm{m}\Omega$	25.98V	0.024uA	$308 \mathrm{m}\Omega$	
55	26.59V	0.021uA	$313 \mathrm{m}\Omega$	26.99V	0.032uA	$316 \mathrm{m}\Omega$	
56	26.80V	0.023uA	311mΩ	26.11V	0.022uA	$308 \mathrm{m}\Omega$	
57	26.15V	0.027uA	$312 \mathrm{m}\Omega$	27.00V	0.029uA	$312 \mathrm{m}\Omega$	
58	26.40V	0.036uA	316mΩ	26.15V	0.035uA	$312m\Omega$	



## **High Temperature High Humidity Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$ ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition:  $85\pm2^{\circ}$ C,  $85\pm5$ %RH, 1000Hrs

Test Date: 2017.03.28 ~ 2017.05.10

Test Standard: JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

Test Result:	PASS					
		Before			After	
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)
59	26.81V	0.022uA	$313 \mathrm{m}\Omega$	26.14V	0.028uA	$312 \mathrm{m}\Omega$
60	25.96V	0.025uA	$311 \mathrm{m}\Omega$	25.94V	0.032uA	$315 \mathrm{m}\Omega$
61	26.66V	0.019uA	$316 \mathrm{m}\Omega$	26.59V	0.032uA	$313 \mathrm{m}\Omega$
62	25.93V	0.035uA	$314 \mathrm{m}\Omega$	25.92V	0.031uA	$313 \mathrm{m}\Omega$
63	26.42V	0.025uA	311mΩ	26.42V	0.032uA	$315 \mathrm{m}\Omega$
64	26.28V	0.023uA	$310 \mathrm{m}\Omega$	26.05V	0.022uA	316mΩ
65	27.25V	0.021uA	$315 \mathrm{m}\Omega$	26.52V	0.032uA	$317 \mathrm{m}\Omega$
66	26.46V	0.020uA	$316 \mathrm{m}\Omega$	26.00V	0.025uA	$310 \mathrm{m}\Omega$
67	26.33V	0.027uA	$314 \mathrm{m}\Omega$	27.01V	0.028uA	$312 \mathrm{m}\Omega$
68	26.56V	0.026uA	$310 \mathrm{m}\Omega$	26.19V	0.029uA	$313 \mathrm{m}\Omega$
69	26.49V	0.036uA	$314 \mathrm{m}\Omega$	25.88V	0.022uA	$315 \mathrm{m}\Omega$
70	26.84V	0.020uA	$312 \mathrm{m}\Omega$	26.95V	0.017uA	316mΩ
71	25.90V	0.022uA	$308$ m $\Omega$	26.96V	0.024uA	$309 \mathrm{m}\Omega$
72	27.14V	0.032uA	$316$ m $\Omega$	27.26V	0.031uA	$314 \mathrm{m}\Omega$
73	27.11V	0.035uA	$315 \mathrm{m}\Omega$	26.01V	0.025uA	$315 \mathrm{m}\Omega$
74	27.10V	0.034uA	$317 \mathrm{m}\Omega$	26.18V	0.018uA	$312 \mathrm{m}\Omega$
75	26.18V	0.019uA	$313 \mathrm{m}\Omega$	27.19V	0.024uA	$314 \mathrm{m}\Omega$
76	26.27V	0.027uA	$317 \mathrm{m}\Omega$	26.79V	0.023uA	$312 \mathrm{m}\Omega$
77	25.93V	0.018uA	$312 \mathrm{m}\Omega$	27.25V	0.018uA	310mΩ

Made By: King Huang Approval: Peter Yang



# **High Temper High Humidity Reverse Bies Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$ ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition: 85±2°C, 85±5%RH, 80%VR, 1000Hrs

Test Date: 2017.03.28 ~ 2017.05.10

Test Standard: JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Pegult. DACC

Test Result:	PASS			1				
		Before			6.76V $0.020uA$ $312mΩ$ 6.80V $0.034uA$ $308mΩ$ 7.19V $0.035uA$ $311mΩ$ 6.32V $0.033uA$ $316mΩ$ 6.50V $0.025uA$ $312mΩ$ 6.30V $0.023uA$ $316mΩ$ 6.65V $0.019uA$ $310mΩ$ 6.28V $0.036uA$ $315mΩ$ 6.61V $0.022uA$ $310mΩ$ 6.03V $0.030uA$ $312mΩ$ 6.88V $0.033uA$ $310mΩ$			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)		
1	27.00V	0.029uA	$309 \mathrm{m}\Omega$	26.76V	0.020uA	$312 \text{m}\Omega$		
2	26.74V	0.027uA	$316 \mathrm{m}\Omega$	26.80V	0.034uA	$308 \mathrm{m}\Omega$		
3	26.87V	0.023uA	$314 \mathrm{m}\Omega$	27.19V	0.035uA	$311 \text{m}\Omega$		
4	26.11V	0.034uA	$316 \mathrm{m}\Omega$	26.32V	0.033uA	$316 \text{m}\Omega$		
5	27.09V	0.019uA	$308 \mathrm{m}\Omega$	26.50V	0.025uA	$312 \text{m}\Omega$		
6	25.94V	0.031uA	$312 \text{m}\Omega$	26.30V	0.023uA	$316 \text{m}\Omega$		
7	26.04V	0.027uA	$310 \mathrm{m}\Omega$	26.65V	0.019uA	$310 \text{m}\Omega$		
8	26.11V	0.030uA	$312 \text{m}\Omega$	26.28V	0.036uA	$315 \text{m}\Omega$		
9	27.19V	0.020uA	$312 \text{m}\Omega$	26.61V	0.022uA	$310 \text{m}\Omega$		
10	27.06V	0.018uA	$315 \mathrm{m}\Omega$	26.03V	0.030uA	$312 \text{m}\Omega$		
11	27.13V	0.030uA	$314 \mathrm{m}\Omega$	26.88V	0.033uA	$310 \mathrm{m}\Omega$		
12	27.01V	0.035uA	$310 \mathrm{m}\Omega$	25.89V	0.034uA	$314 \text{m}\Omega$		
13	25.90V	0.019uA	$314 \mathrm{m}\Omega$	26.95V	0.025uA	$313 \mathrm{m}\Omega$		
13	25.98V	0.036uA	$315 \mathrm{m}\Omega$	27.27V	0.029uA	$310 \mathrm{m}\Omega$		
15	26.98V	0.024uA	$310 \mathrm{m}\Omega$	26.03V	0.026uA	$311 \text{m}\Omega$		
16	26.53V	0.024uA	$309 \mathrm{m}\Omega$	26.61V	0.028uA	$308 \mathrm{m}\Omega$		
17	26.79V	0.020uA	$312 \text{m}\Omega$	27.17V	0.019uA	$315 \mathrm{m}\Omega$		
18	26.98V	0.024uA	$312 \text{m}\Omega$	26.56V	0.017uA	$312 \text{m}\Omega$		
19	26.02V	0.020uA	$313 \mathrm{m}\Omega$	26.51V	0.018uA	$314 \mathrm{m}\Omega$		
20	26.56V	0.019uA	$315 \mathrm{m}\Omega$	25.92V	0.019uA	$312 \mathrm{m}\Omega$		
21	27.15V	0.031uA	$309 \mathrm{m}\Omega$	27.25V	0.033uA	$314 \mathrm{m}\Omega$		
22	26.58V	0.033uA	$315 \mathrm{m}\Omega$	26.57V	0.017uA	$309 \mathrm{m}\Omega$		
23	26.35V	0.021uA	$310 \mathrm{m}\Omega$	25.94V	0.028uA	$310 \mathrm{m}\Omega$		
24	26.86V	0.033uA	$315 \mathrm{m}\Omega$	26.47V	0.033uA	$315 \mathrm{m}\Omega$		
25	26.55V	0.033uA	$309 \mathrm{m}\Omega$	26.65V	0.028uA	310mΩ		
26	27.00V	0.019uA	$312 \mathrm{m}\Omega$	27.10V	0.033uA	$313 \mathrm{m}\Omega$		
27	26.78V	0.030uA	316mΩ	26.57V	0.021uA	316mΩ		
28	27.13V	0.035uA	$315 \mathrm{m}\Omega$	26.71V	0.017uA	316mΩ		
29	26.88V	0.024uA	316mΩ	26.16V	0.032uA	$315 \mathrm{m}\Omega$		



# **High Temper High Humidity Reverse Bies Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$ ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition: 85±2°C, 85±5%RH, 80%VR, 1000Hrs

Test Date: 2017.03.28 ~ 2017.05.10

Test Standard: JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result. PASS

		Before			After         IDSS         RDS(ON)           0.025uA         315mΩ           0.032uA         310mΩ           0.035uA         311mΩ           0.037uA         311mΩ           0.022uA         314mΩ           0.035uA         309mΩ           0.026uA         309mΩ           0.025uA         317mΩ           0.022uA         313mΩ           0.036uA         315mΩ           0.027uA         309mΩ           0.027uA         309mΩ           0.032uA         313mΩ           0.032uA         316mΩ           0.036uA         316mΩ           0.021uA         312mΩ           0.021uA         312mΩ           0.035uA         315mΩ           0.036uA         315mΩ           0.036uA         315mΩ           0.036uA         315mΩ           0.036uA         315mΩ           0.036uA         315mΩ           0.036uA         315mΩ		
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)	
30	26.86V	0.033uA	$314 \mathrm{m}\Omega$	26.37V	0.025uA	$315 \text{m}\Omega$	
31	27.24V	0.024uA	$310 \mathrm{m}\Omega$	26.75V	0.032uA	310mΩ	
32	26.54V	0.023uA	$315 \mathrm{m}\Omega$	26.24V	0.035uA	311mΩ	
33	26.60V	0.035uA	$313 \mathrm{m}\Omega$	27.18V	0.037uA	311mΩ	
34	26.25V	0.030uA	$310 \mathrm{m}\Omega$	26.42V	0.022uA	$314 \mathrm{m}\Omega$	
35	26.62V	0.037uA	$311 \text{m}\Omega$	26.78V	0.035uA	$309 \mathrm{m}\Omega$	
36	26.11V	0.029uA	$314 \mathrm{m}\Omega$	26.18V	0.026uA	309mΩ	
37	27.12V	0.021uA	$313 \mathrm{m}\Omega$	26.64V	0.025uA	$317 \mathrm{m}\Omega$	
38	26.84V	0.021uA	$310 \mathrm{m}\Omega$	26.41V	0.022uA	$313 \mathrm{m}\Omega$	
39	26.45V	0.022uA	$311 \mathrm{m}\Omega$	25.91V	0.036uA	$315 \mathrm{m}\Omega$	
40	26.16V	0.022uA	$313 \mathrm{m}\Omega$	26.88V	0.018uA	$309$ m $\Omega$	
41	26.04V	0.020uA	$313 \mathrm{m}\Omega$	26.58V	0.020uA	$317 \mathrm{m}\Omega$	
42	26.67V	0.032uA	$314 \mathrm{m}\Omega$	26.47V	0.027uA	309mΩ	
43	26.47V	0.027uA	$315 \mathrm{m}\Omega$	26.13V	0.032uA	$313 \mathrm{m}\Omega$	
44	27.15V	0.025uA	$312 \mathrm{m}\Omega$	26.20V	0.021uA	$309 \mathrm{m}\Omega$	
45	26.65V	0.031uA	$310 \mathrm{m}\Omega$	26.28V	0.036uA	316mΩ	
46	26.02V	0.028uA	$315 \mathrm{m}\Omega$	26.93V	0.025uA	$316$ m $\Omega$	
47	26.50V	0.022uA	$314 \mathrm{m}\Omega$	27.23V	0.021uA	$312 \mathrm{m}\Omega$	
48	25.91V	0.029uA	$315 \mathrm{m}\Omega$	27.01V	0.021uA	311mΩ	
49	26.85V	0.030uA	$316 \mathrm{m}\Omega$	26.11V	0.035uA	315mΩ	
50	26.75V	0.033uA	$315 \mathrm{m}\Omega$	27.13V	0.031uA	$313 \mathrm{m}\Omega$	
51	26.99V	0.020uA	$310 \mathrm{m}\Omega$	26.06V	0.036uA	$308 \mathrm{m}\Omega$	
52	26.60V	0.028uA	$316 \mathrm{m}\Omega$	25.97V	0.027uA	310mΩ	
53	26.07V	0.020uA	$313 \mathrm{m}\Omega$	27.19V	0.035uA	313mΩ	
54	26.07V	0.019uA	$313 \mathrm{m}\Omega$	27.06V	0.025uA	311mΩ	
55	25.98V	0.018uA	311mΩ	26.06V	0.022uA	311mΩ	
56	26.07V	0.029uA	$313 \mathrm{m}\Omega$	26.56V	0.024uA	316mΩ	
57	27.06V	0.028uA	$315 \mathrm{m}\Omega$	25.88V	0.023uA	316mΩ	
58	26.82V	0.030uA	315mΩ	26.04V	0.023uA	311mΩ	



# SeCoS Corporation

## **High Temper High Humidity Reverse Bies Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$ ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition: 85±2°C, 85±5%RH, 80%VR, 1000Hrs

Test Date: 2017.03.28 ~ 2017.05.10

Test Standard: JESD22 STANDARD Method-A101

Operator: Leo Hsia

Test Result: PASS

Test Result:	PASS			-		
		Before		After		
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)
59	25.90V	0.026uA	$310 \mathrm{m}\Omega$	26.26V	0.017uA	$313 \mathrm{m}\Omega$
60	26.06V	0.031uA	$316 \mathrm{m}\Omega$	26.61V	0.028uA	$309 \mathrm{m}\Omega$
61	27.16V	0.031uA	$313 \mathrm{m}\Omega$	27.05V	0.031uA	311mΩ
62	26.95V	0.020uA	$309 \mathrm{m}\Omega$	26.31V	0.033uA	$315 \mathrm{m}\Omega$
63	26.05V	0.020uA	$314 \mathrm{m}\Omega$	25.92V	0.020uA	314mΩ
64	27.07V	0.022uA	$310 \mathrm{m}\Omega$	26.66V	0.034uA	$313 \mathrm{m}\Omega$
65	26.85V	0.030uA	$312 \mathrm{m}\Omega$	25.88V	0.027uA	$316 \mathrm{m}\Omega$
66	26.70V	0.020uA	$309 \mathrm{m}\Omega$	27.25V	0.020uA	$313 \mathrm{m}\Omega$
67	26.83V	0.017uA	$311 \text{m}\Omega$	26.29V	0.022uA	$310 \mathrm{m}\Omega$
68	25.93V	0.033uA	$314 \mathrm{m}\Omega$	26.82V	0.027uA	$313 \mathrm{m}\Omega$
69	26.74V	0.036uA	$316$ m $\Omega$	26.40V	0.026uA	$315 \mathrm{m}\Omega$
70	26.61V	0.022uA	$316$ m $\Omega$	26.42V	0.022uA	$315 \mathrm{m}\Omega$
71	26.64V	0.034uA	$312 \mathrm{m}\Omega$	25.96V	0.018uA	$315 \mathrm{m}\Omega$
72	26.23V	0.028uA	$316$ m $\Omega$	26.48V	0.021uA	$315 \mathrm{m}\Omega$
73	25.94V	0.029uA	$308$ m $\Omega$	26.90V	0.036uA	$315 \mathrm{m}\Omega$
74	26.63V	0.037uA	$314 \mathrm{m}\Omega$	26.94V	0.036uA	$308 \mathrm{m}\Omega$
75	27.06V	0.018uA	$314 \mathrm{m}\Omega$	26.80V	0.026uA	$312 \text{m}\Omega$
76	27.06V	0.022uA	$310 \mathrm{m}\Omega$	26.29V	0.020uA	$316 \mathrm{m}\Omega$
77	26.68V	0.018uA	$314 \mathrm{m}\Omega$	26.50V	0.023uA	$312 \mathrm{m}\Omega$

Made By: King Huang Approval: Peter Yang



## **Resistance to Solder Heat Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

 $Test\ Condition:\ 20V < V(BR)DSS\ @ID=250\mu A\ ;\ IDSS < 1.0\mu A @VDS=20V$ 

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition:  $270^{\circ}$ C  $\pm 5^{\circ}$ C, 7Sec + 2Sec/-0Sec

Test Date: 2017.05.12

Test Standard: JESD22 STANDARD Method-B106

Operator: Leo Hsia

Test Pegult. DACC

Test Result:	PASS			1		
		Before			After	
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)
1	26.54V	0.021uA	$315 \mathrm{m}\Omega$	26.41V	0.024uA	$308 \mathrm{m}\Omega$
2	26.36V	0.032uA	$314 \mathrm{m}\Omega$	26.40V	0.033uA	$308 \mathrm{m}\Omega$
3	27.18V	0.028uA	$313 \mathrm{m}\Omega$	26.12V	0.021uA	$311 \text{m}\Omega$
4	26.89V	0.019uA	$308 \mathrm{m}\Omega$	26.10V	0.029uA	$308 \mathrm{m}\Omega$
5	26.47V	0.036uA	$317 \mathrm{m}\Omega$	26.29V	0.020uA	$310 \mathrm{m}\Omega$
6	26.86V	0.027uA	$309 \mathrm{m}\Omega$	26.90V	0.034uA	$313 \mathrm{m}\Omega$
7	26.74V	0.028uA	$314 \mathrm{m}\Omega$	26.35V	0.020uA	$309 \mathrm{m}\Omega$
8	27.23V	0.021uA	$315 \mathrm{m}\Omega$	26.11V	0.035uA	$309 \mathrm{m}\Omega$
9	25.88V	0.025uA	$314 \mathrm{m}\Omega$	27.00V	0.020uA	$311 \text{m}\Omega$
10	26.43V	0.018uA	$313 \mathrm{m}\Omega$	26.29V	0.018uA	$315 \mathrm{m}\Omega$
11	27.06V	0.031uA	$315 \mathrm{m}\Omega$	27.01V	0.021uA	$309 \mathrm{m}\Omega$
12	26.48V	0.027uA	$312 \mathrm{m}\Omega$	27.05V	0.022uA	$314 \mathrm{m}\Omega$
13	26.03V	0.023uA	$315 \mathrm{m}\Omega$	26.04V	0.032uA	$316 \mathrm{m}\Omega$
13	26.53V	0.022uA	$309 \mathrm{m}\Omega$	26.62V	0.020uA	$311 \text{m}\Omega$
15	25.95V	0.032uA	311mΩ	26.36V	0.021uA	$308 \mathrm{m}\Omega$
16	25.94V	0.035uA	$316 \mathrm{m}\Omega$	26.49V	0.022uA	$310 \mathrm{m}\Omega$
17	26.39V	0.034uA	$312 \mathrm{m}\Omega$	26.65V	0.036uA	$310 \mathrm{m}\Omega$
18	26.51V	0.034uA	$315 \mathrm{m}\Omega$	26.05V	0.029uA	$312m\Omega$
19	26.33V	0.018uA	311mΩ	26.23V	0.017uA	$312 \mathrm{m}\Omega$
20	26.77V	0.023uA	$309 \mathrm{m}\Omega$	26.26V	0.025uA	$308 \mathrm{m}\Omega$
21	26.07V	0.019uA	$312 \mathrm{m}\Omega$	26.67V	0.020uA	$315 \mathrm{m}\Omega$
22	26.30V	0.017uA	$313 \mathrm{m}\Omega$	26.36V	0.033uA	$313 \mathrm{m}\Omega$
23	26.06V	0.019uA	$317 \mathrm{m}\Omega$	26.09V	0.018uA	$317 \mathrm{m}\Omega$
24	25.90V	0.031uA	310mΩ	26.94V	0.020uA	$317 \mathrm{m}\Omega$
25	25.95V	0.029uA	$309 \mathrm{m}\Omega$	25.92V	0.022uA	$314 \mathrm{m}\Omega$
26	26.58V	0.028uA	309mΩ	27.15V	0.024uA	$315 \mathrm{m}\Omega$
27	26.53V	0.026uA	310mΩ	27.25V	0.032uA	$317 \mathrm{m}\Omega$
28	26.56V	0.021uA	316mΩ	26.60V	0.028uA	310mΩ
29	26.86V	0.032uA	316mΩ	25.94V	0.024uA	314mΩ



## **Resistance to Solder Heat Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

 $Test\ Condition:\ 20V < V(BR)DSS\ @ID=250\mu A\ ;\ IDSS < 1.0\mu A @VDS=20V$ 

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition:  $270^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , 7Sec + 2Sec/-0Sec

Test Date: 2017.05.12

Test Standard: JESD22 STANDARD Method-B106

Operator: Leo Hsia

Test Result: PASS

		Before			AfterV(BR)DSSIDSSRDS(ON)26.78V0.023uA $310m\Omega$ 26.23V0.025uA $309m\Omega$ 26.14V0.019uA $315m\Omega$ 26.08V0.017uA $310m\Omega$ 26.24V0.021uA $316m\Omega$ 26.95V0.031uA $309m\Omega$ 26.40V0.019uA $315m\Omega$ 26.46V0.036uA $313m\Omega$ 27.27V0.021uA $316m\Omega$ 27.27V0.021uA $316m\Omega$ 27.26V0.036uA $310m\Omega$ 27.26V0.029uA $315m\Omega$ 26.48V0.020uA $311m\Omega$ 26.22V0.018uA $315m\Omega$ 27.20V0.036uA $316m\Omega$ 26.26V0.034uA $313m\Omega$ 27.09V0.023uA $313m\Omega$ 26.49V0.034uA $312m\Omega$ 26.78V0.023uA $316m\Omega$ 26.28V0.017uA $312m\Omega$ 26.84V0.019uA $309m\Omega$		
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)	
30	26.68V	0.019uA	$309 \mathrm{m}\Omega$	26.78V	0.023uA	$310 \mathrm{m}\Omega$	
31	26.59V	0.018uA	$311 \mathrm{m}\Omega$	26.23V	0.025uA	$309 \mathrm{m}\Omega$	
32	26.16V	0.035uA	$316 \mathrm{m}\Omega$	26.14V	0.019uA	$315 \mathrm{m}\Omega$	
33	25.93V	0.033uA	$312 \mathrm{m}\Omega$	26.08V	0.017uA	$310 \mathrm{m}\Omega$	
34	27.14V	0.017uA	$313 \mathrm{m}\Omega$	26.24V	0.021uA	$316 \mathrm{m}\Omega$	
35	26.77V	0.029uA	312mΩ	26.95V	0.031uA	$309 \mathrm{m}\Omega$	
36	26.14V	0.024uA	316mΩ	26.40V	0.019uA	$315 \mathrm{m}\Omega$	
37	26.33V	0.017uA	315mΩ	26.06V	0.036uA	313mΩ	
38	26.76V	0.030uA	311mΩ	26.46V	0.021uA	$317 \mathrm{m}\Omega$	
39	26.59V	0.021uA	314mΩ	27.27V	0.021uA	316mΩ	
40	26.84V	0.022uA	310mΩ	26.26V	0.036uA	310mΩ	
41	26.78V	0.032uA	$312 \mathrm{m}\Omega$	27.26V	0.029uA	$315 \mathrm{m}\Omega$	
42	27.08V	0.034uA	$310 \mathrm{m}\Omega$	26.48V	0.020uA	$311 \mathrm{m}\Omega$	
43	26.36V	0.037uA	$310 \mathrm{m}\Omega$	26.22V	0.018uA	$315 \mathrm{m}\Omega$	
44	26.49V	0.032uA	$309 \mathrm{m}\Omega$	27.20V	0.036uA	$316 \mathrm{m}\Omega$	
45	26.49V	0.033uA	$312 \mathrm{m}\Omega$	26.26V	0.034uA	$313 \mathrm{m}\Omega$	
46	26.21V	0.035uA	$313 \mathrm{m}\Omega$	27.09V	0.023uA	$313 \mathrm{m}\Omega$	
47	26.12V	0.019uA	$313 \mathrm{m}\Omega$	26.49V	0.034uA	$312 \mathrm{m}\Omega$	
48	27.17V	0.025uA	$308$ m $\Omega$	26.78V	0.023uA	$316 \mathrm{m}\Omega$	
49	26.64V	0.033uA	$312 \mathrm{m}\Omega$	26.28V	0.017uA	$312 \mathrm{m}\Omega$	
50	26.88V	0.031uA	$314 \mathrm{m}\Omega$	26.84V	0.019uA	$309 \mathrm{m}\Omega$	
51	26.72V	0.033uA	$311 \text{m}\Omega$	25.97V	0.029uA	$314 \mathrm{m}\Omega$	
52	25.90V	0.028uA	$311 \text{m}\Omega$	25.92V	0.018uA	$310 \mathrm{m}\Omega$	
53	26.11V	0.025uA	$314 \mathrm{m}\Omega$	27.25V	0.020uA	$314 \mathrm{m}\Omega$	
54	25.96V	0.026uA	$313 \mathrm{m}\Omega$	26.34V	0.033uA	$317 \mathrm{m}\Omega$	
55	25.94V	0.027uA	$317 \mathrm{m}\Omega$	26.24V	0.034uA	309mΩ	
56	26.93V	0.032uA	310mΩ	26.01V	0.022uA	312mΩ	
57	25.93V	0.025uA	$309 \mathrm{m}\Omega$	26.24V	0.031uA	$314 \text{m}\Omega$	
58	26.70V	0.021uA	$315 \mathrm{m}\Omega$	26.51V	0.023uA	$313 \mathrm{m}\Omega$	



# SeCoS Corporation

## **Resistance to Solder Heat Test Data**

Report No: T170512-102 Part No: SSN3134K-C

Test Equipment: JUNO Test System DTS-1000

Test Condition: 20V < V(BR)DSS @ID= $250\mu A$ ; IDSS <  $1.0\mu A$ @VDS=20V

 $RDS(ON) < 380m\Omega@VGS=4.5V, ID=650mA$ 

Test Condition:  $270^{\circ}$ C  $\pm 5^{\circ}$ C, 7Sec + 2Sec/-0Sec

Test Date: 2017.05.12

Test Standard: JESD22 STANDARD Method-B106

Operator: Leo Hsia

Test Result: PASS

est Result.	PASS						
		Before		After			
No	V(BR)DSS	Idss	Rds(on)	V(BR)DSS	Idss	Rds(on)	
59	26.86V	0.029uA	$313 \mathrm{m}\Omega$	26.26V	0.024uA	$315 \mathrm{m}\Omega$	
60	26.61V	0.017uA	311mΩ	26.53V	0.019uA	$314 \mathrm{m}\Omega$	
61	26.81V	0.019uA	315mΩ	26.92V	0.033uA	$308 \mathrm{m}\Omega$	
62	26.22V	0.018uA	310mΩ	26.24V	0.033uA	316mΩ	
63	27.15V	0.024uA	315mΩ	26.87V	0.029uA	$308 \mathrm{m}\Omega$	
64	26.92V	0.031uA	$314 \mathrm{m}\Omega$	26.94V	0.031uA	$311 \mathrm{m}\Omega$	
65	26.82V	0.033uA	$315 \mathrm{m}\Omega$	27.19V	0.018uA	311mΩ	
66	27.21V	0.021uA	$310 \mathrm{m}\Omega$	26.15V	0.034uA	$315 \mathrm{m}\Omega$	
67	25.96V	0.032uA	$310 \mathrm{m}\Omega$	26.21V	0.022uA	$312 \mathrm{m}\Omega$	
68	26.98V	0.025uA	$312 \mathrm{m}\Omega$	27.26V	0.029uA	$310 \mathrm{m}\Omega$	
69	26.48V	0.028uA	$308 \mathrm{m}\Omega$	25.92V	0.028uA	311mΩ	
70	27.09V	0.029uA	$315 \mathrm{m}\Omega$	26.71V	0.023uA	311mΩ	
71	26.04V	0.019uA	$309 \mathrm{m}\Omega$	26.91V	0.035uA	$312 \mathrm{m}\Omega$	
72	26.71V	0.024uA	$314 \mathrm{m}\Omega$	26.44V	0.028uA	311mΩ	
73	26.47V	0.029uA	$313 \mathrm{m}\Omega$	26.43V	0.024uA	$314 \mathrm{m}\Omega$	
74	26.01V	0.027uA	$317 \mathrm{m}\Omega$	26.08V	0.028uA	$309 \mathrm{m}\Omega$	
75	25.99V	0.026uA	$312 \mathrm{m}\Omega$	25.92V	0.019uA	316mΩ	
76	26.79V	0.034uA	311mΩ	25.97V	0.030uA	312mΩ	
77	26.09V	0.035uA	$314 \mathrm{m}\Omega$	26.73V	0.034uA	$311 \mathrm{m}\Omega$	

Made By: King Huang Approval: Peter Yang