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Product/Process Change Notification

PCN#	Effective Date	Issue Date
2017-05-25C-01	2017/8/25	2017/5/25

PCN Classification	Product Category
Major	Mosfet

Subject

Production process change from lead free to halogen free.

Affected Product(s)

SC-59 Package of Mosfet, Such as attachments.

Description of Change(s)

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

Content of Change(s)

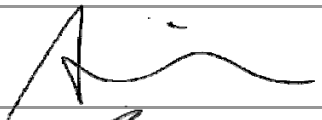
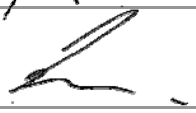
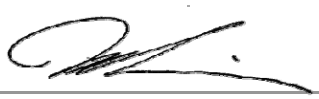
Adding “-C” to each part number.

Impact(s)

N/A

Attachment(s)

SGS report. Reliability report.

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

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

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Affected Product(s)

SMG2301	SMG2326N	SMG2359P
SMG2302	SMG2327P	SMG2361P
SMG2302N	SMG2328	SMG2370N
SMG2305	SMG2328NE	SMG2371P
SMG2305P	SMG2328S	SMG2390N
SMG2305PE	SMG2329P	SMG2392N
SMG2306A	SMG2330N	SMG2398N
SMG2306N	SMG2334N	SMG2398NE
SMG2306NE	SMG2336N	SMG3400
SMG2307PE	SMG2339P	SMG3401
SMG2310B	SMG2340N	SMG3402
SMG2310N	SMG2340NE	SMG3403
SMG2314N	SMG2342N	SMG3407
SMG2314NE	SMG2342NE	SMG5402
SMG2318N	SMG2343	SMG5403
SMG2319P	SMG2343P	SMG5406
SMG2321P	SMG2343PE	SMG5409
SMG2322N	SMG2345P	SMG2358N
SMG2325P	SMG2345PE	SMG2305A

ETERNAL ELECTRONIC MATERIALS (KUNSHAN) CO., LTD.

267 QINGYANG ROAD, KUNSHAN JIANGSU PROVINCE, CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : EPOXY MOLDING COMPOUND

SGS Job No. :	SP16-026826 - SH
Model No. :	ETERKON EK-5600G
Client Ref. Information :	EK-3600G, EK-3600GH, EK-3600GT, EK3600GTM, EK-3600GK, EK-3600GHR, EK-3600GHL, EK3600GHQ, EK-3600GTL, EK-3600GTR, EK-3600GTE, EK-5600G, EK-5600GH, EK-5600GHQ, EK-5600GHR, EK5600GHL, EK3600GTRG, EK3600GSA
Date of Sample Received :	25 Jul 2016
Testing Period :	25 Jul 2016 - 01 Aug 2016
Test Requested :	Selected test(s) as requested by client.
Test Method :	Please refer to next page(s).
Test Results :	Please refer to next page(s).
Conclusion :	Based on the performed tests on submitted sample(s), the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Marry Ma

Marry Ma
Approved Signatory

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. Testing Center-Chemical Laboratory

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA16-163584.003	Black solid block

Remarks :

(1) 1 mg/kg = 0.0001%

(2) MDL = Method Detection Limit

(3) ND = Not Detected (< MDL)

(4) "-" = Not Regulated

RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method : (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
(2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
(3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.
(4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
(5) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.
(6) With reference to IEC 62321-8 Ed.1.0 (111/321/CD), determination of phthalates by GC-MS.

Test Item(s)	Limit	Unit	MDL	*003*
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND

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Test Item(s)	Limit	Unit	MDL	*003*
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Di-butyl Phthalate (DBP)	1000	mg/kg	50	ND
Benzyl Butyl Phthalate (BBP)	1000	mg/kg	50	ND
Di-2-Ethyl Hexyl Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalates (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
(2) On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
(3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
(4) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
(5) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

Halogen

Test Method : With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

Test Item(s)	Unit	MDL	*003*
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	ND
Bromine (Br)	mg/kg	50	ND

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Test Item(s)	Unit	MDL	*003*
Iodine (I)	mg/kg	50	ND

Element(s)

Test Method : With reference to US EPA 3052:1996, analysis was performed by ICP-OES.

Test Item(s)	Unit	MDL	*003*
Beryllium (Be)	mg/kg	5	ND
Antimony (Sb)	mg/kg	10	ND

Polychlorinated Naphthalenes (PCNs)

Test Method : With reference to US EPA 8081B: 2007, analysis was performed by GC-MS

Test Item(s)	Unit	MDL	*003*
2-Chlorinated Naphthalene	mg/kg	5	ND
1,4-Dichlorinated Naphthalene	mg/kg	5	ND
1,5-Dichlorinated Naphthalene	mg/kg	5	ND
1,2-Dichlorinated Naphthalene	mg/kg	5	ND
1,8-Dichlorinated Naphthalene	mg/kg	5	ND
1,2,3-Trichlorinated Naphthalene	mg/kg	5	ND
1,2,3,4-Tetrachlorinated Naphthalene	mg/kg	5	ND
1,2,3,4,6-Pentachlorinated Naphthalene	mg/kg	5	ND
Octa-chlorinaed Naphthalene	mg/kg	5	ND
1-Chlorinated Naphthalene	mg/kg	5	ND

Organic-tin compounds

Test Method : With reference to ISO 17353: 2004 with carbamate, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	*003*
Tributyl tin (TBT)	mg/kg	0.02	ND
Tripropyltin (TPT)	mg/kg	0.02	ND
Tributyl Tin Oxide (TBTO) ◆	mg/kg	0.02	ND
Dibutyl tin (DBT)	mg/kg	0.02	ND

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Test Item(s)	Unit	MDL	*003*
Dioctyl tin (DOT)	mg/kg	0.02	ND

Notes :

(1) ◆ = TBTO are back calculated based on the worst-case scenario of TBT.

Red Phosphorus

Test Method : SGS in house method(SHTC- CHEM- SOP -342-T), Analysis was performed by ICP-OES and Pyrolysis-GC/MS

Test Item(s)	Unit	MDL	*003*
Red Phosphorus	mg/kg	500	ND

Short-chain Chlorinated Paraffin (SCCP)

Test Method : With reference to US EPA 3550C: 2007, analysis was performed by GC-ECD / GC-NCI-MS

Test Item(s)	Unit	MDL	*003*
Short-chain Chlorinated Paraffin (SCCP) (C_{10}-C_{13})	mg/kg	50	ND

Tetrabromobisphenol A (TBBP-A)

Test Method : With reference to US EPA 3540C: 1996, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	*003*
Tetrabromobisphenol A (TBBP-A)	mg/kg	10	ND

PVC (Polyvinyl chloride)

Test Method : In-house method (SHTC-CHEM-SOP-115-T), analysis was performed by FTIR/HATR.

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Test Item(s)	CAS NO.	Unit	MDL	*003*
PVC	9002-86-2	-	-	Negative

Notes :

(1) Negative=Undetectable,Positive=Detectable

Hexabromocyclododecane (HBCDD)

Test Method : With reference to IEC 62321:2008, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	*003*
Hexabromocyclododecane (HBCDD)	mg/kg	10	ND

Polychlorinated Terphenyls (PCTs)

Test Method : With reference to US EPA 8082A: 2007, analysis was performed by GC-MS

Test Item(s)	Unit	MDL	*003*
Aroclor 5432	mg/kg	5	ND
Aroclor 5442	mg/kg	5	ND

Phthalates

Test Method : With reference to EN 14372:2004, analysis was performed by GC-MS.

Test Item(s)	CAS NO.	Unit	MDL	003
Diisononyl Phthalate (DINP)	28553-12-0 /68515-48-0	%	0.01	ND
Di-n-octyl Phthalate (DNOP)	117-84-0	%	0.003	ND
Diisodecyl Phthalate (DIDP)	26761-40-0 /68515-49-1	%	0.01	ND
Dimethyl Phthalate (DMP)	131-11-3	%	0.003	ND
Diethyl Phthalate (DEP)	84-66-2	%	0.003	ND
Di-n-pentyl Phthalates (DnPP)	131-18-0	%	0.003	ND
Dicyclohexyl Phthalate (DCHP)	84-61-7	%	0.003	ND
Diphenyl Phthalate (DPhP)	84-62-8	%	0.003	ND
Dibenzyl Phthalate (DBzP)	523-31-9	%	0.003	ND
Diisooctyl Phthalate (DiOP)	27554-26-3	%	0.01	ND

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Test Item(s)	CAS NO.	Unit	MDL	003
Dipropyl Phthalate (DPrP)	131-16-8	%	0.003	ND
Dinonyl Phthalate (DNP)	84-76-4	%	0.003	ND
Di-n-hexyl Phthalate (DnHP)	84-75-3	%	0.003	ND
Diisoheptyl phthalate (DIHP)	71888-89-6	%	0.01	ND
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	%	0.003	ND
Diisopentylphthalate (DIPP)	605-50-5	%	0.003	ND
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	%	0.01	ND

Notes :

(1) DINP, DNOP, DIDP Reference information: Entry 52 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2005/84/EC).

i) Shall not be used as substances or in mixtures, in concentrations greater than 0.1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.

ii) Such toys and childcare articles containing these phthalates in a concentration greater than 0.1 % by weight of the plasticised material shall not be placed on the market.

Please refer to Regulation (EC) No 552/2009 to get more detail information

Polycyclic aromatic hydrocarbons (PAHs)

Test Method : With reference to AfPS GS 2014:01 PAK, analysis was performed by GC-MS.

Test Item(s)	Unit	MDL	003
Benzo(a)pyrene(BaP)	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF)	mg/kg	0.1	ND
Benzo(j)fluoranthene(BjF)	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	mg/kg	0.1	ND
Chrysene(CHR)	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.1	ND
Acenaphthylene(ANY)	mg/kg	0.1	ND
Acenaphthene(ANA)	mg/kg	0.1	ND
Fluorene(FLU)	mg/kg	0.1	ND
Phenanthrene(PHE)	mg/kg	0.1	ND
Pyrene(PYR)	mg/kg	0.1	ND

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Test Item(s)	Unit	MDL	003
Anthracene(ANT)	mg/kg	0.1	ND
Fluoranthene(FLT)	mg/kg	0.1	ND
Sum of Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Pyrene, Anthracene, Fluoranthene	mg/kg	-	ND
Naphthalene(NAP)	mg/kg	0.1	ND
Sum of 18 PAHs	mg/kg	-	ND

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

Parameter	Category 1	Category 2		Category 3	
	Material indented to be put in the mouth or toys with intended skin contact (longer than 30 s).	Materials not falling under category 1 with foreseeable contact to skin for longer than 30 s (long-term skin) or frequent contact.		Materials not falling under category 1 or 2 with foreseeable contact to skin for less than 30 s (short-term skin contact).	
		Toy under 2009/48/EC	Other products under ProdSG	Toy under 2009/48/EC	Other products under ProdSG
Benzo(a)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(e)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(a)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(b)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(j)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(k)fluoranthene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Chrysene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Dibenzo(a,h)anthracene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Benzo(g,h,i)perylene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Indeno(l,2,3-cd)pyrene mg/kg	< 0.2	< 0.2	< 0.5	< 0.5	< 1
Acenaphthylene, Acenaphthene, fluorene,phenanthrene , pyrene, anthracene, fluoranthene, mg/kg	< 1 Sum	< 5 Sum	< 10 Sum	< 20 Sum	< 50 Sum
Naphthalene, mg/kg	< 1	< 2		< 10	
Sum of 18 PAHs	<1	< 5	< 10	< 20	< 50

PFOS (Perfluorooctane Sulfonates) and Perfluorooctanoic Acid (PFOA)

Test Method : With reference to CEN/TS 15968:2010, analysis was performed by LC-MS.

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Test Item(s)	Limit	Unit	MDL	003
Perfluorooctane Sulfonates (PFOS)^	1000	mg/kg	10	ND
Perfluorooctanoic Acid (PFOA)	-	mg/kg	10	ND

Notes :

(1) Max. limit specified by commission regulation (EU) No. 757/2010 amending regulation (EC) No 850/2004.

(2) ^ 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.

Polychlorinated Biphenyls (PCBs)

Test Method : With reference to US EPA 8082A: 2007, analysis was performed by GC-MS

Test Item(s)	CAS NO.	Unit	MDL	003
2,4,4'-Trichlorobiphenyl (PCB 28)	7012-37-5	mg/kg	0.5	ND
2,2',5,5'-Tetrachloro-biphenyl (PCB 52)	35693-99-3	mg/kg	0.5	ND
2,2',4,5,5'-Pentachloro-biphenyl (PCB 101)	37680-73-2	mg/kg	0.5	ND
2,3',4,4',5-Pentachlorobiphenyl (PCB 118)	31508-00-6	mg/kg	0.5	ND
2,2',3,4,4',5'-Hexachloro-biphenyl (PCB 138)	35065-28-2	mg/kg	0.5	ND
2,2',4,4',5,5'-Hexachloro-biphenyl (PCB 153)	35065-27-1	mg/kg	0.5	ND
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	35065-29-3	mg/kg	0.5	ND

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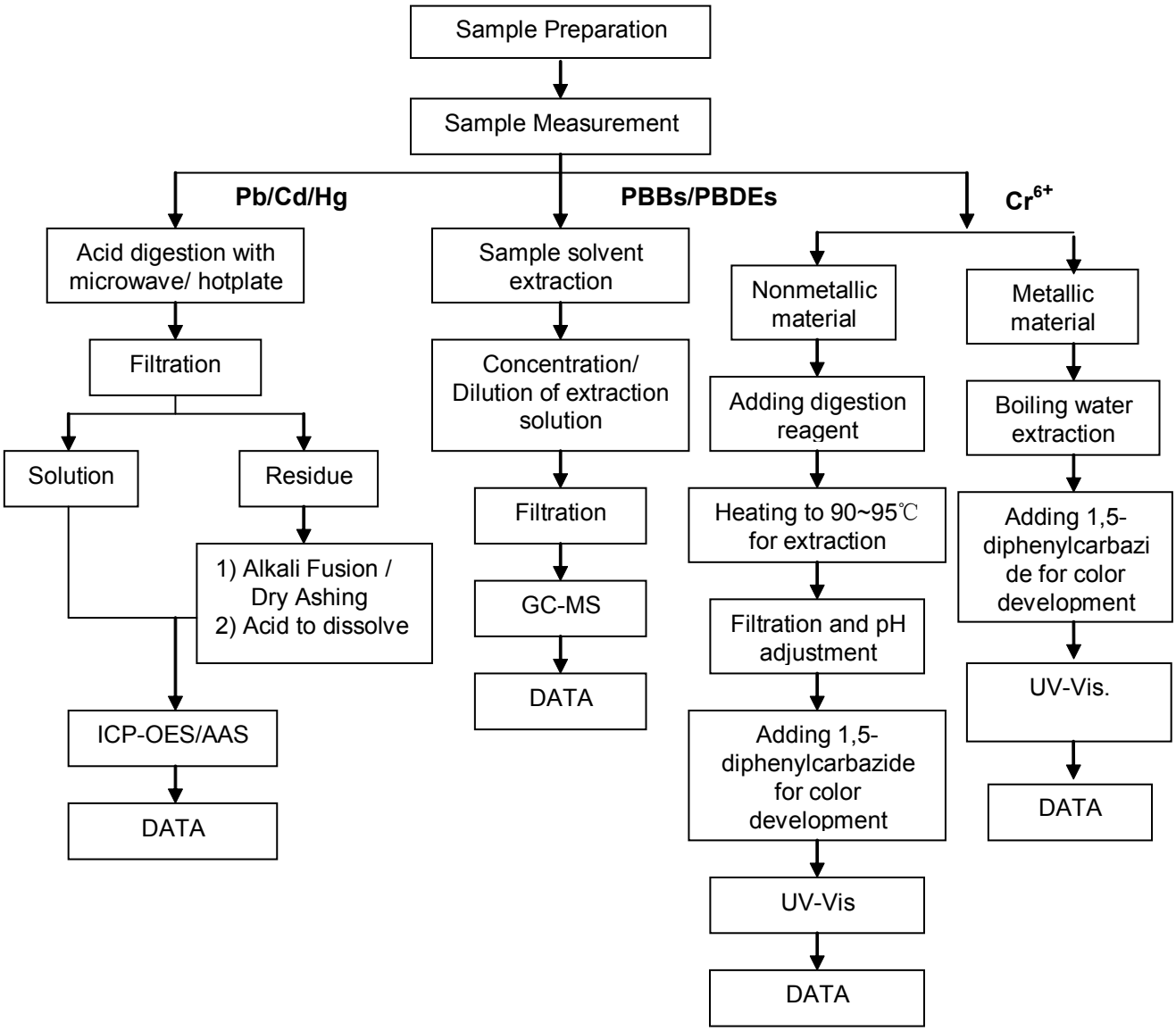
ATTACHMENTS

RoHS Testing Flow Chart

1) Name of the person who made testing: Rony Chen/Gary Xu/Sean Li/Selina Song
2) Name of the person in charge of testing: Jan Shi/Luna Xu/Jessy Huang/Stone Chen
3) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr^{6+} and PBBs/PBDEs test method excluded)



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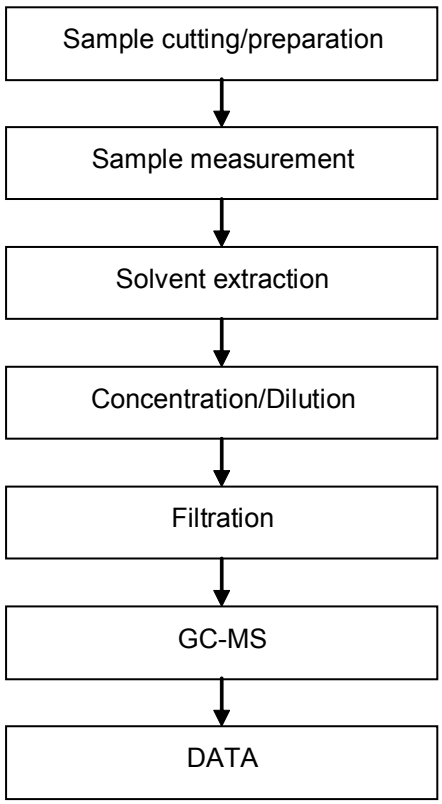
ATTACHMENTS

Phthalates Testing Flow Chart

1) Name of the person who made testing: Sherlock Gao
2) Name of the person in charge of testing: Jessy Huang



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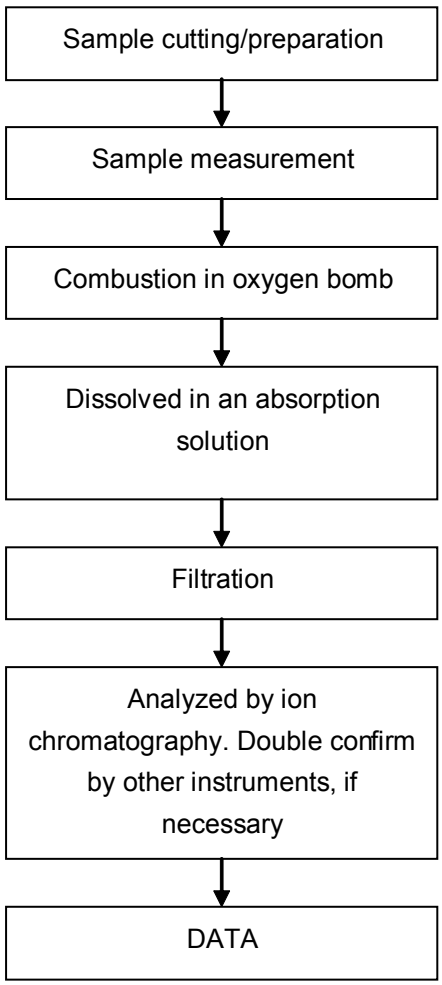
ATTACHMENTS

Halogen Testing (oxygen bomb) Flow Chart

1) Name of the person who made testing: Kevin Xu
2) Name of the person in charge of testing: Sisily Yin



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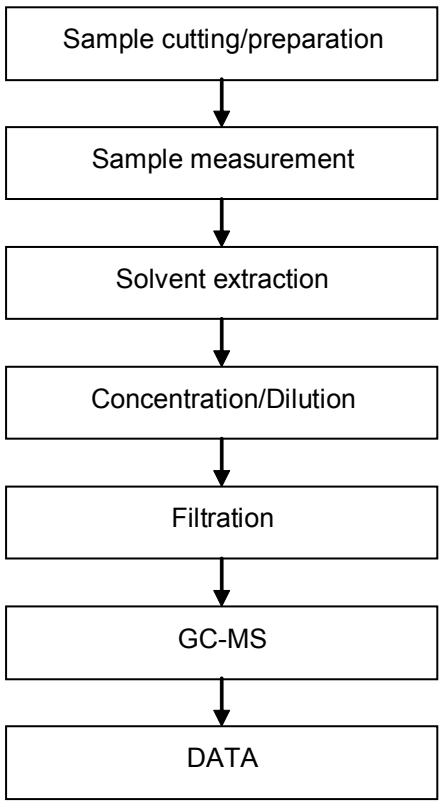
ATTACHMENTS

PAHs Testing Flow Chart

1) Name of the person who made testing: Alex Deng
2) Name of the person in charge of testing: Jessy Huang



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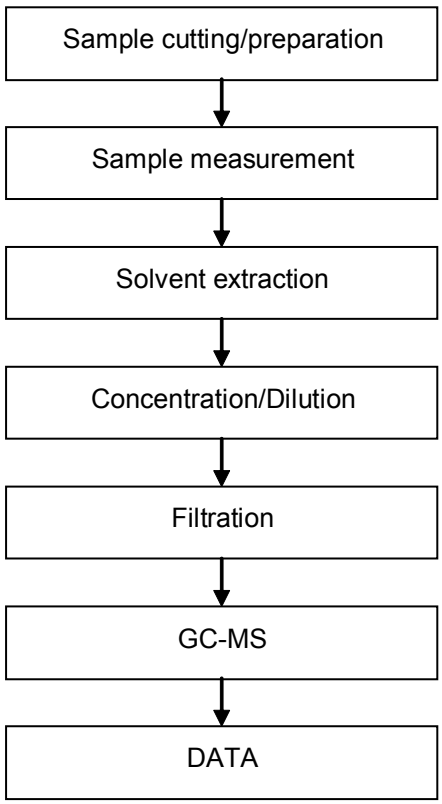
ATTACHMENTS

HBCDD Testing Flow Chart

1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Jessy Huang



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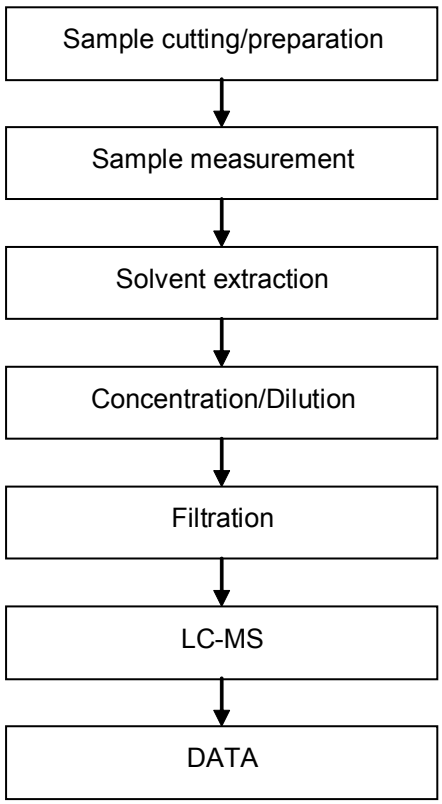
ATTACHMENTS

PFOS/PFOA Testing Flow Chart

1) Name of the person who made testing: Jane Yang
2) Name of the person in charge of testing: Myra Ma



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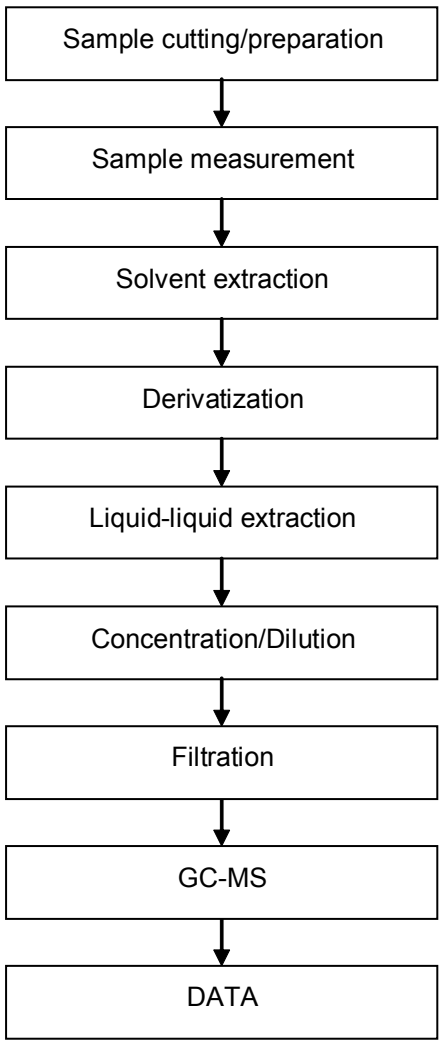
ATTACHMENTS

TBBP-A Testing Flow Chart

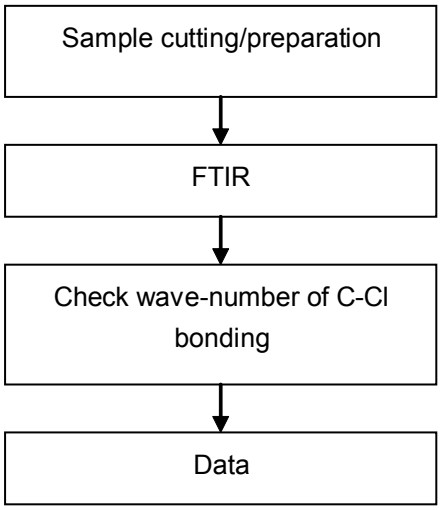
1) Name of the person who made testing: Gary Xu
2) Name of the person in charge of testing: Jessy Huang



ATTACHMENTS

PVC Testing Flow Chart

1) Name of the person who made testing: Jessica Qin
2) Name of the person in charge of testing: Linda Li



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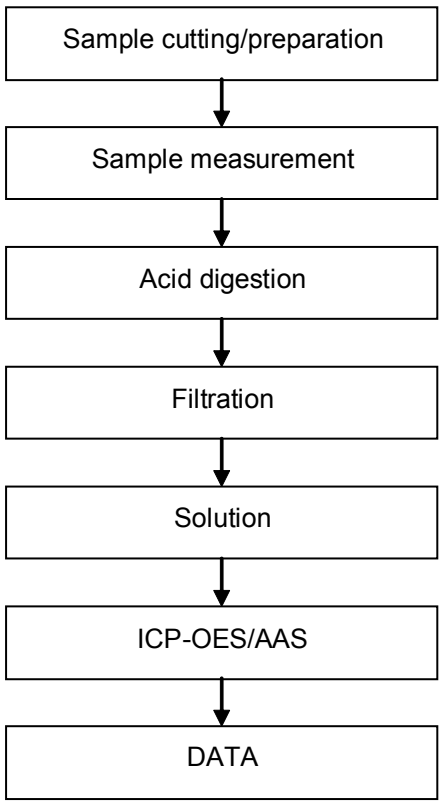
Elements Testing Flow Chart

1) Name of the person who made testing: Rony Chen/Selina song
2) Name of the person in charge of testing: Luna Xu/Jan Shi



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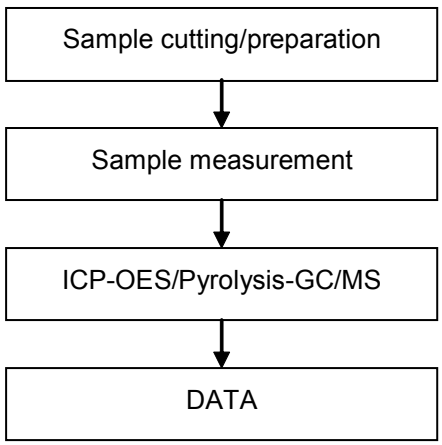
ATTACHMENTS

Red Phosphorus Testing Flow Chart

1) Name of the person who made testing: Jessica Qin

2) Name of the person in charge of testing: Linda Li



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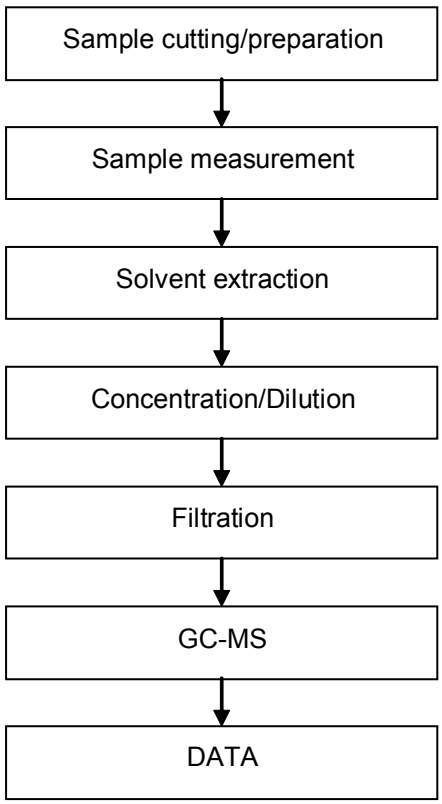
ATTACHMENTS

PCB/ PCT/ PCN Testing Flow Chart

1) Name of the person who made testing: Jenny Zhang
2) Name of the person in charge of testing: Zirco Yu



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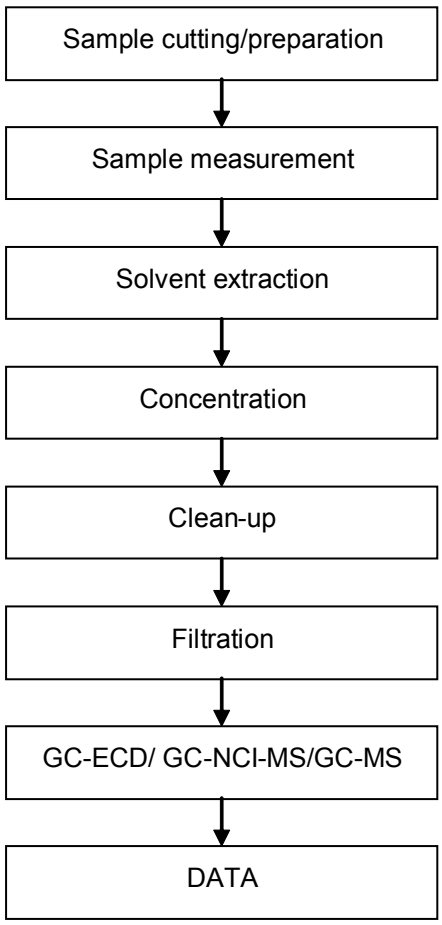
ATTACHMENTS

SCCP Testing Flow Chart

1) Name of the person who made testing: Jenny Zhang
2) Name of the person in charge of testing: Zirco Yu



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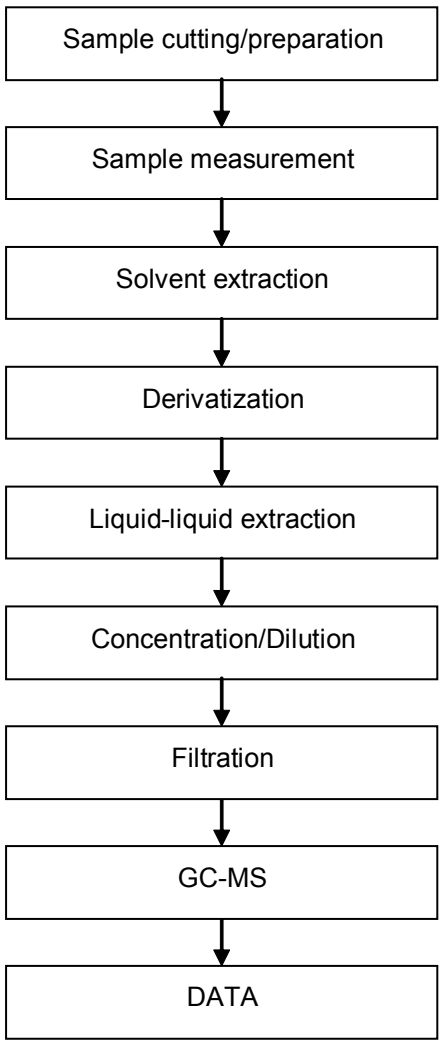
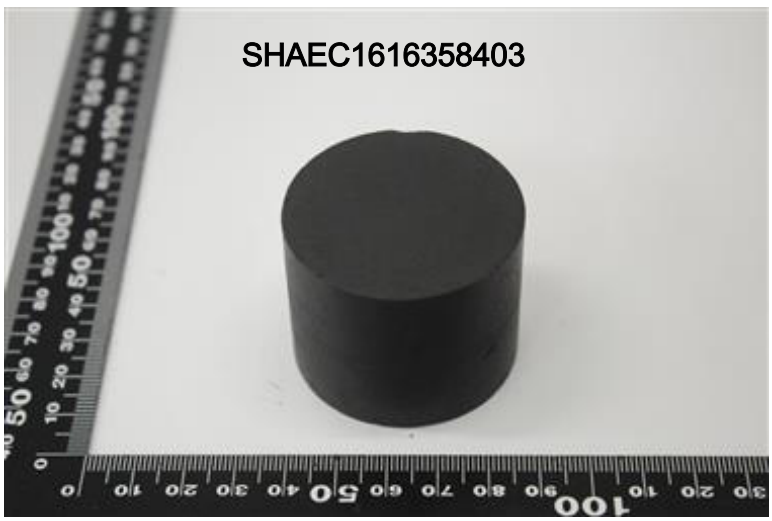
ATTACHMENTS

Organotin Testing Flow Chart

1) Name of the person who made testing: Cara Cai
2) Name of the person in charge of testing: Jessy Huang



Sample photo:



SHA16-163584.003

SGS authenticate the photo on original report only

*** End of Report ***

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SeCoS Corporation

Reliability Testing Summary Report

Date: 2017/05/12 Document No.: SK17 -05- 101

Test Item	P/N	Test Condition	(LTPD)	Sample Numbers	Allow Fall Numbers	Fall Numbers	Result
HTRB High Temp Reverse Bias	SMG2305-C	150℃ ± 5℃, 80%VR, T = 1000 hrs		77	0	0	ACC
HTSL High Temperature Storage Life	SMG2305-C	150℃, T = 1000 hrs		77	0	0	ACC
PCT Pressure Cooker Test	SMG2305-C	121℃, 29.7PSIG, 168 hrs		77	0	0	ACC
TCT Temperature Cycle Test	SMG2305-C	-55℃/30min, 150℃/30min, For 1000 Cycle		77	0	0	ACC
THT High Temperature High Humidity Test	SMG2305-C	85 ± 2℃, RH=85±5%, 1000 hrs		77	0	0	ACC
H3TRB High Temper High Humidity Reverse Bies Test	SMG2305-C	85 ± 2℃, RH=85±5%, 80%VR, 1000 hrs		77	0	0	ACC
Resistance to Solder Heat Test	SMG2305-C	270℃±5℃, 7Sec +2/-0Sec		77	0	0	ACC

Judgment:

■ **qualified** □ **unqualified**

Testing Start Date: 2017.03.20 Testing End Date: 2017.05.12

Tester: King Huang Approval: Peter Yang

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 150℃ ± 5℃, 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

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
1	-31.08V	-0.004uA	45.2mΩ	-31.00V	-0.003uA	43.7mΩ
2	-30.84V	-0.003uA	46.5mΩ	-31.66V	-0.001uA	45.3mΩ
3	-30.88V	-0.003uA	44.2mΩ	-31.08V	-0.002uA	47.5mΩ
4	-31.00V	-0.002uA	45.3mΩ	-31.68V	-0.003uA	44.3mΩ
5	-31.58V	-0.002uA	45.5mΩ	-31.56V	-0.003uA	47.8mΩ
6	-31.61V	-0.001uA	43.5mΩ	-31.39V	-0.003uA	44.2mΩ
7	-31.25V	-0.002uA	45.4mΩ	-31.75V	-0.003uA	44.1mΩ
8	-31.51V	-0.002uA	43.7mΩ	-30.93V	-0.002uA	45.9mΩ
9	-31.22V	-0.001uA	45.5mΩ	-31.59V	-0.001uA	44.3mΩ
10	-30.91V	-0.003uA	43.8mΩ	-31.44V	-0.002uA	43.5mΩ
11	-30.64V	-0.003uA	47.7mΩ	-31.63V	-0.003uA	44.4mΩ
12	-31.47V	-0.002uA	44.8mΩ	-30.69V	-0.003uA	45.9mΩ
13	-30.66V	-0.003uA	45.3mΩ	-30.87V	-0.003uA	46.7mΩ
14	-30.96V	-0.003uA	45.8mΩ	-31.12V	-0.003uA	44.5mΩ
15	-31.30V	-0.003uA	43.8mΩ	-31.63V	-0.003uA	46.1mΩ
16	-31.10V	-0.004uA	46.3mΩ	-31.32V	-0.001uA	46.9mΩ
17	-31.60V	-0.002uA	46.9mΩ	-31.23V	-0.001uA	46.3mΩ
18	-30.65V	-0.003uA	44.4mΩ	-30.66V	-0.001uA	44.4mΩ
19	-31.22V	-0.003uA	44.9mΩ	-31.71V	-0.002uA	43.8mΩ
20	-31.02V	-0.002uA	45.5mΩ	-31.10V	-0.002uA	47.1mΩ
21	-31.60V	-0.003uA	44.6mΩ	-31.71V	-0.002uA	45.0mΩ
22	-31.65V	-0.001uA	43.9mΩ	-30.98V	-0.002uA	44.1mΩ
23	-31.73V	-0.001uA	45.9mΩ	-30.83V	-0.002uA	45.9mΩ
24	-30.92V	-0.003uA	43.9mΩ	-31.00V	-0.003uA	47.2mΩ
25	-30.84V	-0.001uA	44.3mΩ	-30.84V	-0.002uA	45.9mΩ
26	-31.49V	-0.001uA	44.0mΩ	-30.73V	-0.002uA	46.9mΩ
27	-30.65V	-0.002uA	45.8mΩ	-31.67V	-0.001uA	46.2mΩ
28	-31.49V	-0.003uA	46.0mΩ	-31.54V	-0.002uA	45.1mΩ
29	-31.71V	-0.002uA	47.9mΩ	-31.36V	-0.003uA	44.6mΩ

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 150℃ ± 5℃, 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

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
30	-31.48V	-0.002uA	46.0mΩ	-31.37V	-0.001uA	44.3mΩ
31	-31.34V	-0.001uA	43.8mΩ	-31.07V	-0.001uA	44.1mΩ
32	-30.81V	-0.003uA	45.8mΩ	-30.82V	-0.003uA	47.0mΩ
33	-31.30V	-0.001uA	45.9mΩ	-30.83V	-0.003uA	45.0mΩ
34	-31.60V	-0.001uA	43.6mΩ	-31.73V	-0.001uA	44.7mΩ
35	-31.53V	-0.002uA	46.9mΩ	-30.73V	-0.002uA	47.6mΩ
36	-30.89V	-0.003uA	46.3mΩ	-31.60V	-0.001uA	47.1mΩ
37	-31.75V	-0.002uA	45.8mΩ	-30.75V	-0.003uA	43.7mΩ
38	-30.73V	-0.002uA	45.6mΩ	-30.98V	-0.002uA	43.6mΩ
39	-31.54V	-0.003uA	46.7mΩ	-30.72V	-0.002uA	45.9mΩ
40	-31.58V	-0.002uA	46.5mΩ	-31.19V	-0.003uA	45.2mΩ
41	-30.81V	-0.001uA	46.8mΩ	-31.54V	-0.004uA	44.3mΩ
42	-31.65V	-0.003uA	45.4mΩ	-31.35V	-0.002uA	47.6mΩ
43	-31.43V	-0.001uA	47.7mΩ	-31.78V	-0.002uA	46.7mΩ
44	-30.89V	-0.002uA	45.4mΩ	-31.56V	-0.002uA	46.0mΩ
45	-31.45V	-0.002uA	46.9mΩ	-30.85V	-0.003uA	45.7mΩ
46	-30.75V	-0.003uA	46.2mΩ	-30.74V	-0.003uA	44.1mΩ
47	-30.80V	-0.004uA	47.7mΩ	-30.65V	-0.003uA	44.8mΩ
48	-30.71V	-0.002uA	47.1mΩ	-31.29V	-0.003uA	43.5mΩ
49	-31.13V	-0.003uA	43.5mΩ	-31.09V	-0.002uA	44.7mΩ
50	-31.77V	-0.002uA	47.1mΩ	-30.81V	-0.001uA	45.3mΩ
51	-31.28V	-0.003uA	46.8mΩ	-30.70V	-0.002uA	44.8mΩ
52	-31.35V	-0.002uA	44.2mΩ	-31.11V	-0.002uA	46.9mΩ
53	-31.68V	-0.001uA	47.4mΩ	-31.28V	-0.002uA	47.3mΩ
54	-31.33V	-0.003uA	45.8mΩ	-30.86V	-0.001uA	46.9mΩ
55	-31.51V	-0.002uA	46.4mΩ	-31.64V	-0.003uA	46.5mΩ
56	-31.40V	-0.002uA	45.1mΩ	-30.69V	-0.002uA	45.7mΩ
57	-30.90V	-0.004uA	47.0mΩ	-31.22V	-0.001uA	43.7mΩ
58	-31.05V	-0.001uA	45.3mΩ	-30.89V	-0.001uA	43.8mΩ

SeCoS Corporation

High Temperature Reverse Bias Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 150℃ ± 5℃, 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

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
59	-31.37V	-0.001uA	43.6mΩ	-30.92V	-0.003uA	44.0mΩ
60	-30.89V	-0.002uA	46.0mΩ	-30.84V	-0.003uA	44.0mΩ
61	-31.42V	-0.003uA	45.1mΩ	-31.19V	-0.002uA	47.1mΩ
62	-31.08V	-0.002uA	46.8mΩ	-31.17V	-0.001uA	46.9mΩ
63	-31.15V	-0.003uA	46.3mΩ	-30.70V	-0.002uA	46.9mΩ
64	-30.93V	-0.002uA	45.3mΩ	-31.54V	-0.001uA	47.8mΩ
65	-31.17V	-0.002uA	45.4mΩ	-30.83V	-0.002uA	47.6mΩ
66	-31.49V	-0.003uA	44.2mΩ	-31.09V	-0.001uA	47.4mΩ
67	-30.67V	-0.003uA	45.9mΩ	-31.20V	-0.003uA	47.9mΩ
68	-31.04V	-0.001uA	47.7mΩ	-31.22V	-0.002uA	45.0mΩ
69	-31.15V	-0.003uA	45.5mΩ	-30.90V	-0.001uA	47.6mΩ
70	-30.63V	-0.002uA	43.9mΩ	-31.71V	-0.001uA	44.5mΩ
71	-31.17V	-0.001uA	45.5mΩ	-31.62V	-0.003uA	46.0mΩ
72	-31.19V	-0.002uA	47.4mΩ	-31.75V	-0.003uA	47.3mΩ
73	-31.42V	-0.002uA	46.3mΩ	-31.08V	-0.002uA	46.1mΩ
74	-31.65V	-0.002uA	47.3mΩ	-30.63V	-0.004uA	46.4mΩ
75	-30.84V	-0.002uA	44.8mΩ	-30.88V	-0.003uA	43.8mΩ
76	-31.19V	-0.003uA	45.0mΩ	-31.45V	-0.001uA	45.5mΩ
77	-31.47V	-0.002uA	44.6mΩ	-31.31V	-0.002uA	46.6mΩ

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 150℃, 1000Hrs
Test Date: 2017.03.20 ~ 2017.05.02
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
1	-30.99V	-0.002uA	47.8mΩ	-31.11V	-0.001uA	44.8mΩ
2	-31.20V	-0.003uA	46.1mΩ	-30.73V	-0.001uA	47.6mΩ
3	-31.10V	-0.002uA	44.0mΩ	-30.68V	-0.003uA	43.7mΩ
4	-31.66V	-0.003uA	47.4mΩ	-31.69V	-0.002uA	44.8mΩ
5	-31.30V	-0.003uA	46.5mΩ	-31.61V	-0.002uA	46.0mΩ
6	-31.38V	-0.002uA	47.6mΩ	-30.79V	-0.003uA	44.0mΩ
7	-31.36V	-0.003uA	45.0mΩ	-30.67V	-0.002uA	44.2mΩ
8	-31.72V	-0.002uA	47.4mΩ	-31.13V	-0.003uA	44.9mΩ
9	-31.58V	-0.003uA	43.5mΩ	-31.50V	-0.002uA	44.0mΩ
10	-31.44V	-0.001uA	46.7mΩ	-30.78V	-0.002uA	45.7mΩ
11	-31.55V	-0.002uA	45.9mΩ	-31.21V	-0.001uA	46.4mΩ
12	-30.89V	-0.001uA	46.2mΩ	-31.18V	-0.003uA	43.9mΩ
13	-30.69V	-0.003uA	45.6mΩ	-30.83V	-0.002uA	47.2mΩ
14	-31.29V	-0.002uA	46.1mΩ	-30.92V	-0.003uA	47.7mΩ
15	-30.74V	-0.002uA	46.2mΩ	-31.11V	-0.002uA	47.3mΩ
16	-31.58V	-0.003uA	44.2mΩ	-30.63V	-0.003uA	47.8mΩ
17	-31.02V	-0.002uA	47.7mΩ	-30.94V	-0.003uA	44.0mΩ
18	-31.75V	-0.003uA	47.2mΩ	-31.47V	-0.001uA	46.2mΩ
19	-30.68V	-0.002uA	46.2mΩ	-31.42V	-0.003uA	46.3mΩ
20	-31.64V	-0.003uA	47.4mΩ	-31.65V	-0.001uA	44.2mΩ
21	-31.27V	-0.003uA	47.9mΩ	-30.90V	-0.002uA	46.9mΩ
22	-31.69V	-0.001uA	46.3mΩ	-31.28V	-0.002uA	44.8mΩ
23	-31.64V	-0.001uA	46.3mΩ	-30.96V	-0.002uA	46.0mΩ
24	-31.51V	-0.003uA	45.7mΩ	-31.38V	-0.001uA	43.8mΩ
25	-31.07V	-0.001uA	47.9mΩ	-30.92V	-0.001uA	47.9mΩ
26	-30.88V	-0.003uA	46.9mΩ	-30.72V	-0.001uA	44.1mΩ
27	-31.62V	-0.003uA	46.1mΩ	-31.64V	-0.003uA	44.0mΩ
28	-30.68V	-0.003uA	45.2mΩ	-31.18V	-0.002uA	47.3mΩ
29	-31.53V	-0.002uA	47.2mΩ	-30.85V	-0.002uA	45.0mΩ

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 150℃, 1000Hrs
Test Date: 2017.03.20 ~ 2017.05.02
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
30	-31.36V	-0.002uA	44.3mΩ	-30.85V	-0.002uA	44.6mΩ
31	-31.71V	-0.003uA	46.4mΩ	-31.28V	-0.002uA	46.9mΩ
32	-31.37V	-0.003uA	43.8mΩ	-31.72V	-0.003uA	48.0mΩ
33	-31.54V	-0.002uA	45.6mΩ	-31.11V	-0.002uA	43.7mΩ
34	-31.63V	-0.002uA	47.5mΩ	-30.94V	-0.003uA	43.6mΩ
35	-30.77V	-0.003uA	45.4mΩ	-31.56V	-0.002uA	47.4mΩ
36	-31.32V	-0.003uA	46.7mΩ	-31.36V	-0.002uA	47.4mΩ
37	-30.71V	-0.002uA	45.2mΩ	-31.39V	-0.002uA	45.7mΩ
38	-30.82V	-0.001uA	46.8mΩ	-30.83V	-0.003uA	47.9mΩ
39	-31.01V	-0.003uA	47.1mΩ	-31.34V	-0.002uA	47.8mΩ
40	-30.95V	-0.003uA	43.5mΩ	-30.99V	-0.003uA	43.7mΩ
41	-30.99V	-0.003uA	44.0mΩ	-31.16V	-0.003uA	46.9mΩ
42	-31.42V	-0.003uA	47.4mΩ	-30.80V	-0.002uA	47.0mΩ
43	-31.45V	-0.001uA	45.5mΩ	-31.31V	-0.002uA	47.8mΩ
44	-31.57V	-0.002uA	46.4mΩ	-31.01V	-0.003uA	43.7mΩ
45	-31.57V	-0.003uA	44.6mΩ	-30.67V	-0.003uA	44.2mΩ
46	-30.85V	-0.002uA	47.8mΩ	-31.73V	-0.003uA	43.6mΩ
47	-31.12V	-0.002uA	47.6mΩ	-30.78V	-0.003uA	45.4mΩ
48	-31.47V	-0.002uA	46.0mΩ	-31.18V	-0.001uA	43.6mΩ
49	-31.72V	-0.001uA	43.9mΩ	-31.48V	-0.002uA	43.9mΩ
50	-31.31V	-0.003uA	45.2mΩ	-30.79V	-0.003uA	47.6mΩ
51	-31.23V	-0.001uA	44.8mΩ	-30.90V	-0.003uA	47.2mΩ
52	-31.33V	-0.003uA	47.3mΩ	-30.71V	-0.002uA	46.0mΩ
53	-31.55V	-0.002uA	47.3mΩ	-31.25V	-0.003uA	44.0mΩ
54	-30.92V	-0.002uA	47.1mΩ	-31.14V	-0.001uA	46.1mΩ
55	-30.73V	-0.002uA	46.0mΩ	-30.65V	-0.003uA	47.2mΩ
56	-30.81V	-0.001uA	46.8mΩ	-30.65V	-0.002uA	44.3mΩ
57	-31.30V	-0.001uA	43.6mΩ	-30.87V	-0.002uA	45.4mΩ
58	-31.45V	-0.003uA	45.5mΩ	-31.24V	-0.001uA	45.3mΩ

SeCoS Corporation

High Temperature Storage Life Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 150℃, 1000Hrs
Test Date: 2017.03.20 ~ 2017.05.02
Test Standard : JESD22 STANDARD Method-A103
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
59	-31.10V	-0.002uA	47.4mΩ	-31.68V	-0.003uA	43.9mΩ
60	-30.80V	-0.001uA	45.6mΩ	-30.94V	-0.002uA	43.9mΩ
61	-31.10V	-0.001uA	46.7mΩ	-31.69V	-0.003uA	45.8mΩ
62	-31.22V	-0.001uA	44.4mΩ	-31.63V	-0.002uA	47.4mΩ
63	-31.75V	-0.002uA	46.4mΩ	-31.35V	-0.002uA	43.8mΩ
64	-31.68V	-0.001uA	46.7mΩ	-31.26V	-0.001uA	47.1mΩ
65	-31.07V	-0.003uA	43.8mΩ	-31.57V	-0.002uA	47.0mΩ
66	-31.03V	-0.003uA	45.4mΩ	-30.99V	-0.002uA	44.5mΩ
67	-31.62V	-0.002uA	45.2mΩ	-30.76V	-0.003uA	47.9mΩ
68	-31.36V	-0.003uA	46.9mΩ	-31.73V	-0.003uA	45.8mΩ
69	-31.17V	-0.003uA	46.0mΩ	-31.51V	-0.001uA	47.1mΩ
70	-30.86V	-0.001uA	43.5mΩ	-31.02V	-0.002uA	43.5mΩ
71	-30.84V	-0.002uA	43.6mΩ	-31.33V	-0.001uA	45.5mΩ
72	-31.41V	-0.001uA	47.0mΩ	-31.03V	-0.003uA	45.9mΩ
73	-31.40V	-0.001uA	43.9mΩ	-30.94V	-0.001uA	45.8mΩ
74	-30.75V	-0.002uA	44.1mΩ	-31.62V	-0.003uA	44.7mΩ
75	-30.94V	-0.002uA	47.4mΩ	-31.65V	-0.002uA	43.9mΩ
76	-31.40V	-0.003uA	46.5mΩ	-30.71V	-0.002uA	43.8mΩ
77	-31.64V	-0.003uA	45.8mΩ	-30.72V	-0.003uA	46.9mΩ

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Pressure Cooker Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 121℃, 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	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
1	-31.77V	-0.002uA	43.8mΩ	-31.69V	-0.001uA	44.0mΩ
2	-31.38V	-0.001uA	43.7mΩ	-31.36V	-0.001uA	44.2mΩ
3	-31.13V	-0.002uA	43.9mΩ	-30.89V	-0.004uA	45.9mΩ
4	-31.48V	-0.002uA	44.8mΩ	-30.75V	-0.001uA	47.3mΩ
5	-31.34V	-0.003uA	43.7mΩ	-31.44V	-0.003uA	46.5mΩ
6	-31.75V	-0.003uA	46.8mΩ	-30.78V	-0.002uA	47.1mΩ
7	-31.39V	-0.003uA	46.5mΩ	-30.90V	-0.002uA	46.8mΩ
8	-30.69V	-0.003uA	46.3mΩ	-31.37V	-0.003uA	45.7mΩ
9	-31.43V	-0.002uA	44.9mΩ	-31.55V	-0.003uA	45.1mΩ
10	-31.63V	-0.003uA	44.6mΩ	-31.44V	-0.003uA	46.8mΩ
11	-31.64V	-0.003uA	46.2mΩ	-31.67V	-0.001uA	45.8mΩ
12	-31.01V	-0.002uA	44.4mΩ	-31.02V	-0.002uA	45.7mΩ
13	-31.34V	-0.003uA	44.9mΩ	-31.24V	-0.001uA	45.5mΩ
14	-31.44V	-0.003uA	47.4mΩ	-30.94V	-0.001uA	48.0mΩ
15	-30.98V	-0.002uA	47.4mΩ	-31.08V	-0.002uA	44.9mΩ
16	-31.34V	-0.002uA	46.0mΩ	-31.10V	-0.003uA	46.8mΩ
17	-31.78V	-0.003uA	47.1mΩ	-31.41V	-0.002uA	47.9mΩ
18	-31.24V	-0.002uA	47.6mΩ	-30.67V	-0.002uA	44.4mΩ
19	-30.92V	-0.003uA	44.8mΩ	-31.58V	-0.003uA	47.2mΩ
20	-31.08V	-0.001uA	44.7mΩ	-31.72V	-0.003uA	44.4mΩ
21	-31.26V	-0.002uA	46.6mΩ	-30.74V	-0.003uA	46.3mΩ
22	-31.66V	-0.003uA	46.3mΩ	-30.77V	-0.003uA	46.3mΩ
23	-31.49V	-0.003uA	47.4mΩ	-30.79V	-0.002uA	44.4mΩ
24	-30.84V	-0.002uA	47.5mΩ	-31.13V	-0.002uA	47.9mΩ
25	-30.89V	-0.003uA	46.0mΩ	-31.06V	-0.003uA	44.4mΩ
26	-30.88V	-0.003uA	47.3mΩ	-31.67V	-0.002uA	45.9mΩ
27	-31.48V	-0.001uA	46.3mΩ	-30.99V	-0.003uA	47.8mΩ
28	-31.17V	-0.003uA	46.2mΩ	-30.89V	-0.001uA	45.3mΩ
29	-31.23V	-0.003uA	46.6mΩ	-30.68V	-0.003uA	46.2mΩ

SeCoS Corporation

Pressure Cooker Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 121℃, 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	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
30	-30.88V	-0.003uA	43.7mΩ	-31.12V	-0.003uA	47.8mΩ
31	-30.79V	-0.002uA	44.1mΩ	-31.34V	-0.003uA	46.1mΩ
32	-31.27V	-0.001uA	43.7mΩ	-31.72V	-0.003uA	47.3mΩ
33	-31.06V	-0.002uA	46.8mΩ	-31.26V	-0.002uA	46.3mΩ
34	-30.77V	-0.002uA	47.3mΩ	-31.56V	-0.003uA	45.1mΩ
35	-31.34V	-0.003uA	45.6mΩ	-30.96V	-0.002uA	44.9mΩ
36	-30.77V	-0.001uA	47.8mΩ	-31.13V	-0.003uA	47.7mΩ
37	-31.75V	-0.002uA	43.7mΩ	-31.21V	-0.003uA	47.3mΩ
38	-30.67V	-0.001uA	47.4mΩ	-31.72V	-0.003uA	44.3mΩ
39	-31.17V	-0.004uA	46.2mΩ	-31.63V	-0.002uA	46.6mΩ
40	-31.56V	-0.002uA	43.5mΩ	-30.82V	-0.002uA	44.2mΩ
41	-30.94V	-0.003uA	46.2mΩ	-31.20V	-0.002uA	45.4mΩ
42	-31.63V	-0.003uA	44.9mΩ	-30.82V	-0.002uA	47.7mΩ
43	-30.89V	-0.003uA	44.9mΩ	-30.66V	-0.001uA	45.5mΩ
44	-31.15V	-0.002uA	46.7mΩ	-30.96V	-0.003uA	47.0mΩ
45	-31.42V	-0.001uA	47.0mΩ	-31.78V	-0.003uA	46.2mΩ
46	-31.06V	-0.003uA	46.7mΩ	-30.91V	-0.003uA	45.1mΩ
47	-30.94V	-0.004uA	45.2mΩ	-30.87V	-0.003uA	46.3mΩ
48	-31.04V	-0.002uA	46.9mΩ	-30.92V	-0.003uA	46.7mΩ
49	-31.07V	-0.003uA	44.5mΩ	-30.80V	-0.002uA	43.5mΩ
50	-31.45V	-0.003uA	47.7mΩ	-30.73V	-0.001uA	46.6mΩ
51	-30.77V	-0.003uA	47.3mΩ	-30.99V	-0.002uA	44.7mΩ
52	-31.16V	-0.003uA	45.3mΩ	-30.78V	-0.001uA	46.1mΩ
53	-30.67V	-0.002uA	47.8mΩ	-30.77V	-0.003uA	47.2mΩ
54	-31.04V	-0.001uA	46.3mΩ	-31.42V	-0.002uA	45.7mΩ
55	-31.46V	-0.002uA	45.9mΩ	-31.41V	-0.002uA	45.2mΩ
56	-31.29V	-0.002uA	46.0mΩ	-31.72V	-0.002uA	47.3mΩ
57	-30.97V	-0.002uA	46.1mΩ	-31.32V	-0.001uA	47.5mΩ
58	-31.47V	-0.002uA	45.0mΩ	-31.54V	-0.003uA	47.7mΩ

SeCoS Corporation

Pressure Cooker Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 121℃, 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	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
59	-31.54V	-0.001uA	46.6mΩ	-31.33V	-0.003uA	45.0mΩ
60	-30.68V	-0.002uA	44.4mΩ	-31.42V	-0.003uA	44.9mΩ
61	-31.29V	-0.002uA	47.8mΩ	-31.72V	-0.002uA	47.9mΩ
62	-30.68V	-0.002uA	46.6mΩ	-31.44V	-0.002uA	47.5mΩ
63	-30.76V	-0.001uA	48.0mΩ	-31.66V	-0.001uA	46.0mΩ
64	-30.83V	-0.003uA	46.7mΩ	-31.63V	-0.004uA	45.6mΩ
65	-30.80V	-0.003uA	45.7mΩ	-30.62V	-0.002uA	44.4mΩ
66	-30.67V	-0.003uA	47.4mΩ	-31.42V	-0.002uA	45.9mΩ
67	-30.88V	-0.002uA	43.7mΩ	-31.01V	-0.001uA	46.5mΩ
68	-31.70V	-0.003uA	44.6mΩ	-31.71V	-0.002uA	43.9mΩ
69	-31.38V	-0.002uA	44.9mΩ	-30.88V	-0.003uA	45.8mΩ
70	-31.01V	-0.002uA	45.6mΩ	-31.73V	-0.003uA	44.7mΩ
71	-30.81V	-0.003uA	46.3mΩ	-31.00V	-0.004uA	45.2mΩ
72	-31.62V	-0.003uA	47.3mΩ	-31.54V	-0.003uA	47.2mΩ
73	-31.46V	-0.003uA	45.9mΩ	-31.24V	-0.003uA	47.6mΩ
74	-31.52V	-0.001uA	46.2mΩ	-31.49V	-0.001uA	44.3mΩ
75	-31.69V	-0.002uA	45.4mΩ	-31.40V	-0.002uA	47.2mΩ
76	-31.44V	-0.003uA	44.0mΩ	-30.70V	-0.002uA	44.1mΩ
77	-31.39V	-0.003uA	46.6mΩ	-31.37V	-0.002uA	45.2mΩ

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Temperature Cycle Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2017.03.21 ~ 2017.05.12
Test Standard : JESD22 STANDARD Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
1	-31.48V	-0.001uA	44.2mΩ	-30.66V	-0.003uA	43.6mΩ
2	-30.83V	-0.001uA	43.5mΩ	-31.05V	-0.003uA	47.9mΩ
3	-31.42V	-0.003uA	45.1mΩ	-30.77V	-0.001uA	47.4mΩ
4	-30.86V	-0.001uA	44.0mΩ	-30.79V	-0.001uA	43.5mΩ
5	-31.19V	-0.001uA	44.4mΩ	-31.08V	-0.003uA	47.9mΩ
6	-31.34V	-0.001uA	44.3mΩ	-31.10V	-0.003uA	47.6mΩ
7	-31.53V	-0.001uA	47.0mΩ	-30.98V	-0.003uA	45.4mΩ
8	-31.67V	-0.003uA	45.6mΩ	-31.33V	-0.003uA	46.0mΩ
9	-30.94V	-0.003uA	44.8mΩ	-31.68V	-0.002uA	46.2mΩ
10	-31.01V	-0.002uA	46.4mΩ	-30.73V	-0.003uA	43.9mΩ
11	-31.29V	-0.001uA	47.9mΩ	-31.39V	-0.003uA	43.8mΩ
12	-30.84V	-0.002uA	45.9mΩ	-30.63V	-0.002uA	45.1mΩ
13	-31.66V	-0.003uA	47.8mΩ	-31.08V	-0.003uA	45.1mΩ
14	-30.77V	-0.003uA	46.1mΩ	-31.38V	-0.003uA	44.4mΩ
15	-31.62V	-0.003uA	48.0mΩ	-31.72V	-0.001uA	44.0mΩ
16	-31.19V	-0.003uA	44.1mΩ	-30.85V	-0.002uA	43.9mΩ
17	-31.64V	-0.003uA	43.5mΩ	-31.03V	-0.002uA	44.3mΩ
18	-31.26V	-0.001uA	45.4mΩ	-30.80V	-0.003uA	44.8mΩ
19	-31.47V	-0.002uA	44.1mΩ	-31.02V	-0.003uA	45.8mΩ
20	-30.99V	-0.002uA	43.6mΩ	-31.52V	-0.003uA	43.7mΩ
21	-30.68V	-0.003uA	46.7mΩ	-31.37V	-0.002uA	45.6mΩ
22	-31.64V	-0.001uA	46.0mΩ	-30.96V	-0.001uA	47.5mΩ
23	-31.05V	-0.003uA	45.1mΩ	-31.11V	-0.003uA	45.4mΩ
24	-31.55V	-0.003uA	47.5mΩ	-31.40V	-0.002uA	45.8mΩ
25	-31.48V	-0.001uA	45.2mΩ	-31.69V	-0.003uA	43.8mΩ
26	-31.21V	-0.002uA	46.0mΩ	-31.66V	-0.003uA	47.6mΩ
27	-31.60V	-0.003uA	47.6mΩ	-31.32V	-0.002uA	46.9mΩ
28	-30.63V	-0.002uA	45.8mΩ	-31.37V	-0.002uA	46.5mΩ
29	-30.91V	-0.001uA	46.6mΩ	-31.56V	-0.003uA	44.4mΩ

SeCoS Corporation

Temperature Cycle Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2017.03.21 ~ 2017.05.12
Test Standard : JESD22 STANDARD Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
30	-30.75V	-0.003uA	45.7mΩ	-31.72V	-0.002uA	45.3mΩ
31	-31.38V	-0.001uA	45.4mΩ	-30.74V	-0.001uA	44.9mΩ
32	-31.73V	-0.003uA	45.7mΩ	-30.88V	-0.002uA	43.8mΩ
33	-31.10V	-0.003uA	46.1mΩ	-30.77V	-0.003uA	47.0mΩ
34	-31.65V	-0.003uA	45.4mΩ	-31.27V	-0.003uA	47.2mΩ
35	-31.20V	-0.003uA	44.3mΩ	-30.87V	-0.002uA	47.4mΩ
36	-31.55V	-0.002uA	45.6mΩ	-31.12V	-0.002uA	44.4mΩ
37	-31.57V	-0.003uA	46.3mΩ	-31.23V	-0.001uA	43.8mΩ
38	-30.66V	-0.003uA	44.9mΩ	-30.65V	-0.001uA	47.9mΩ
39	-31.70V	-0.001uA	43.9mΩ	-31.33V	-0.003uA	43.4mΩ
40	-30.86V	-0.002uA	46.0mΩ	-31.52V	-0.003uA	45.8mΩ
41	-31.21V	-0.002uA	45.3mΩ	-31.50V	-0.003uA	44.3mΩ
42	-31.73V	-0.002uA	44.9mΩ	-31.08V	-0.003uA	43.5mΩ
43	-31.18V	-0.002uA	46.5mΩ	-31.22V	-0.003uA	44.5mΩ
44	-31.16V	-0.002uA	47.2mΩ	-31.56V	-0.002uA	47.8mΩ
45	-31.77V	-0.002uA	44.5mΩ	-30.69V	-0.003uA	47.6mΩ
46	-30.79V	-0.001uA	43.6mΩ	-31.25V	-0.001uA	44.5mΩ
47	-31.74V	-0.002uA	46.2mΩ	-30.70V	-0.003uA	47.5mΩ
48	-31.00V	-0.001uA	47.1mΩ	-31.61V	-0.002uA	46.7mΩ
49	-31.38V	-0.003uA	45.0mΩ	-31.32V	-0.002uA	44.4mΩ
50	-31.58V	-0.001uA	44.0mΩ	-30.86V	-0.003uA	46.1mΩ
51	-31.30V	-0.003uA	43.7mΩ	-31.75V	-0.001uA	45.7mΩ
52	-30.75V	-0.001uA	44.5mΩ	-31.28V	-0.003uA	45.3mΩ
53	-31.46V	-0.002uA	44.6mΩ	-30.92V	-0.003uA	47.9mΩ
54	-30.90V	-0.001uA	46.2mΩ	-31.71V	-0.003uA	47.9mΩ
55	-31.34V	-0.002uA	46.6mΩ	-31.01V	-0.004uA	46.8mΩ
56	-30.81V	-0.001uA	44.7mΩ	-30.76V	-0.002uA	45.1mΩ
57	-31.05V	-0.001uA	47.2mΩ	-30.81V	-0.003uA	47.0mΩ
58	-31.02V	-0.001uA	47.7mΩ	-30.67V	-0.001uA	44.7mΩ

SeCoS Corporation

Temperature Cycle Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: -55℃/30min, 150℃/30min, for1000 Cycle
Test Date: 2017.03.21 ~ 2017.05.12
Test Standard : JESD22 STANDARD Method-A104
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
59	-31.69V	-0.002uA	47.5mΩ	-31.53V	-0.003uA	45.1mΩ
60	-31.26V	-0.002uA	45.2mΩ	-31.24V	-0.002uA	43.5mΩ
61	-31.28V	-0.002uA	45.8mΩ	-31.71V	-0.001uA	44.1mΩ
62	-30.99V	-0.001uA	43.9mΩ	-30.69V	-0.002uA	45.5mΩ
63	-30.96V	-0.001uA	47.3mΩ	-31.67V	-0.002uA	47.0mΩ
64	-31.23V	-0.002uA	43.7mΩ	-31.32V	-0.002uA	43.8mΩ
65	-30.85V	-0.002uA	47.6mΩ	-31.45V	-0.003uA	47.3mΩ
66	-31.65V	-0.001uA	47.9mΩ	-31.55V	-0.002uA	46.2mΩ
67	-31.12V	-0.001uA	46.3mΩ	-31.41V	-0.003uA	45.5mΩ
68	-31.74V	-0.002uA	47.4mΩ	-31.40V	-0.003uA	45.9mΩ
69	-31.26V	-0.003uA	45.2mΩ	-31.47V	-0.002uA	44.5mΩ
70	-31.59V	-0.002uA	43.6mΩ	-31.18V	-0.002uA	43.8mΩ
71	-30.97V	-0.001uA	47.0mΩ	-31.55V	-0.003uA	47.7mΩ
72	-30.63V	-0.002uA	47.3mΩ	-31.66V	-0.001uA	47.5mΩ
73	-31.32V	-0.003uA	44.6mΩ	-31.19V	-0.003uA	44.5mΩ
74	-31.55V	-0.001uA	45.2mΩ	-31.57V	-0.003uA	47.7mΩ
75	-31.64V	-0.002uA	46.3mΩ	-31.29V	-0.003uA	44.9mΩ
76	-31.09V	-0.002uA	46.9mΩ	-31.26V	-0.004uA	43.6mΩ
77	-30.80V	-0.003uA	45.7mΩ	-30.97V	-0.003uA	43.5mΩ

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 85±2℃, 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	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
1	-31.11V	-0.002uA	44.3mΩ	-31.41V	-0.002uA	45.0mΩ
2	-31.14V	-0.003uA	47.5mΩ	-30.87V	-0.002uA	44.4mΩ
3	-31.47V	-0.003uA	45.5mΩ	-31.30V	-0.001uA	43.7mΩ
4	-31.75V	-0.001uA	47.9mΩ	-30.76V	-0.002uA	47.7mΩ
5	-30.84V	-0.002uA	43.5mΩ	-31.38V	-0.003uA	43.7mΩ
6	-31.77V	-0.002uA	45.9mΩ	-31.15V	-0.002uA	46.9mΩ
7	-30.81V	-0.002uA	46.6mΩ	-31.30V	-0.003uA	46.9mΩ
8	-30.75V	-0.003uA	46.6mΩ	-31.27V	-0.001uA	47.5mΩ
9	-31.48V	-0.001uA	44.0mΩ	-31.46V	-0.003uA	46.5mΩ
10	-30.62V	-0.001uA	44.8mΩ	-31.71V	-0.002uA	43.8mΩ
11	-30.97V	-0.001uA	45.7mΩ	-31.27V	-0.003uA	45.4mΩ
12	-30.64V	-0.003uA	45.9mΩ	-31.67V	-0.003uA	44.0mΩ
13	-30.76V	-0.003uA	47.6mΩ	-31.49V	-0.003uA	44.7mΩ
14	-30.68V	-0.003uA	45.8mΩ	-31.08V	-0.001uA	46.9mΩ
15	-30.90V	-0.003uA	44.8mΩ	-31.19V	-0.001uA	44.2mΩ
16	-31.33V	-0.002uA	44.3mΩ	-31.05V	-0.003uA	47.7mΩ
17	-30.91V	-0.002uA	47.8mΩ	-31.65V	-0.003uA	44.7mΩ
18	-31.56V	-0.001uA	45.9mΩ	-31.70V	-0.002uA	46.1mΩ
19	-31.44V	-0.001uA	47.0mΩ	-31.03V	-0.002uA	47.6mΩ
20	-31.13V	-0.001uA	45.3mΩ	-31.19V	-0.003uA	45.3mΩ
21	-30.92V	-0.002uA	47.6mΩ	-30.76V	-0.003uA	46.2mΩ
22	-30.77V	-0.001uA	44.9mΩ	-31.54V	-0.003uA	46.1mΩ
23	-30.96V	-0.003uA	47.4mΩ	-30.90V	-0.003uA	46.3mΩ
24	-30.89V	-0.002uA	45.0mΩ	-30.86V	-0.003uA	46.3mΩ
25	-30.64V	-0.001uA	44.2mΩ	-30.84V	-0.002uA	45.9mΩ
26	-30.86V	-0.002uA	44.9mΩ	-31.63V	-0.003uA	47.7mΩ
27	-31.64V	-0.001uA	47.3mΩ	-31.19V	-0.003uA	43.8mΩ
28	-31.64V	-0.001uA	44.9mΩ	-31.54V	-0.003uA	45.1mΩ
29	-30.84V	-0.001uA	43.7mΩ	-30.88V	-0.003uA	43.9mΩ

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 85±2℃, 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	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
30	-30.77V	-0.001uA	44.5mΩ	-30.67V	-0.003uA	47.0mΩ
31	-31.26V	-0.002uA	45.8mΩ	-31.40V	-0.002uA	45.9mΩ
32	-30.79V	-0.003uA	44.8mΩ	-31.23V	-0.001uA	43.4mΩ
33	-31.19V	-0.002uA	47.7mΩ	-31.09V	-0.001uA	47.6mΩ
34	-31.49V	-0.003uA	45.4mΩ	-30.68V	-0.002uA	46.1mΩ
35	-31.64V	-0.003uA	44.5mΩ	-31.40V	-0.003uA	44.4mΩ
36	-31.71V	-0.002uA	46.1mΩ	-30.88V	-0.003uA	45.8mΩ
37	-31.09V	-0.002uA	46.1mΩ	-31.36V	-0.001uA	44.8mΩ
38	-31.64V	-0.001uA	46.8mΩ	-31.76V	-0.002uA	43.9mΩ
39	-31.71V	-0.003uA	47.8mΩ	-30.77V	-0.001uA	46.1mΩ
40	-30.85V	-0.003uA	45.5mΩ	-30.77V	-0.003uA	46.0mΩ
41	-30.75V	-0.002uA	45.4mΩ	-30.73V	-0.002uA	46.5mΩ
42	-31.08V	-0.002uA	46.3mΩ	-31.37V	-0.002uA	45.9mΩ
43	-30.92V	-0.002uA	47.5mΩ	-31.19V	-0.001uA	44.5mΩ
44	-31.67V	-0.001uA	45.0mΩ	-30.69V	-0.001uA	45.7mΩ
45	-31.41V	-0.001uA	45.0mΩ	-30.74V	-0.002uA	46.2mΩ
46	-30.86V	-0.002uA	45.1mΩ	-31.59V	-0.002uA	45.0mΩ
47	-31.26V	-0.002uA	45.7mΩ	-31.25V	-0.003uA	44.6mΩ
48	-30.62V	-0.002uA	46.5mΩ	-31.18V	-0.003uA	45.9mΩ
49	-30.99V	-0.001uA	46.2mΩ	-30.78V	-0.002uA	43.5mΩ
50	-31.33V	-0.003uA	46.4mΩ	-30.89V	-0.003uA	46.3mΩ
51	-31.47V	-0.002uA	45.6mΩ	-31.49V	-0.003uA	44.4mΩ
52	-31.51V	-0.003uA	43.4mΩ	-31.49V	-0.002uA	44.9mΩ
53	-31.14V	-0.004uA	44.9mΩ	-31.49V	-0.003uA	45.6mΩ
54	-30.69V	-0.003uA	44.4mΩ	-31.66V	-0.002uA	45.5mΩ
55	-31.74V	-0.003uA	45.9mΩ	-31.55V	-0.004uA	46.5mΩ
56	-31.27V	-0.003uA	43.6mΩ	-31.22V	-0.002uA	44.1mΩ
57	-31.57V	-0.003uA	44.8mΩ	-30.82V	-0.002uA	46.4mΩ
58	-30.90V	-0.001uA	44.2mΩ	-31.63V	-0.002uA	44.9mΩ

SeCoS Corporation

High Temperature High Humidity Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 85±2℃, 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	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
59	-31.29V	-0.003uA	43.5mΩ	-31.08V	-0.003uA	45.3mΩ
60	-31.58V	-0.002uA	47.7mΩ	-31.69V	-0.002uA	44.9mΩ
61	-31.55V	-0.001uA	45.8mΩ	-31.04V	-0.001uA	46.4mΩ
62	-31.45V	-0.002uA	45.5mΩ	-31.45V	-0.002uA	47.7mΩ
63	-30.67V	-0.002uA	44.0mΩ	-31.55V	-0.002uA	47.9mΩ
64	-31.17V	-0.003uA	47.1mΩ	-30.99V	-0.001uA	47.9mΩ
65	-31.05V	-0.001uA	47.8mΩ	-31.10V	-0.003uA	46.0mΩ
66	-31.38V	-0.002uA	47.7mΩ	-31.46V	-0.001uA	45.7mΩ
67	-31.60V	-0.002uA	44.7mΩ	-31.43V	-0.002uA	47.8mΩ
68	-31.66V	-0.002uA	47.6mΩ	-31.50V	-0.001uA	46.8mΩ
69	-31.34V	-0.003uA	44.2mΩ	-30.94V	-0.002uA	48.0mΩ
70	-31.03V	-0.001uA	47.5mΩ	-31.09V	-0.003uA	46.3mΩ
71	-31.42V	-0.003uA	43.8mΩ	-31.61V	-0.002uA	46.9mΩ
72	-31.28V	-0.002uA	44.1mΩ	-30.75V	-0.003uA	46.3mΩ
73	-30.70V	-0.002uA	44.8mΩ	-31.65V	-0.003uA	47.5mΩ
74	-31.28V	-0.003uA	43.7mΩ	-31.47V	-0.002uA	43.8mΩ
75	-31.07V	-0.001uA	43.7mΩ	-30.84V	-0.003uA	47.2mΩ
76	-31.73V	-0.001uA	45.3mΩ	-31.35V	-0.002uA	45.5mΩ
77	-31.16V	-0.002uA	43.6mΩ	-31.63V	-0.001uA	44.6mΩ

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 85±2℃, 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		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
1	-31.68V	-0.001uA	47.9mΩ	-31.07V	-0.003uA	44.1mΩ
2	-31.61V	-0.002uA	45.7mΩ	-31.23V	-0.002uA	46.8mΩ
3	-30.95V	-0.001uA	45.6mΩ	-31.13V	-0.001uA	44.7mΩ
4	-31.22V	-0.001uA	44.7mΩ	-30.95V	-0.003uA	46.1mΩ
5	-31.64V	-0.002uA	45.1mΩ	-30.90V	-0.002uA	44.5mΩ
6	-31.68V	-0.002uA	46.5mΩ	-31.55V	-0.003uA	45.6mΩ
7	-31.25V	-0.002uA	45.9mΩ	-31.22V	-0.003uA	44.1mΩ
8	-31.25V	-0.002uA	44.9mΩ	-30.91V	-0.003uA	47.2mΩ
9	-31.27V	-0.002uA	47.1mΩ	-31.38V	-0.002uA	47.6mΩ
10	-31.35V	-0.003uA	45.4mΩ	-30.71V	-0.002uA	46.9mΩ
11	-30.98V	-0.002uA	46.0mΩ	-31.34V	-0.003uA	46.0mΩ
12	-31.57V	-0.001uA	43.5mΩ	-30.85V	-0.002uA	43.8mΩ
13	-31.48V	-0.002uA	46.5mΩ	-31.33V	-0.003uA	47.7mΩ
14	-30.78V	-0.002uA	45.4mΩ	-31.06V	-0.002uA	45.1mΩ
15	-31.28V	-0.002uA	45.4mΩ	-31.07V	-0.001uA	47.3mΩ
16	-31.76V	-0.004uA	47.8mΩ	-30.76V	-0.002uA	46.7mΩ
17	-30.79V	-0.002uA	45.8mΩ	-30.70V	-0.002uA	45.3mΩ
18	-31.53V	-0.002uA	44.0mΩ	-30.75V	-0.002uA	46.6mΩ
19	-31.09V	-0.003uA	44.6mΩ	-30.90V	-0.004uA	44.2mΩ
20	-31.60V	-0.003uA	46.2mΩ	-30.83V	-0.002uA	45.2mΩ
21	-31.37V	-0.003uA	44.9mΩ	-31.76V	-0.003uA	44.8mΩ
22	-31.63V	-0.003uA	47.5mΩ	-30.67V	-0.003uA	46.9mΩ
23	-30.80V	-0.001uA	43.6mΩ	-31.62V	-0.002uA	43.7mΩ
24	-31.60V	-0.002uA	47.8mΩ	-31.35V	-0.001uA	44.7mΩ
25	-30.78V	-0.003uA	47.6mΩ	-31.55V	-0.003uA	44.0mΩ
26	-31.25V	-0.001uA	47.9mΩ	-30.91V	-0.001uA	44.9mΩ
27	-31.54V	-0.002uA	44.0mΩ	-31.19V	-0.001uA	45.8mΩ
28	-31.21V	-0.003uA	44.2mΩ	-31.31V	-0.002uA	46.0mΩ
29	-31.27V	-0.003uA	44.2mΩ	-31.44V	-0.003uA	43.5mΩ

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 85±2℃, 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		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
30	-30.90V	-0.001uA	47.0mΩ	-31.11V	-0.002uA	45.6mΩ
31	-30.97V	-0.002uA	47.9mΩ	-31.72V	-0.001uA	43.6mΩ
32	-31.08V	-0.003uA	44.0mΩ	-31.22V	-0.001uA	45.3mΩ
33	-31.09V	-0.002uA	45.5mΩ	-31.39V	-0.001uA	47.8mΩ
34	-31.04V	-0.004uA	43.7mΩ	-30.67V	-0.002uA	47.6mΩ
35	-30.66V	-0.002uA	43.9mΩ	-31.40V	-0.003uA	44.4mΩ
36	-31.33V	-0.003uA	45.9mΩ	-30.85V	-0.002uA	45.6mΩ
37	-30.82V	-0.001uA	46.5mΩ	-31.20V	-0.002uA	47.2mΩ
38	-31.35V	-0.003uA	46.0mΩ	-30.69V	-0.003uA	47.6mΩ
39	-31.09V	-0.003uA	43.7mΩ	-31.61V	-0.003uA	47.0mΩ
40	-31.22V	-0.001uA	44.8mΩ	-30.64V	-0.003uA	47.4mΩ
41	-31.75V	-0.003uA	48.0mΩ	-31.16V	-0.001uA	45.6mΩ
42	-30.68V	-0.003uA	43.6mΩ	-30.67V	-0.004uA	43.5mΩ
43	-31.37V	-0.003uA	47.0mΩ	-31.42V	-0.002uA	44.5mΩ
44	-30.87V	-0.002uA	44.9mΩ	-31.59V	-0.002uA	45.6mΩ
45	-30.85V	-0.001uA	45.8mΩ	-31.14V	-0.002uA	46.8mΩ
46	-31.57V	-0.003uA	43.7mΩ	-30.92V	-0.002uA	44.9mΩ
47	-31.38V	-0.003uA	44.7mΩ	-31.24V	-0.003uA	44.9mΩ
48	-30.67V	-0.001uA	46.8mΩ	-31.54V	-0.003uA	46.8mΩ
49	-31.42V	-0.003uA	46.9mΩ	-31.24V	-0.001uA	46.6mΩ
50	-31.34V	-0.001uA	47.1mΩ	-31.52V	-0.001uA	44.6mΩ
51	-31.11V	-0.002uA	47.2mΩ	-30.73V	-0.002uA	46.0mΩ
52	-31.45V	-0.001uA	43.7mΩ	-31.41V	-0.003uA	46.7mΩ
53	-30.88V	-0.003uA	45.7mΩ	-31.50V	-0.003uA	44.0mΩ
54	-31.13V	-0.002uA	44.2mΩ	-31.37V	-0.001uA	47.4mΩ
55	-31.55V	-0.004uA	46.8mΩ	-31.37V	-0.003uA	44.9mΩ
56	-31.00V	-0.003uA	44.9mΩ	-31.60V	-0.003uA	48.0mΩ
57	-30.78V	-0.001uA	46.2mΩ	-31.76V	-0.003uA	44.9mΩ
58	-31.44V	-0.003uA	45.0mΩ	-31.26V	-0.002uA	43.8mΩ

SeCoS Corporation

High Temper High Humidity Reverse Bies Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 85±2℃, 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		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
59	-31.19V	-0.002uA	44.1mΩ	-30.70V	-0.003uA	43.7mΩ
60	-31.28V	-0.003uA	45.6mΩ	-31.43V	-0.003uA	48.0mΩ
61	-30.94V	-0.003uA	46.0mΩ	-30.86V	-0.002uA	47.9mΩ
62	-30.75V	-0.003uA	45.2mΩ	-31.33V	-0.003uA	43.6mΩ
63	-31.39V	-0.001uA	47.1mΩ	-31.76V	-0.003uA	46.0mΩ
64	-31.66V	-0.002uA	44.1mΩ	-30.93V	-0.001uA	47.2mΩ
65	-30.92V	-0.002uA	44.3mΩ	-31.67V	-0.002uA	47.0mΩ
66	-31.14V	-0.002uA	43.9mΩ	-31.47V	-0.001uA	45.1mΩ
67	-31.78V	-0.002uA	46.7mΩ	-31.45V	-0.002uA	43.7mΩ
68	-30.82V	-0.003uA	43.4mΩ	-31.71V	-0.003uA	45.2mΩ
69	-30.88V	-0.004uA	47.0mΩ	-31.07V	-0.003uA	45.7mΩ
70	-30.96V	-0.002uA	46.5mΩ	-30.96V	-0.003uA	46.4mΩ
71	-31.29V	-0.001uA	44.5mΩ	-31.66V	-0.003uA	43.8mΩ
72	-31.29V	-0.002uA	44.2mΩ	-31.60V	-0.003uA	46.8mΩ
73	-31.63V	-0.003uA	46.0mΩ	-31.23V	-0.003uA	45.4mΩ
74	-30.93V	-0.003uA	46.3mΩ	-30.89V	-0.003uA	47.8mΩ
75	-31.46V	-0.002uA	44.7mΩ	-31.40V	-0.002uA	47.6mΩ
76	-31.33V	-0.001uA	46.6mΩ	-31.33V	-0.002uA	44.3mΩ
77	-31.12V	-0.003uA	44.6mΩ	-31.14V	-0.001uA	43.6mΩ

Made By: Leo Hsia

Approval: Peter Yang

SeCoS Corporation

Resistance to Solder Heat Test Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 270℃ ± 5℃, 7Sec + 2Sec/-0Sec
Test Date: 2017.05.12
Test Standard : JESD22 STANDARD Method-B106
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
1	-31.74V	-0.002uA	44.4mΩ	-31.31V	-0.002uA	46.6mΩ
2	-31.22V	-0.002uA	44.6mΩ	-31.45V	-0.001uA	43.5mΩ
3	-31.60V	-0.001uA	44.5mΩ	-31.42V	-0.002uA	43.9mΩ
4	-31.03V	-0.002uA	45.9mΩ	-30.81V	-0.003uA	46.5mΩ
5	-31.12V	-0.002uA	45.9mΩ	-31.38V	-0.001uA	44.3mΩ
6	-31.78V	-0.002uA	45.2mΩ	-31.15V	-0.002uA	45.4mΩ
7	-31.75V	-0.001uA	47.2mΩ	-31.02V	-0.001uA	46.7mΩ
8	-31.23V	-0.003uA	45.1mΩ	-31.54V	-0.003uA	43.6mΩ
9	-30.94V	-0.003uA	47.0mΩ	-31.31V	-0.001uA	44.8mΩ
10	-31.43V	-0.003uA	45.4mΩ	-30.97V	-0.001uA	44.3mΩ
11	-30.66V	-0.001uA	43.6mΩ	-31.17V	-0.002uA	44.9mΩ
12	-31.44V	-0.002uA	47.8mΩ	-31.21V	-0.002uA	48.0mΩ
13	-31.77V	-0.001uA	43.7mΩ	-31.15V	-0.003uA	46.6mΩ
14	-31.46V	-0.003uA	46.7mΩ	-31.14V	-0.003uA	45.1mΩ
15	-30.79V	-0.002uA	45.9mΩ	-30.64V	-0.003uA	45.8mΩ
16	-31.59V	-0.003uA	45.3mΩ	-30.77V	-0.002uA	46.4mΩ
17	-30.91V	-0.002uA	45.4mΩ	-30.98V	-0.003uA	45.8mΩ
18	-30.66V	-0.002uA	43.5mΩ	-30.68V	-0.003uA	46.0mΩ
19	-30.88V	-0.003uA	45.0mΩ	-30.68V	-0.001uA	46.2mΩ
20	-31.75V	-0.001uA	47.6mΩ	-31.62V	-0.003uA	47.1mΩ
21	-31.40V	-0.002uA	47.9mΩ	-31.78V	-0.001uA	45.6mΩ
22	-31.50V	-0.002uA	46.2mΩ	-31.55V	-0.003uA	47.6mΩ
23	-31.48V	-0.002uA	47.0mΩ	-30.89V	-0.001uA	43.8mΩ
24	-31.69V	-0.002uA	44.3mΩ	-31.74V	-0.003uA	46.9mΩ
25	-31.06V	-0.004uA	45.6mΩ	-30.81V	-0.002uA	45.9mΩ
26	-30.78V	-0.003uA	44.3mΩ	-31.33V	-0.002uA	44.9mΩ
27	-31.39V	-0.002uA	44.1mΩ	-31.56V	-0.002uA	47.5mΩ
28	-31.07V	-0.001uA	44.9mΩ	-31.55V	-0.003uA	45.9mΩ
29	-31.15V	-0.001uA	43.8mΩ	-31.50V	-0.003uA	44.6mΩ

SeCoS Corporation

Resistance to Solder Heat Test Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 270℃ ± 5℃, 7Sec + 2Sec/-0Sec
Test Date: 2017.05.12
Test Standard : JESD22 STANDARD Method-B106
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
30	-30.69V	-0.002uA	46.6mΩ	-31.66V	-0.002uA	45.8mΩ
31	-31.45V	-0.004uA	46.2mΩ	-30.88V	-0.001uA	46.1mΩ
32	-30.69V	-0.001uA	47.4mΩ	-31.51V	-0.002uA	45.8mΩ
33	-30.67V	-0.003uA	46.5mΩ	-30.92V	-0.002uA	47.8mΩ
34	-31.65V	-0.003uA	43.8mΩ	-31.47V	-0.002uA	46.8mΩ
35	-31.60V	-0.002uA	44.5mΩ	-30.64V	-0.003uA	47.5mΩ
36	-31.65V	-0.003uA	47.2mΩ	-31.24V	-0.003uA	45.1mΩ
37	-31.67V	-0.003uA	47.7mΩ	-31.07V	-0.002uA	45.9mΩ
38	-31.38V	-0.003uA	44.6mΩ	-31.09V	-0.003uA	46.3mΩ
39	-31.12V	-0.003uA	45.3mΩ	-31.75V	-0.002uA	46.3mΩ
40	-31.03V	-0.002uA	45.4mΩ	-30.83V	-0.002uA	46.9mΩ
41	-31.07V	-0.004uA	47.8mΩ	-31.00V	-0.003uA	47.1mΩ
42	-31.15V	-0.003uA	46.9mΩ	-30.77V	-0.002uA	44.8mΩ
43	-31.01V	-0.002uA	44.5mΩ	-30.93V	-0.002uA	45.2mΩ
44	-31.12V	-0.001uA	46.7mΩ	-30.65V	-0.001uA	47.6mΩ
45	-30.67V	-0.002uA	43.6mΩ	-30.83V	-0.003uA	47.1mΩ
46	-30.79V	-0.002uA	44.4mΩ	-30.64V	-0.003uA	46.2mΩ
47	-30.88V	-0.003uA	47.9mΩ	-30.93V	-0.001uA	47.3mΩ
48	-31.67V	-0.003uA	47.6mΩ	-31.54V	-0.001uA	43.6mΩ
49	-31.04V	-0.003uA	45.2mΩ	-31.69V	-0.002uA	45.2mΩ
50	-30.63V	-0.001uA	44.6mΩ	-31.20V	-0.002uA	44.3mΩ
51	-31.20V	-0.003uA	43.8mΩ	-31.53V	-0.001uA	48.0mΩ
52	-31.72V	-0.002uA	45.8mΩ	-30.96V	-0.003uA	46.9mΩ
53	-31.30V	-0.002uA	43.8mΩ	-30.77V	-0.003uA	44.6mΩ
54	-31.13V	-0.002uA	44.3mΩ	-30.78V	-0.003uA	46.1mΩ
55	-31.18V	-0.003uA	44.2mΩ	-30.96V	-0.001uA	46.8mΩ
56	-31.31V	-0.003uA	43.8mΩ	-31.14V	-0.003uA	45.0mΩ
57	-31.39V	-0.003uA	47.4mΩ	-30.97V	-0.001uA	44.3mΩ
58	-31.68V	-0.001uA	46.3mΩ	-31.07V	-0.003uA	47.6mΩ

SeCoS Corporation

Resistance to Solder Heat Test Test Data

Report No : T170512-101
Part No : SMG2305-C
Test Equipment: JUNO Test System DTS-1000
Test Condition : -20V <V(BR)DSS@ID=-250μA ； IDSS < -1μA@VDS=-20V
RDS(ON) < 53mΩ@VGS=-10V, ID=-4.5A
Test Condition: 270℃ ± 5℃, 7Sec + 2Sec/-0Sec
Test Date: 2017.05.12
Test Standard : JESD22 STANDARD Method-B106
Operator: Leo Hsia

Test Result: PASS

	Before			After		
No	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$	$V_{(BR)DSS}$	I_{DSS}	$R_{DS(ON)}$
59	-31.60V	-0.003uA	43.8mΩ	-31.20V	-0.002uA	46.0mΩ
60	-31.57V	-0.002uA	45.6mΩ	-31.40V	-0.003uA	44.2mΩ
61	-31.49V	-0.003uA	44.8mΩ	-30.76V	-0.001uA	47.8mΩ
62	-31.70V	-0.003uA	46.0mΩ	-31.14V	-0.001uA	43.9mΩ
63	-30.91V	-0.002uA	44.9mΩ	-31.62V	-0.002uA	43.9mΩ
64	-31.14V	-0.002uA	46.3mΩ	-31.29V	-0.003uA	43.5mΩ
65	-31.75V	-0.001uA	44.1mΩ	-31.68V	-0.002uA	45.4mΩ
66	-30.93V	-0.003uA	45.9mΩ	-31.32V	-0.002uA	43.6mΩ
67	-31.12V	-0.003uA	46.5mΩ	-31.56V	-0.002uA	44.2mΩ
68	-31.51V	-0.002uA	46.1mΩ	-31.45V	-0.002uA	46.7mΩ
69	-30.73V	-0.001uA	46.8mΩ	-31.73V	-0.003uA	45.6mΩ
70	-31.55V	-0.002uA	45.9mΩ	-31.56V	-0.001uA	46.8mΩ
71	-31.63V	-0.002uA	48.0mΩ	-31.55V	-0.001uA	44.1mΩ
72	-31.35V	-0.002uA	45.1mΩ	-31.12V	-0.003uA	43.9mΩ
73	-31.56V	-0.003uA	44.1mΩ	-31.63V	-0.003uA	44.8mΩ
74	-31.03V	-0.002uA	47.5mΩ	-30.66V	-0.001uA	43.7mΩ
75	-31.31V	-0.002uA	46.9mΩ	-31.59V	-0.002uA	47.5mΩ
76	-31.75V	-0.003uA	45.8mΩ	-31.14V	-0.001uA	46.9mΩ
77	-30.99V	-0.002uA	45.4mΩ	-31.30V	-0.001uA	47.6mΩ

Made By: Leo Hsia

Approval: Peter Yang