# **Product / Process Change Notice**

PCN No.: <u>Q000-PCN-PA201404-04</u>

Date: 2014-04-10.

Change Title: <u>Nuvoton qualified</u>	assembly house Lingsen, transfer	plating site from T.E.P.Z.fac	tory to Wuqi Dist factory.							
Change Classification: 🗹 Majo	Change Classification: 🗹 Major 🗖 Minor									
Change item: □ Design □ Raw Material □ Wafer FAB ☑ Package Assembly □ Testing □ Others:										
Affected Product(s) :										
The affected part no. list, please refer to the Table I for more information.										
Description of Change(s) :										
Nuvoton qualified assembly h	ouse Lingsen transfers plating site	from No. 5-1, Nan 2nd Rd., T	.E.P.Z.(Taichung Export							
Processing Zone), Taichung City, Taiwan, 42760 to No. 37, Daguan Rd., Wuqi Dist., Taichung City, Taiwan, 43541.										
Reason for Change(s) :										
Due to Lingsen needs to increase capacity and arrange the capacity backup, plating site will be migrated to new site for capacity demand. The related material, equipment and operator s of plating process will not be changed.										
demand. The related material, equ	upment and operator's of plating p	rocess will not be changed.								
Impact of Change(s) : (positive &	t negative )									
Form: No change.										
Fit: No change.										
Function: No change.										
Reliability: No concern										
Qualification Plan/ Results :										
1. We followed Nuvoton standar	d procedure to proceed with the pl	ating qualification.								
2. The package passed Nuvoton	plating qualification criteria; pleas	e refer to appendix A for the q	ualification report.							
Implementation Plan :										
Date Code: onwa	rd 🗖 Lot No.: or	nward <b>D</b> Implemented date:	Jul. 09, 2014 (scheduled)							
Originator:	HYLai / Q100	Approval:(QA Director)	C.C. Chen/ Q000							
	Name: <u>HYLai</u> TEL: <u>886-3</u>	- <u>5770066 (</u> ext. <u>1226)</u> FAX:	886-3-5792673.							
Contact for Questions & Concerns	Address: <u>No.4, Creation Rd.</u> <u>R.O.C</u>	III Science-Based Industria	ll Park Hsinchu, Taiwan,							
E-mail: <u>hylai0@nuvoton.com.</u>										

#### **Customer Comments:**

□ Approval	Disapproval		nditional Approv	val:		<u> </u>		
Date:	Dept. nar	ne:		Per	Person in charge:			
<i>Follow-up and L</i> A. copies to	Tracing:							
FAB: 🗆 Inte	gration	<u> </u>	0	0	0	<u> </u> .		
Test / Produ	ct: 🗆	]						
Design/ Mar	keting: 🗆							

Production control/	Others:	  _

### **B.** Changes:

### 1. Document / Test program:

Document No/ test	Document name/ test program name	version		responsibor	Completed date	Remark
program		before	after			
NA	NA	NA	NA	NA	NA	NA

Verifed by: \_\_\_\_\_\_.

### **Table I: Affected parts list**

Part No.	Part No.
I1730EY	I4408EYI
I1730EYI	I5008EY
I1760EY	I5102EY
I1760EYI	I5116EY
I4212EY	I5116EYI
I4212EYI	I5216EY
I4224EY	
I4304EY	
I4304EYI	
I4306EYI	



### **Appendix A: Packages qualification report**

### PLATING PLANT MIGRATION QUALIFICATION REPORT

### **CUSTOMER : All customer**

ITEM	REPORT CONTENTS	5	
Ι	PURPOSE OF QUALIFICATI	ION	LOT
П	QUALIFICATION ITEMS		
Ш	VISUAL INSPECTION		
IV	IONIC CLEANLINESS TEST		
v	PLATING THICKNESS		
VI	SOLDERABILITY TEST		
VII	LEAD FATIGUE TEST		
ΤΟΤΑ	L: 8	8	PAGES

Prepare by : Art Chiang

Checked by : Amy Lin

Approve by : Jack Tu

# I. PURPOSE OF QUALIFICATION LOT

LINGSEN setup the new plant in Chung-Kang export processing zone because LINGSEN need to increase capacity and arrange the capacity backup. Plating plant will migrate to new area for capacity demand. Material, equipment, operator of plating process will not change, only to change production area.

The qualification lot report will certify the process ability and quality for plating plant migration.



## **QUALIFICATION ITEMS**

Plate the dummy by plating machine MECO#4(equipment number: 00410680078) in new plant. Qualification package type and test items as below list.

Package type	Lot no.	Qualification items
SOP008M	413685	
TO-92STD	413686	
SOT-25M	413687	1.VISUAL INSPECTION
TQ320707	413688	→2.IONIC CLEANLINESS TEST →3.PLATING THICKNESS
TS481220	413689	4.SOLDERABILITY TEST
PLC032	413660	-5.LEAD FATIGUE TEST
WQFN280505L	416143	J.LEAD TAILOUE TEST
WQFN240404L	416142	

## Ш.

## VISUAL INSPECTION

Frequency of visual inspection: 10strips/lot (100% inspection) follow LINGSEN spec.50-6355 Visual inspection result of all packages is pass.

# IV.

### IONIC CLEANLINESS TEST

Package type	Lot no.	Measured value( $\mu$ g/sq)	Result
SOP008M	413685	0.23	Pass
TO-92STD	413686	0.19	Pass
SOT-25M	413687	0.24	Pass
TQ320707	413688	0.19	Pass
TS481220	413689	0.16	Pass
PLC032	413660	0.49	Pass
WQFN280505L	416143	0.13	Pass
WQFN240404L	416142	0.15	Pass

#### criterion: <3 µ g /sq (follow LINGSEN spec.60-7035)

# V. PLATING THICKNESS

### 1.package type: SOP008M

Sample size: 125points; measure position as below drawing. (9 points per L/F; 14strips L/F) Criteria: plating thickness: 7.62~15.27  $\mu$  m; CPK > 1.67(follow LINGSEN spec.50-6355) Measured result: CPK=1.7155;PASS

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titt findigt finite		Sitting .	PHILIPPI	(the line	$(\mathbf{x})$		Inning	tenine	inging.	horing	
HARRING FREEMARTER FREEMARTER		-	ALC: NO.	distants.		-		Intima		Samuel	-
mus annus annus	1 minut	-		鐵龍			100 200	and distant	minun	mount	termiter
		di interiore		Entering	6			and the			Inter
And a minimit a summin	1 + CHIMIN 1	animi s	-आगरतम् ।	AURINE		2.000 000.3	anninn i	minni	amina	Inthusa	3

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				12.4	12.97	12.94	12.97	12.93	12.62	12.73	13.43	13.32	12.21	12.64
		15.24	USL	12.65	13.64	13.17	13.54	12.15	12.75	12.68	13.04	12.59	12:42	13.26
		7.62	LSL	12.64	13.06	12.57	12.52	13.29	10.1	12.39	12,86	13.13	12.26	12.11
		125	count	132	12.8	13.3	11.99	12.51	12.1	11.86	12.1	12.07	11.86	1329
		13.00	max	11.69	12.28	12.3	11.88	12.67	12.62	12.53	12.88	12.91	12.16	13:69
		11.58	min	13.04	12.91	13.53	12.61	1328	12.66	13.03	12.86	13.06	11.58	12.01
		0.4905	stdev	12.36	12.6	12.67	12.59	12.75	13.41	12.76	13.28	13.04	13.17	1271
		12.7158	#V\$	1197	12.09	12.32	11.8	12.71	12.26	11.99	13.02	12.62	12.09	13.51
				12.52	13.06	13:42	12.03	13.19	的政	1231	13.07	12.81	11.93	12.91
2.5893	Pp	2.5893	Cp	12.57	12.88	12.63	11.94	12.43	13.66	1115	11.99	11.94	12	1295
1.7155	CPU	1.7155	CPU								12.91	12.88	12.62	13.29
3.4631	CPL	3.4631	CPL											
0.3375	C.a	0.3375	C.a											
1.7155	Ppk	1.7155	Cpk		· · · · · · · · · · · · · · · · · · ·									



### 2.package type: TO-92STD

Sample size: 125points; measure position as below drawing. (9 points per L/F; 14strips L/F) Criteria: plating thickness: 7.62~15.27  $\mu$  m; CPK > 1.67(follow LINGSEN spec.50-6355) Measured result: CPK=1.6843;PASS



#### Measured value & CPK

		#哲州2明州6)	(note: # Min 2000)	数值12	教護日	数值10	教信9	教師の	教法7	教師	教徒5	敷値4	教師	数据2	教徒1
				12:46	12.16	11	12.51	1148	10.18	10.75	1104	J0.666	12.54	1201	10.26
		15.24	USL	10.16	10.444	12.12	11.81	10.56	122	1293	12.13	10.55	11.01	11.09	10.583
		7.62	LSL	10.6	11.45	10.84	10.479	12.59	12.44	11	12.55	12.74	11.92	10.51	11.09
		125	eeunt	10.99	1291	12.08	113	11.15	10.41	10.09	12.53	11.8	11.07	12.08	12
		12.95	max	11.439	12.95	12.09	10.82	12.37	12.36	10.44	11.05	112	11,336	12.26	1231
		10.01	min	12.13	12.15	11.57	11.527	12.39	12.26	11.58	12.49	11.69	1143	10.95	10.01
		0.7314	stdev	12.26	12.16	11	12.51	11.48	LLIS	10.25	1184	11,666	12:34	1201	10.26
		11.5445	avg	11.16	11.444	12.12	11.81	11.56	122	12.23	12.13	10.55	1101	11.09	10.583
				116	11.45	11.84	11.479	12.29	12.14	11	12.13	12.47	11.92	10.51	11.09
1.735	Pp	1.7364	Cp	10.98	12.19	12.01	11.3	11.15	11.41	1104	12.35	11.8	11.07	12.08	12
1.684	CPU	1.6843	CPU								11.05	112	11,336	1221	1224
1.785	CPL	1.7888	CPL									1			
0.0	Ca	0.0300	Ca												
1,084	Ppk	1.0843	Cpk												

### 3.package type: SOT-25M

Sample size: 125points; measure position as below drawing. (9 points per L/F; 14strips L/F) Criteria: plating thickness: 7.62~15.27  $\mu$  m; CPK > 1.67(follow LINGSEN spec.50-6355) Measured result: CPK=2.6442;PASS

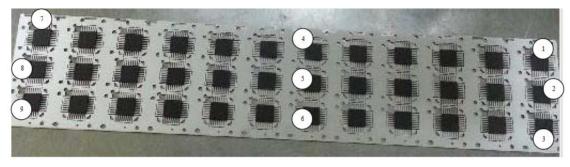
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$\bigcirc$
(3)

教徒1	教訓2	教師で	奏(進4	教徒5	教徒の	教訓7	教師	<b>新信約</b>	教徒の	教徒日	教値12	Inche 教徒有效的	·····································	6)	
10,13	10.13	10.66		10.73	10.4	10.55	10.77	10.35	10.53	30.68	10.56	and the second			
10.98	10.76	10.32	11.02	10.52	10.16	10.55	10.24	10.7	11.06	30.64	10.44	USL	15.24		
10.62	10.45	10.05	10.62	10.2	10 61	10.69	11.34	10.46	10.36	11.47	10.23	LSL	7.62		
30.55	10.83	10.66	10.84	10.73	11.44	10.58	10.77	10.3	10.57	10.78	10.58	count	125		
10.98	10.76	10.36	11.02	10.52	11.16	10.57	10.64	10.7	11.06	10.64		matec	11.98		
10.26	11.45	10.0\$	10.62	10.7	10.61	10.65	10.54	10.46	11.35	10.57	10.24	min	10.04		
1133	10.83	11.66	10.84	#75	11,45	10.58	11.42	10.3	10.54	10.48	10.56	stdev	0.3953		
11.98	10.76	10.35	11.02	自殺		11.45	11.34	10.7	11.03	33.34	11.45	ang	10.7655		
11.26	11.54	10.04	10.62	10.7	80.51	11.39	10.24	10.46	10.32	10.27	11.27				
10.38	10.88	11.66	10.84	10.73	00.42	11.16	11.17	113	10.51	10.18	10.58	Cp	3.2130	Pp	3.213
10.24	10.67	日況	11.02	11.52								CPU	3.7818	CPU	3.7848
												CPL	2.6442	CPL	2.8442
												Ca	0.1770	Ca	0.177
												Cpk	2.6442	Pipe	2.6442



### 4.package type: TQ320707

Sample size: 125points; measure position as below drawing. (9 points per L/F; 14strips L/F) Criteria: plating thickness: 7.62~15.27  $\mu$  m; CPK > 1.67(follow LINGSEN spec.50-6355) Measured result: CPK=2.5175;PASS

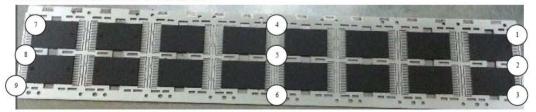


#### Measured value & CPK

教師1	教徒2	書(第3)	奏値4	教師5	教師の	教師7	教護8	豊富9	教徒於	教師川	書値12	(note 物価有效調	12月2日月	6)	
11.09	11.33	11.37	12.13	1118	1168	11.97	11.16	11.25	11.71	11.4	1235				
11.73	11.53	11.63	11.24	11.59	11.14	1161	12.04	11.68	11.58	11,77	11,49	USL	15.24		
1134	11.61	11.66	11.98	12.11	11.91	11.53	1173	11.45	11.33	11.14	11.99	LSL	7.62		
11.97	12.11	11.92	11.78	11.26	1108	11.26	11.39	目腔	11.65	12.19	1161	count	125		
11.86	11.84	11.05	11.06	目腔	11.06	11.05	11.26	11.16	11.11	11.19	1125	max.	12.98		
12:09	12.33	12.37	11.24	12.18	12.61	11.17	12.26	11.15	11.51	11.24	1135	min	11.02		
11.53	11.35	1136	11.14	11.19	11.14	11.15	11.04	11.16		11.27	1129	stdev	0.4799		
1124	11.26	11.26	12.98	12.81	11.29	11.35	11.27	11.24		1124	1125	avg	11.6239		
11.47	12.41	11.29	11.38	1127	1108	11.12	11.23	11.25	11.26	12.15	11.18				
12.39	12.43	12.78	12.24	12.18	12.61	12.17	12.16	11.51	11.41	11.42	11.52	Cp	2.6625	Pp	2.0525
12.29	11.33	12.87	11.24	12.18								CPU	2,5175	CPU	2.5175
												CPL	2.7875	CPL	2.7975
												Ca	9080.0	Ca	0.0509
												Cpk	2.5175	Ppk	2.5175

### 5.package type: TS481220

Sample size: 125points; measure position as below drawing. (9 points per L/F; 14strips L/F) Criteria: plating thickness: 7.62~15.27  $\mu$  m; CPK > 1.67(follow LINGSEN spec.50-6355) Measured result: **CPK=1.7476;PASS** 

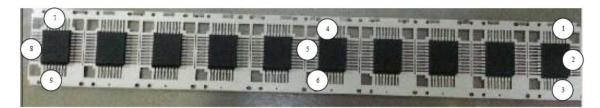


教(第1	<b>教信</b> 2	教師の	教徒4	教徒5	教師の	教護7	教師の	素値9	教徒10	数値目	教徒12	(note a in frid a	# 2 71 2 9 79 1	0	
12.79		11.97	12.06	10.11	12.58	1217	10.69	11.98	12.23	11.65	11.17	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
10.73	112	10.96	12.01		11.97	11.19	11.08	12.39			12.09	USL	15.24		
12.87	11.44	12.53	12.37	12.59	12.85	11.81	12.37	12.14	11.07	10.5	11.47	LSL	7.62		
10.672	12.57	12.58	11.08	12.1	11.33	12.26	12.23	11.75	12.88	12,45	11.37	count	125		
12.13	12.27	11.94	112	12.12	12.74	11.32	10.69	11.47	10.9	11.11	1121	max	13.04		
10.58	10.74	11.143	12:40	1205	12.92	12.02	12.2	12,87	11.06	10.55	10.95	min	10.08		
12.84	11.時	11.85	11.39	11.55	10.63	11.1	11.37	11.12	12.28	1179	1233	stdev	0.6772		
12.5	12.25	12.36	10.99	12.57	12.92	11.46	11.15	10.74	10.92	11.32	11.27	awg	11.0898		
10.99	11.22	10.08	12.16	11.76	1141	12.49	12.38	11.63	13.04	10.5	1107				
10.8	11.43	11.561	10.99	11.09	11.32	11.72	11.99	11.985	11.81	11.26	1131	Cp	1.9754	Pp	1.8754
11.97	12.41	10.92	1103	11.18				2 0.960 S.95				CPU	1.7476	CPU	1.7476
												CPL	2.0033	CPL	2.0033
												Ca	0.0682	Ca	0.0682
												Cpk	1,7476	Pipk	1.7476



### 6.package type: PLC032

Sample size: 125points; measure position as below drawing. (9 points per L/F; 14strips L/F) Criteria: plating thickness: 7.62~15.27  $\mu$  m; CPK > 1.67(follow LINGSEN spec.50-6355) Measured result: **CPK=1.8117;PASS** 



#### Measured value & CPK

		(15) 預2(16) 列6)	Incle # G f the	書値12	教徒は	参値が	教師の	教師S	教師7	教師の	書値5	<b>創価</b> 4	<b>教協3</b>	教徒2	教師1
				11.69	11.13	10.571	11.63	12.03	11.02	11.47	11.39	10.364	12.74	11.02	10.701
		15.24	USL	10.54	10.62	10.1	11.72	11.56	10.25	11.72	11.19	10.665	11	10.8	10.211
		7.62	LSL	1171	11.19	10.4	10.71	10.51	10.05	11.99	1121	10.2	11.8	11.27	10.52
		125	count	11.84	11.34	10.29	11.57	11.28	10.3	10,27	10.65	10.25	11.87	11.28	10.35
		12.74	max	3.64	10.51	10.08	11.29	11.24	10.41	11.67	11.43	10.27	10.43	10.62	10.21
		10.05	min	11.58	11.21	10.63	10.72	10.45	10.07	11.78	11.17	10.38	11.6	11.25	10.16
		0.5112	stdev	11.79	11.28	10.33	11.55	11.35	10.05	10.88	10.65	10.14	11.77	11.65	10.63
		10.9419	avg	10.76	10.57	10.15	11.1	11.36	10.21	11.68	1124	10.2	10.75	10.61	10.05
				11,99	11.35	10.35	10.25	10.57	10.07	11.13	11.32	10.35	11.51	11.34	10.21
2.07	Pp	2.0779	Cp	11.97	11.31	10.29	11.51	11.23	10.28	10.55	10.46	10.2	11.73	11.17	10.22
J 2.34	CPU	2.3441	CPU	(							11.27	10.56	10.97	10.48	10.31
L 1.01	CPL	1.0117	CPL												
0.12	C.a	0.1281	Ca												
1.81	Ppk	1.8117	Cpk												

### 7.package type: WQFN280505L

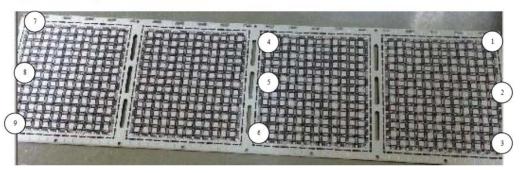
Sample size: 125points; measure position as below drawing. (9 points per L/F; 14strips L/F) Criteria: plating thickness: 7.62~15.27  $\mu$  m; CPK > 1.67(follow LINGSEN spec.50-6355) Measured result: CPK=2.2733;PASS

教師1	教徒2	<b>新国3</b>	<b>憲</b> 値4	書値5	教師の	教師7	教護8	集(国)	教徒が	教師目	書値12	(note:教師有做調	<b>- 11</b> 列2例列8	1	
12.11	12.36	116	11.89	12.06	11.33	12.52	11.93	12.78	11.52	12.12	11.37				
11.53	12.09	11.28	12.36	12.09	12.46	11.39	12.73	11.13	11.46	12.32	11.12	USL	15.24		
12.41	12.42	11.81	11.41	12.03	11.67	11.42	11.66	11.03	11.93	12.11	12.39	LSL	7.62		
12.16	12.26	11.65	11.85	12.46	11.37	12.25	11.39	12.87	12.52	12.21	11.43	count	126		
12.58	12.19	12.82	12.43	12.55	12.12	12.29	12.42	12.31	12.43	12.54	12.48	max.	12.87		
12.41	12.48	11.58	11.41	12.62	11.39	11.23	11.89	11.43	11.79	12.58	12.39	min	11.08		
12.18	12.46	11.84	11.76	12.16	1138	12.42	11.95	12.44	11.25	12.12	11.37	stdev	0.4703		
11.57	12.09	12.28	12:31	12.69	12,46	12.59	1237	11.83	目標	12.32	1121	avg	12.0323		
12.17	12.46	11.\$1	11.49	12.03	11.66	11.24	12.66	11.8	11.92	12.19	1237				
12.15	12.32	11.67	11.98	12.26	11.43	12.51	11.98	12.94	12.25	12.42	11.88	Cp	2.7002	Pp	2.7002
11.43	12.29	11.38	12.46	12.19								CPU	2.2733	CPU	2.2733
												CPL	3.1271	CPL	3.1271
												C.a	0.1581	C.a	0.1581
												Cpk	2.2733	Ppk	2.2733



### 8.package type: WQFN240404L

Sample size: 125points; measure position as below drawing. (9 points per L/F; 14strips L/F) Criteria: plating thickness: 7.62~15.27  $\mu$  m; CPK > 1.67(follow LINGSEN spec.50-6355) Measured result: **CPK=1.8302;PASS** 



11	数182	8-183	<b>動催</b> 4	Britts	教護	数据7	8-180	制作	数1010	教師目	数值12	(note: Bith H H H	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		
313	1271	12:48	12.55	拉伸	位为	12.39	13.44	均分	13.85	12.4	12.74				
222	11.86	12.4	12.95	13:14	133	12.73	12.69	12.29	12.4	12.38	1395	USL	15.24		
265	13.53	13.42	13.12	13.25	12.53	12.12	12.55	12.77	12.19	12.99	12.34	LSL	7.62		
3.13	12.72	12.78	12.23	12.58	12.72	12.79	12.44	12.57	13.15	12.64	12.14	ceunt	125		
233	12.96	12.54	12.74	13.24	13.05	12.75	12.79	12.59	12.27	12.77	1325	m #8	13.95		
333	12.25	12.68	13.53	12.79	1222	12.19	13.24	13.32	12.95	12.59	12.72	min	11.76		
232	12.86	12.41	12.15	13,44	1335	12.78	12.68	12.21	12.34	12.36	1295	störv	0.4492		
3.13	12.75	12.58	13.58	12,79	12.78	12.29	13.54	13.36	12.98	12.51	12.32	ang	12,7739		
3.34	12718	12.28	12.33	12.39	12.39	12.38	13.54	13.17	13.25	12,45	12.24				
223	11.76	12:48	12.65	13.24	1335	12.74	12.68	12.39	12.14	1228	13.85	Cp	2.8275	Pp	2.8275
238	12.17	12.49	12.57	12:63								CPU	1.8302	CPU	1.8302
								· · · · ·				CPL	3.8240	CPL	3.8249
												Ca	0.3527	Ca	0.3527
												Epk	1.9302	Ppk	1.0302



## SOLDERABILITY TEST

All result is pass. Please refer the attachment (Doc#SD1030114).



## LEAD FATIGUE TEST

All result is pass. Please refer the attachment (Doc#LF1030102).





Attachment 2

Doc#SD1030114

## **Dip & Look Solderability Test** 沾錫信賴性試驗報告

Sample Information 產品資料									
Month	01/2014	Lead Frame	C194AG						
Customer	LPI	Mold Compound	EME-G600						
Package Type	SOP008M	Wire	N/A						
Run No.	413685	Silver Epoxy	N/A						
Device Type	DUMMY UNIT	Die coating	NN/A						
Lot No.	ENG	Received Date	01/22/2014						
REL Doc. No.	103058	Completed Date	01/28/2014						
Lead Finish	Matte Tin	Remark	Visual photo as attach.						

Test Conditions 嶎	est Conditions 試 驗 條 件									
1.Sample Plan:	N=5 AC=0 RE=1									
2.Conditions :	Steam Aging 8Hr,Solder Temp. : 245±5°C Dipping time : 5±0.5sec									
	Solder pot : Sn96.5/Ag3/Cu0.5 Specific gravity of Flux : 0.847(ROL1)									
3.Test Frequency:	PPCM,Freq. <u>once/quarter</u> Qualification Customer Requirement									
·····	Material /Operation parameter of material change Others:									

### Criteria 彻宁**迺淮**

CInterna 列足保	F				
			ler coating free	from defects for	a minimum of
	critical surface a				
2.Anomalies of	ther than dewett	ing, nonwetting,	and pinholes ar	e not cause for rej	ection.
3.The critical a	rea as below.				
A (Underside) B (20	laating Flane Seeting Flan 2x7		ening have Critical Area	Critical area	
Tost	t Result				
試驗結果		lure/total Q'ty)	×Accept 合材	各 🗌 Reject 🗸	不合格
HPN TON THE PIX	(			H _ J	нн
Approved By:	WP Huang	Checked By:	Fu Yang	Prepared By:	WenHuaWu
Date:	01/28/2014	Date:	01/28/2014	Date:	01/28/2014
LINGSEN RELIABILIT	YLAB				657306-01-06
5-1 Nan 2nd Road. T	E.P.Z. Taichung.	, Taiwan 427 R.O.0	2		

TEL: 04-25335120 FAX: 04-25327904

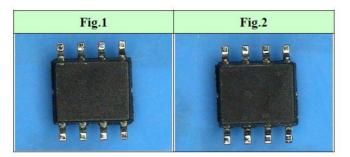


Lingsen Precision Industries., 菱生精密工業股份有限公司

Doc#SD1030114

Attachment: Test Result

After Test



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Doc#SD1030114

# **Dip & Look Solderability Test** 沾錫信賴性試驗報告

Sample Inform 產品資料	nation		
Month	01/2014	Lead Frame	C194AG
Customer	LPI	Mold Compound	EME-G600
Package Type	TO-92 STD	Wire	N/A
Run No.	413686	Silver Epoxy	N/A
Device Type	DUMMY UNIT	Die coating	NN/A
Lot No.	ENG	Received Date	01/22/2014
REL Doc. No.	103058	Completed Date	01/28/2014
Lead Finish	Matte Tin	Remark	Visual photo as attach.

#### Test Conditions 試 驗 條 件 1.Sample Plan: N=5 AC=0 RE=1 2.Conditions : Steam Aging 8Hr,Solder Temp. : 245±5°C Dipping time : 5±0.5sec Solder pot : Sn96.5/Ag3/Cu0.5 Specific gravity of Flux : 0.847(ROL1) PPCM,Freq. once/quarter Qualification Customer Requirement 3.Test Frequency 3 Material /Operation parameter of material change Others:

#### Criteria 判定標準

1.All terminations shall exhibit continuous solder coating free from defects for a minimum of 95% of the critical surface area. 2. Anomalies other than dewetting, nonwetting, and pinholes are not cause for rejection. 3. The critical area as below. 1 Critical area B (2x) Fig. 4 圖四 Test Result 試驗結果:\_ 0/5 (failure/total Q'ty) ☑Accept 合格 Reject 不合格 Approved By: WP Huang Checked By: Fu Yang **Prepared By:** WenHuaWu 01/28/2014 01/28/2014 01/28/2014 Date: Date: Date: LINGSEN RELIABILITY LAB 657306-01-06

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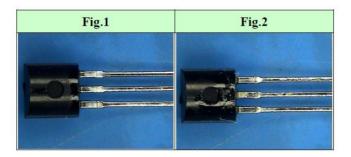




Doc#SD1030114

Attachment: Test Result

After Test



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Doc#SD1030114

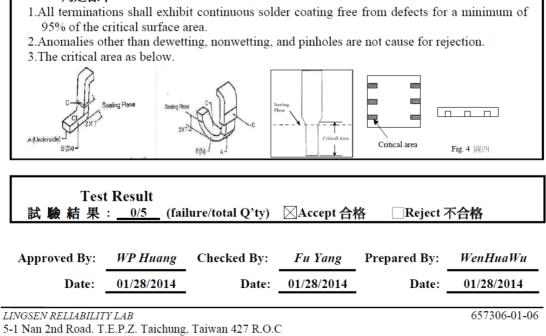
# **Dip & Look Solderability Test** 沾錫信賴性試**驗報**告

Sample Inform 產品資料	nation		
Month	01/2014	Lead Frame	E64ATG
Customer	LPI	Mold Compound	EME-G600
Package Type	SOT-25M	Wire	N/A
Run No.	413687	Silver Epoxy	N/A
Device Type	DUMMY UNIT	Die coating	NN/A
Lot No.	ENG	Received Date	01/22/2014
REL Doc. No.	103058	Completed Date	01/28/2014
Lead Finish	Matte Tin	Remark	Visual photo as attach.

### Test Conditions 試 驗 條 件

1.Sample Plan∶	N=5 AC=0 RE=1			
2.Conditions :	Steam Aging 8Hr,Solder Temp. : 245±5°C Dipping time : 5±0.5sec			
	Solder pot : Sn96.5/Ag3/Cu0.5 Specific gravity of Flux : 0.847(ROL1)			
3.Test Frequency :	PPCM,Freq. once/quarter Qualification Customer Requirement			
5. Test Frequency .	Material /Operation parameter of material change Others:			

### Criteria 判定標準



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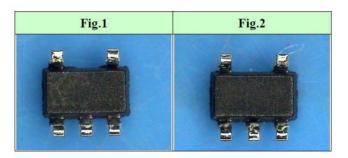




Doc#SD1030114

Attachment: Test Result

### After Test



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Doc#SD1030114

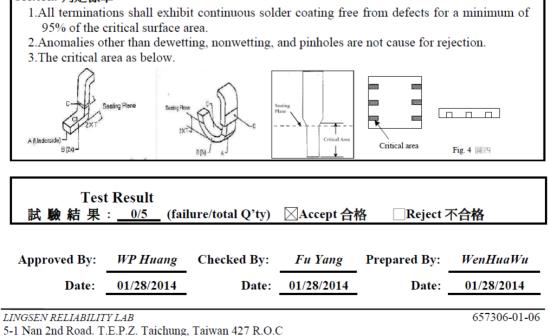
## **Dip & Look Solderability Test** 沾錫信賴性試**驗**報告

Sample Inforr 產品資料	nation		
Month	01/2014	Lead Frame	C7025AG
Customer	LPI	Mold Compound	EME-G700
Package Type	TQ320707	Wire	N/A
Run No.	413688	Silver Epoxy	N/A
Device Type	DUMMY UNIT	Die coating	NN/A
Lot No.	ENG	Received Date	01/22/2014
REL Doc. No.	103058	Completed Date	01/28/2014
Lead Finish	Matte Tin	Remark	Visual photo as attach.

### Test Conditions 試 驗 條 件

1.Sample Plan:	N=5 AC=0 RE=1		
2.Conditions :	Steam Aging 8Hr,Solder Temp. : 245±5°C Dipping time : 5±0.5sec		
	Solder pot : Sn96.5/Ag3/Cu0.5 Specific gravity of Flux : 0.847(ROL1)		
3.Test Frequency :	PPCM,Freq. once/quarter Qualification Customer Requirement		
5. rest riequency .	Material /Operation parameter of material change Others:		

### Criteria 判定標準



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Doc#SD1030114

Attachment: Test Result

After Test

Fig.1	Fig.2		
244 ( )	B-12 B-12		
BC (20)	3.10		
34K (1913)			
	a 10		
24C	a 🕻 👘 👘		
IN ALL ALL ALL			

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Doc#SD1030114

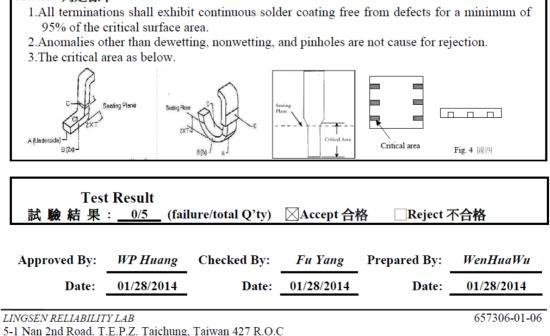
## **Dip & Look Solderability Test** 沾錫信賴性試驗報告

Sample Inforr 產 品 資 料	nation		
Month	01/2014	Lead Frame	C7025AG
Customer	LPI	Mold Compound	EME-G700
Package Type	TS481220	Wire	N/A
Run No.	413689	Silver Epoxy	N/A
Device Type	DUMMY UNIT	Die coating	NN/A
Lot No.	ENG	Received Date	01/22/2014
REL Doc. No.	103058	Completed Date	01/28/2014
Lead Finish	Matte Tin	Remark	Visual photo as attach.

### Test Conditions 試 驗 條 件

1.Sample Plan:	N=5 AC=0 RE=1			
2.Conditions :	Steam Aging 8Hr,Solder Temp. : 245±5°C Dipping time : 5±0.5sec			
	Solder pot : Sn96.5/Ag3/Cu0.5 Specific gravity of Flux : 0.847(ROL1)			
3.Test Frequency :	PPCM,Freq. once/quarter Qualification Customer Requirement			
5. Test Frequency .	Material /Operation parameter of material change Others:			

#### Criteria 判定標準



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Doc#SD1030114

Attachment: Test Result

After Test

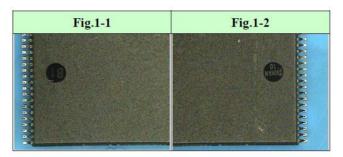


Fig.2-1	Fig.2-2

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Doc#SD1030114

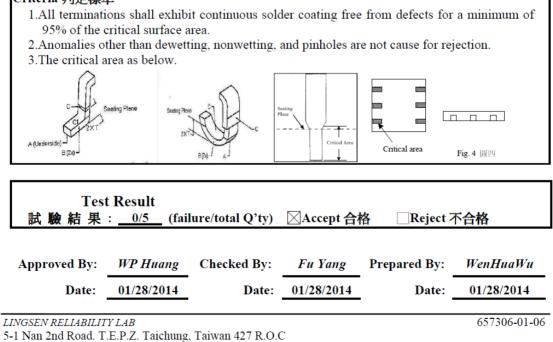
## **Dip & Look Solderability Test** 沾錫信賴性試驗報告

Sample Inform 產品資料	nation		
Month	01/2014	Lead Frame	C151AG
Customer	LPI	Mold Compound	EME-G600
Package Type	PLC032	Wire	N/A
Run No.	413690	Silver Epoxy	N/A
Device Type	DUMMY UNIT	Die coating	NN/A
Lot No.	ENG	Received Date	01/22/2014
REL Doc. No.	103058	Completed Date	01/28/2014
Lead Finish	Matte Tin	Remark	Visual photo as attach.

### Test Conditions 試 驗 條 件

1.Sample Plan∶	N=5 AC=0 RE=1		
2.Conditions :	Steam Aging 8Hr,Solder Temp. : 245±5°C Dipping time : 5±0.5sec		
	Solder pot : Sn96.5/Ag3/Cu0.5 Specific gravity of Flux : 0.847(ROL1)		
3.Test Frequency :	PPCM,Freq. once/quarter Qualification Customer Requirement		
5. rest frequency .	Material /Operation parameter of material change Others:		

#### Criteria 判定標準



TEL: 04-25335120 FAX: 04-25327904

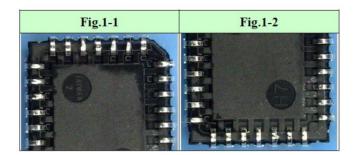


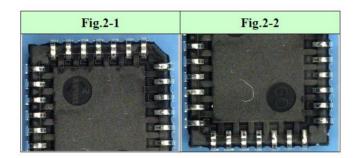


Doc#SD1030114

Attachment: Test Result

After Test





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Doc#SD1030114

# Dip & Look Solderability Test

沾錫信賴性試驗報告

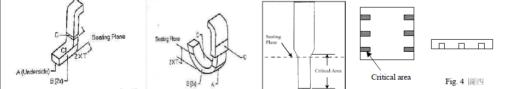
Sample Inform 產 品 資 料	nation		
Month	01/2014	Lead Frame	C194AG
Customer	LPI	Mold Compound	EME-G770H
Package Type	WQFN0240404L	Wire	N/A
Run No.	416142	Silver Epoxy	N/A
Device Type	DUMMY UNIT	Die coating	NN/A
Lot No.	ENG	Received Date	01/24/2014
REL Doc. No.	103067	Completed Date	01/28/2014
Lead Finish	Matte Tin	Remark	Visual photo as attach.

Test Conditions 🕌	、驗條件		
1.Sample Plan:	N=5 AC=0 RE=1		
2.Conditions :	Steam Aging 8Hr,Solder Temp. : 245±5°C Dipping time : 5±0.5sec		
	Solder pot : Sn96.5/Ag3/Cu0.5 Specific gravity of Flux : 0.847(ROL1)		
3.Test Frequency∶	PPCM,Freq. once/quarter       Qualification       Customer Requirement         Material /Operation parameter of material change       Others:		

### Criteria 判定標準

1.All terminations shall exhibit continuous solder coating free from defects for a minimum of 95% of the critical surface area.

2. Anomalies other than dewetting, nonwetting, and pinholes are not cause for rejection.3. The critical area as below.



Test 試 <b>驗</b> 結 果	t Result : <u>0/5</u> (fai	lure/total Q'ty)	⊠Accept 合 <sup>≯</sup>	洛 □Reject <sup>&gt;</sup>	下合格
Approved By:	WP Huang	Checked By:	Fu Yang	Prepared By:	WenHuaWu
Date:	01/28/2014	Date:	01/28/2014	Date:	01/28/2014
INGSEN RELIABILITY LAB					657306-01-06

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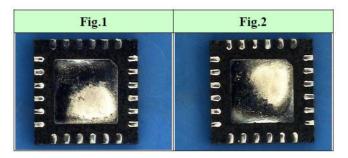




Doc#SD1030114

Attachment: Test Result

After Test



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<u>(INGSEN</u>

Lingsen Precision Industries., 菱生精密工業股份有限公司

Doc#SD1030114

# **Dip & Look Solderability Test** 沾錫信賴性試**驗報**告

Sample Inforn 產 品 資 料	nation		
Month	01/2014	Lead Frame	C194AG
Customer	LPI	Mold Compound	EME-G770H
Package Type	WQFN0280505L	Wire	N/A
Run No.	416143	Silver Epoxy	N/A
Device Type	DUMMY UNIT	Die coating	NN/A
Lot No.	ENG	Received Date	01/24/2014
REL Doc. No.	103067	Completed Date	01/28/2014
Lead Finish	Matte Tin	Remark	Visual photo as attach.
REL Doc. No.	103067	Completed Date	01/28/2014

# Test Conditions 試 驗 條 件

1.Sample Plan:	N=5 AC=0 RE=1
2.Conditions :	Steam Aging 8Hr,Solder Temp. : 245±5°C Dipping time : 5±0.5sec
	Solder pot : Sn96.5/Ag3/Cu0.5 Specific gravity of Flux : 0.847(ROL1)
3.Test Frequency :	PPCM,Freq. once/quarter Qualification Customer Requirement
5. Test Frequency .	Material /Operation parameter of material change Others:

### Criteria 判定標準

			ler coating free	from defects for	a minimum of
	ritical surface a		1 . 1 . 1		
		ting, nonwetting,	and pinholes ar	e not cause for rej	ection.
3. The critical a	rea as below.	_			
A (Underside) B (24)	aaling Plane Setting Pla Setting Plane 2X		eating Iane Critical Area	Critical area	1
Test 試 <b>驗</b> 結 果	: Result :0/5 (fai	lure/total Q'ty)	⊠Accept 合	络 □Reject Z	下合格
Approved By:	WP Huang	Checked By:	Fu Yang	Prepared By:	WenHuaWu
<b>D</b> (				<b>D</b> (	
Date:	01/28/2014	Date:	01/28/2014	Date:	01/28/2014
INGSEN RELIABILIT	Y LAB			Date:	
Date: <i>INGSEN RELIABILIT</i> -1 Nan 2nd Road. T. TEL: 04-25335120	Y LAB	, Taiwan 427 R.O.O		Date:	01/28/2014 657306-01-0

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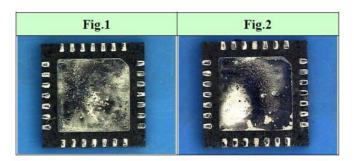




Doc#SD1030114

Attachment: Test Result

After Test



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# nuvoton

		Linasen	Precisi	on Industries.,			
<u>UNGS</u>	<b>-A'</b>	•		份有限公司		L	00c#LF10301
ad Fatigu 腳疲勞強度						Date Page	: 01/23/2014 : 6 of
Sample Informat 產品資料	tion						
Customer	LPI			Month	01/	2014	
Package Type	SOP008	М		Leadframe	<b>C1</b>	94AG	
Run No.	413685			Mold Compound	EN	IE-G600	
Device Type	Dummy			Au Wire	<b>N/</b>	4	
Lot No.	N/A			Epoxy	<b>N/</b> 2	4	
Request No.	103058			Die Coating	<b>N</b> //	4	
Lead Plating	Matte Ti	in		Received Date	01/	23/2014	
試 驗 條 件							
1.Sample Plan: 2.Conditions: 3.Test Frequency Measuring Data 試驗結果	: PPC Mat	90° ,Wei CM,Freq <u>.ond</u> terial /Opera	ce/quarter ation para	meter of material o ccept 合格 □Ro	hang	e Others	-
2.Conditions : 3.Test Frequency Measuring Data	Angle Angle PPC Mat	90°,Wei CM,Freq. <u>on</u> terial /Opera	<b>ght 3oz ,</b> ce/quarter ation para	Qualification Meter of material of Cccept 合格 □Re	hang	e Others	-
2.Conditions: 3.Test Frequency Measuring Data 試驗結果 Sampl	Angle Angle PPC Mat	90° ,Wei CM,Freq <u>.ond</u> terial /Opera	<b>ght 3oz ,</b> 1 ce/quarter ation para	Qualification Meter of material of Cccept 合格 □Re	hang	e Others	: PE request
2.Conditions: 3.Test Frequency Measuring Data 試驗結果 Sampl Lead No.	Angle Angle PPC Mat	90°,Wei CM,Freq. <u>ond</u> terial /Opera àiled/total Q'ty; NO.1	ght 3oz ,1 ce/quarter ation para	Qualification meter of material of ccept 合格 □Ro .2 NO.3	hang	e □Others 不合格 NO.4	PE request
2.Conditions: 3.Test Frequency Measuring Data 試驗結果 Sampl Lead No. LEAD 1	Angle Angle PPC Mat	90° ,Wei CM,Freq <u>.ond</u> terial /Opera àiled/total Q'tyj NO.1 4.5	ght 3oz , ce/quarten ation para ) \arrow A( NO 5	Qualification meter of material of ccept 合格 □Ro 2 NO.3 5.5 3.5	hang	re □Others 不合格 NO.4 4.5	NO.5
2.Conditions: 3.Test Frequency Measuring Data 試驗結果 Sampl Lead No. LEAD 1 LEAD 2	Angle Angle PPC Mat	90° ,Wei CM,Freq. <u>ond</u> terial /Opera ailed/total Q'ty; NO.1 4.5 55	ght 3oz , ce/quarter ation para ) \sum A( NO 5 5	Qualification meter of material of ccept 合格 □Ro 2 NO.3 5.5 3.5	hang	e □Others 不合格 NO.4 4.5 4.5	NO.5
2.Conditions: 3.Test Frequency Measuring Data 試驗結果 Sampl Lead No. LEAD 1 LEAD 2 LEAD 3	Angle Angle PPC Mat	90° ,Wei CM,Freq. <u>ond</u> terial /Opera àailed/total Q'ty) NO.1 4.5 55 5.5	ght 3oz ,1 ce/quarter ation para ) \alpha A NO 5 5 5 4.8	Qualification meter of material of ccept 合格 □Ro 2 NO.3 5.5 3.5 5 4.5 4.5	hang	e Others 不合格 NO.4 4.5 4.5 4.5	NO.5 5 4 4
2.Conditions: 3.Test Frequency Measuring Data 試驗結果 Sampl Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4	Angle Angle PPC Mat	90° ,Wei CM,Freq. <u>ond</u> terial /Opera àiled/total Q'ty NO.1 4.5 55 5.5 5.5	ght 3oz ,1 ce/quarter ation para ) ⊠A( NO 5 5 4.8 7	Qualification meter of material of ccept 合格 □Ro 2 NO.3 5.5 3.5 5 4.5 4.5 6 6	hang	e □Others 不合格 NO.4 4.5 4.5 4.5 4.5 4.5	NO.5 5 4 5 5
2.Conditions: 3.Test Frequency Measuring Data 試驗結果 Sampl Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5	Angle Angle PPC Mat	90° ,Wei CM,Freq. <u>ond</u> terial /Opera ailed/total Q'ty; NO.1 4.5 55 5.5 5.5 5.5 4	ght 3oz ,1 ce/quarter ation para ) ⊠A( NO 5 5 5 4.5 7 6.5	Qualification meter of material of ccept 合格 □Ro 2 NO.3 5.5 3.5 4.5 4.5 6 6 5 5.5	hang	e Others 不合格 NO.4 4.5 4.5 4.5 4.5 4.5 4.5	: PE request NO.5 5 4 4 5 4
2.Conditions : 3.Test Frequency Measuring Data 試驗結果 Sampl Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5 LEAD 6	Angle Angle PPC Mat	90° ,Wei CM,Freq. <u>ond</u> terial /Opera àiled/total Q'ty) NO.1 4.5 55 5.5 5.5 5.5 4 5	ght 3oz ,1 ce/quarten ation para ) ⊠A NO 5 5 4.5 7 6.5 4.5	Qualification meter of material of ccept 合格 □Re 2 NO.3 5.5 3.5 5 4.5 4.5 6 6 5 5.5 6 6	hang	e Others 不合格 NO.4 4.5 4.5 4.5 4.5 4.5 4.5 3.5	: PE request NO.5 5 4 4 5 4 4 4 4

Approved By: WP Huang Checked By: Fu Yang Prepared By: WenHuaWu Date: 01/23/2014 Date: 01/23/2014 Date: 01/23/2014

LINGSEN RELIABILITY LAB

5-1 Nan 2nd Road. T.E.P.Z. Taichung, Taiwan 427 R.O.C TEL : 04-25335120 FAX : 04-25327904

	A Lingsen 菱生精密	否工業股份有	限公司	1	Doc#LF103010
ad Fatigu					: 01/23/2014
卻疲勞強度	試驗報告			Page	: <u>6</u> of
Sample Informati 產 品 資 料	on				
Customer <u>I</u>	LPI	Mont	h	01/2014	
Package Type	TO92STD	Lead	frame	KFC	
Run No. 4	13686	Mold	Compound	EME-G600	
Device Type <u>I</u>	Dummy	Au W	Vire	N/A	
Lot No. <u>N</u>	N/A	Epox	У	N/A	
Request No. 1	03058	Die C	Coating	N/A	
Lead Plating N	Matte Tin	Rece	ived Date	01/23/2014	
式驗條件	N=5 AC=0	DF=1			
Test Conditions 武 驗 條 件 1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試 驗 結 果	N=5       AC=0         Angle 90°       ,Wei         □PPCM,Freq.on         □Material /Operation         0/5       (failed/total Q'ty)	ce/quarter 🛛 🕅 ation parameter	Qualification	hange Others	Requirement : PE request
式 驗 條件 1.Sample Plan: 2.Conditions: 3.Test Frequency: Measuring Data	Angle 90°, Wei	<b>ght 3oz ,must</b> ≧ ce/quarter ⊠ ation parameter	Qualification of material c	hange Others	
式 驗 條件 1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試 驗 結 果 Sample	Angle 90°, Wei PPCM, Freq. on Material /Opera 0/5 (failed/total Q'ty	ght 3oz ,must ≧ ce/quarter ⊠ ation parameter	]Qualification of material c 合格 □Re	hange □Others <b>ject</b> 不合格	: PE request
式 驗 條 件 1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試 驗 結 果 Sample Lead No.	Angle 90°, Wei PPCM,Freq.on Material /Opera 0/5 (failed/total Q'ty No. NO.1	ight 3oz ,must ≧ ce/quarter ⊠ ation parameter ) ⊠Accept NO.2	Qualification of material c 合格 □Re NO.3	hange □Others ject 不合格 NO.4	: PE request NO.5
式 驗 條件 1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試 驗 結 果 Sample Lead No. LEAD 1	Angle 90°, Wei PPCM,Freq.on Material /Opera 0/5 (failed/total Q'ty No. NO.1 20	ght 3oz ,must ≧ ce/quarter ⊠ ation parameter ) ⊠Accept NO.2 19.5	Qualification of material c 合格 □Re NO.3 19	hange □Others ject 不合格 NO.4 14.5	NO.5
式 験 條 件 1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試 驗 結 果 Sample Lead No. LEAD 1 LEAD 2	Angle 90°         ,Wei           PPCM,Freq.on         Material /Operation           Material /Operation         Material /Operation           0/5         (failed/total Q'ty)           No.         NO.1           20         16	ght 3oz ,must ≥         ce/quarter       ⊠         ation parameter       ∅         MO.2       19.5         16.5       16.5	Qualification of material c 合格 □Re NO.3 19 12	hange Others ject 不合格 NO.4 14.5 15.5	: PE request NO.5 18 17
式験條件 1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試験結果 Sample Lead No. LEAD 1 LEAD 2 LEAD 3	Angle 90°         ,Wei           PPCM,Freq.on	ght 3oz ,must ≥ ce/quarter ⊠ ation parameter ) ⊠Accept NO.2 19.5 16.5 19.5	Qualification of material c 合格 □Re NO.3 19 12 17	hange 〇Others ject 不合格 NO.4 14.5 15.5 16	NO.5 18 17 14.5

Approved By:	WP Huang	Checked By:	Fu Yang	Prepared By:	WenHuaWu
Date:	01/23/2014	Date:	01/23/2014	Date:	01/23/2014

LINGSEN RELIABILITY LAB

5-1 Nan 2nd Road. T.E.P.Z. Taichung, Taiwan 427 R.O.C TEL: 04-25335120 FAX: 04-25327904

<u>UNGSEA</u>	菱生精密		ion Indu 设份有限			Doc#LF1030102
ead Fatigue 腳疲勞強度試						ate : $01/23/2014$ age : of
Sample Information 產品資料						
Customer LPI			Month		01/2014	
Package Type SOT	-25M		Leadfran	ne	E64T	
Run No. 4136	87		Mold Co	ompound	EME-G600	
Device Type <b>Dum</b>	my		Au Wire	,	N/A	
Lot No. N/A			Epoxy		N/A	
Request No. 1030	58		Die Coat	ting	N/A	
Lead Plating Mat	e Tin		Received	d Date	01/23/2014	
Test Conditions						
試 驗 條 件						
1.Sample Plan : <u>N</u>	=5 AC=0	RE=1				
2.Conditions : A	ngle 90°, Weig	oht 207				
				•		
3. Test Frequency :	PPCM,Freq. <u>onc</u> Material /Opera	ce/quarte	e <u>r</u> 🛛 Qu	alification		ner Requirement ers : PE request
3. Test Frequency :	Material /Opera	ce/quartention para	e <u>r</u> ⊠Qu ameter of 1	nalification material cl		-
3. lest Frequency · Measuring Data 試驗結果	Material /Opera (failed/total Q'ty)	tion para	e <u>r</u> ⊠Qu ameter of 1	nalification material cl	nange Othe	-
3.1est Frequency ·	Material /Opera (failed/total Q'ty) NO.1	ntion para	m ⊠Qu ameter of 1 Accept 合	alification material cl 格 □Re NO.3	nange □Othe ject 不合格 NO.4	NO.5
3. lest Frequency . Measuring Data 試驗結果	Material /Opera (failed/total Q'ty)	ntion para	m ⊠Qu ameter of 1 Accept 合 D.2	alification material cl 格 □Re	nange □Othe <b>ject</b> 不合格	NO.5 3.5
3. Test Frequency · Measuring Data 試驗結果 Sample No Lead No. LEAD 1	Material /Opera (failed/total Q'ty) NO.1 3.5	xe/quarte ntion para NC 3 2.	m ⊠Qu ameter of 1 Accept 合	alification material cl 格 □Re NO.3 3	nange □Othe ject 不合格 NO.4 3	NO.5
3. Test Frequency ·	Material /Opera (failed/total Q'ty) NO.1 3.5 3	xe/quarte ntion para NC 3 2.	$\underline{\mathbf{r}}$ $\mathbf{Q}$ ameter of 1 <b>Accept 合 D.2</b> 3       .5       .5	nalification material cl 格 □Re NO.3 3 4	nange □Othe ject 不合格 NO.4 3 4	NO.5 3.5 3.5
3. Test Frequency . Measuring Data 試驗結果	Material /Opera (failed/total Q'ty) NO.1 3.5 3 3.5	xe/quarte ntion para A NC 3 2. 2. 2. 3	$\underline{\mathbf{r}}$ $\mathbf{Q}$ ameter of 1 <b>Accept 合 D.2</b> 3       .5       .5	alification material cl 格 □Re NO.3 3 4 3.5	nange □Othe ject 不合格 NO.4 3 4 3.5	NO.5           3.5           3.5           4
3. Test Frequency · Measuring Data 試驗結果 Sample No. Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4	Material /Opera (failed/total Q'ty) NO.1 3.5 3 3.5 3.5 3.	xe/quarte ation pars NC 3 2. 3. 3.	er Qu ameter of 1 Accept 合 D.2 3 5 5 3	alification material cl 格 □Re NO.3 3 4 3.5 3	nange □Othe ject 不合格 3 4 3.5 3	NO.5           3.5           3.5           4           4
3. Test Frequency · Measuring Data 試驗結果 Sample No. Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5	Material /Opera (failed/total Q'ty) NO.1 3.5 3 3.5 3.5 3.5 3.5	×e/quarte ntion para NC 2. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3	r1 図Qu ameter of 1 Accept 合 .2 3 .5 .5 .5 .5 .5	alification material cl 格 □Re NO.3 3 4 3.5 3 3 3	nange □Othe ject 不合格 3 4 3.5 3 4	NO.5           3.5           3.5           4           4           3.5
3. Test Frequency . Measuring Data 試驗結果 Sample No Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5 LEAD 6	Material /Opera (failed/total Q'ty) NO.1 3.5 3 3.5 3. 3.5 3.5 3.5 3.5 3.5 3.5 3.	xe/quarte ation para MA NC 3 2. 2. 3. 3. 3. 3. 3.	en     Qu       ameter of 1       Accept 合       0.2       3       .5       .5       .3       .5       .3	alification material cl 格 □Re NO.3 3 4 3.5 3 3 3.5	nange □Othe ject 不合格 3 4 3.5 3 4 3.5	NO.5           3.5           3.5           4           4           3.5           3.5           3.5

Approved By:WP HuangChecked By:Fu YangPrepared By:WenHuaWuDate:01/23/2014Date:01/23/2014Date:01/23/2014

LINGSEN RELIABILITY LAB

5-1 Nan 2nd Road. T.E.P.Z. Taichung, Taiwan 427 R.O.C

TEL: 04-25335120 FAX: 04-25327904

UNGSE	▲ 菱生精	密工業股份有	限公司	I	Doc#LF103010
ad Fatigu 腳疲勞強度語					e: 01/23/2014 e: 6 of
Sample Informati 產品資料	on				
Customer <u>I</u>	<b>PI</b>	Mon	th	01/2014	
Package Type 1	CQ320707	Lead	lframe	C7025AG	
Run No. 4	13688	Mole	d Compound	EME-G700	
Device Type I	Dummy	Au	Vire	N/A	
Lot No. <u>N</u>	N/A	Epos	кy	N/A	
Request No. 1	.03058	Die	Coating	N/A	
Lead Plating <u>N</u>	Matte Tin	Rece	eived Date	01/23/2014	
試 <b>驗 條</b> 件					
1.Sample Plan: 2.Conditions: 3.Test Frequency: Measuring Data 試驗結果	Material /Ope	nce/quarter	Qualificatio	hange Others	Requirement : PE request
<ol> <li>Sample Plan :</li> <li>Conditions :</li> <li>Test Frequency :</li> <li>Measuring Data</li> </ol>	Angle 90°, Wo PPCM,Freq.or Material /Ope	eight 2oz ,must nce/quarter	Qualification of material c	hange Others	-
1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試驗結果 Sample	Angle 90°, Wo PPCM,Freq.or Material /Ope	eight 2oz ,must nce/quarter	Qualification of material c t 合格 □Re	hange □Others <b>ject</b> 不合格	: PE request
1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試驗結果	Angle 90°, Wo PPCM,Freq.or Material /Ope 0/5 (failed/total Q'f No. NO.1	eight 2oz ,must       nce/quarter       ration parameter       ration parameter       ry)       NO.2	Qualification of material c t 合格 □Re NO.3	hange □Others ject 不合格 NO.4	: PE request NO.5
1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試驗結果 Sample Lead No. LEAD 1	Angle 90°         ,Wo           PPCM,Freq.or         Material /Ope           Material /Ope         (failed/total Q'the second secon	eight 2oz ,must       nce/quarter       ration parameter       y)       Accep       NO.2       6.5	Qualification of material c t 合格 □Re NO.3 7.5	hange □Others ject 不合格 NO.4 6	NO.5
1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試驗結果 Lead No. LEAD 1 LEAD 2	Angle 90°         ,Wo           PPCM,Freq.or         Material /Ope           Material /Ope         (failed/total Q'the second secon	eight 2oz ,must         nce/quarter       Image: constraint of the second se	Qualification of material c t 合格 □Re NO.3 7.5 4.5	hange □Others ject 不合格 NO.4 6 4.5	NO.5 8 4.5
1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試驗結果 Lead No. LEAD 1 LEAD 2 LEAD 3	Angle 90°         ,Wo           PPCM,Freq.or         Material /Ope           Material /Ope         (failed/total Q'total	NO.2       6.5       6.5       4.5	Qualification of material c t 合格 □Re NO.3 7.5 4.5 4	hange Others ject 不合格 NO.4 6 4.5 5.5	NO.5 8 4.5 6
1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試驗結果 Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4	Angle 90°         ,Wo           PPCM,Freq.or         Material /Ope           Material /Ope         (failed/total Q'frequence)           1         No.           4.5         8.5           4.5         6	eight 2oz ,must         nce/quarter       Image: Comparameter         ration parameter       Image: Comparameter         mail (mail for the mail for th	Qualification of material c t 合格 □Re NO.3 7.5 4.5 4 7	hange Others ject 不合格 NO.4 6 4.5 5.5 4	: PE request NO.5 8 4.5 6 7
1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試驗結果 Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5	Angle 90°         ,Wo           PPCM,Freq.or         Material /Ope           Material /Ope         (failed/total Q'the second secon	eight 2oz ,must         nce/quarter       Image: constraint of parameter         ration parameter         yy)       Image: constraint of parameter         NO.2       6.5         6.5       6.5         4.5       4.5         5       5	Qualification of material c t 合格 □Re NO.3 7.5 4.5 4 7 4.5	hange Others ject 不合格 0 6 4.5 5.5 4 6	PE request NO.5 8 4.5 6 7 5.5
1.Sample Plan : 2.Conditions : 3.Test Frequency : Measuring Data 試驗結果 Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5 LEAD 6	Angle 90°         ,Wo           PPCM,Freq.or         Material /Ope           0/5         (failed/total Q'total Q	eight 2oz ,must         nce/quarter       Image: constraint of the second se	Qualification of material c t 合格 □Re NO.3 7.5 4.5 4 7 4.5 5.5	hange 〇Others ject 不合格 0 6 4.5 5.5 4 6 5.5	PE request NO.5 8 4.5 6 7 5.5 6

Approved By:	WP Huang	Checked By:	Fu Yang	Prepared By:	WenHuaWu
Date:	01/23/2014	Date:	01/23/2014	Date:	01/23/2014

LINGSEN RELIABILITY LAB

5-1 Nan 2nd Road. T.E.P.Z. Taichung, Taiwan 427 R.O.C TEL: 04-25335120 FAX: 04-25327904

		工業股份有	ndustries., j限公司	I	Doc# <b>LF103010</b>
ead Fatigue 腳疲勞強度試				Date Page	e: 01/23/2014 e: 6 of
Sample Information 產品資料					
Customer LPI		Mo	nth	01/2014	
Package Type TS4	81220	Lea	dframe	C7025AG	
Run No. 4130	589	Mo	ld Compound	EME-G700	
Device Type <b>Dun</b>	ımy	Au	Wire	N/A	
Lot No. N/A		Epc	xy	N/A	
Request No. 1030	)58	Die	Coating	N/A	
Lead Plating Mat	te Tin	Rec	eived Date	01/23/2014	
<b>Test Conditions</b>					
試 驗 條 件					
1.Sample Plan : <u>N</u>	=5 AC=0	RE=1			
2.Conditions : A					
	ngle 90°, Weig	ght 2oz ,must			
3.Test Frequency :	PPCM,Freq.onc	e/quarter	Qualification		r Requirement : PE request
	]PPCM,Freq. <u>onc</u> ]Material /Opera	ee/quarter [ tion paramete	Qualification	hange Others	-
3.Test Frequency :	]PPCM,Freq. <u>onc</u> ]Material /Opera (failed/total Q'ty)	ee/quarter [ tion paramete	Qualification r of material c	hange Others	-
3.Test Frequency: Measuring Data 試驗結果 Sample No	]PPCM,Freq. <u>onc</u> ]Material /Opera (failed/total Q'ty)	tion paramete ∑Accer	☑Qualification r of material c ot 合格 □Re	hange □Others <b>ject 不合格</b>	: PE request
3.Test Frequency: Measuring Data 試驗結果 Sample No Lead No.	PPCM,Freq. <u>onc</u> Material /Opera (failed/total Q'ty)	tion paramete ⊠Accep NO.2	⊠Qualification r of material c ot 合格 □Re NO.3	hange □Others ject 不合格 NO.4	: PE request NO.5
3.Test Frequency: Measuring Data 試驗結果 Sample No Lead No. LEAD 1	PPCM,Freq.onc Material /Opera (failed/total Q'ty) NO.1 2.5	ee/quarter [ tion paramete ⊠Accep NO.2 3	Qualification of material ci ot 合格 □Re NO.3 2.5	hange □Others ject 不合格 NO.4 3	: PE request NO.5 2.5
3.Test Frequency: Measuring Data 試驗結果 Sample No Lead No. LEAD 1 LEAD 2	PPCM,Freq.onc Material /Opera (failed/total Q'ty) NO.1 2.5 2.5	ee/quarter [ tion paramete ⊠Accep NO.2 3 3.5	Qualification of material ci ot 合格 □Re NO.3 2.5 3.5	hange □Others ject 不合格 NO.4 3 2.5	: PE request NO.5 2.5 2.5
3.Test Frequency: Measuring Data 試驗結果 Sample No Lead No. LEAD 1 LEAD 2 LEAD 3	PPCM,Freq.onc Material /Opera (failed/total Q'ty) NO.1 2.5 2.5 2.5 2.5	ition paramete ⊠Accep NO.2 3 3.5 3.5 3.5	Qualification of material c. ot 合格 □Re NO.3 2.5 3.5 3.5	hange □Others ject 不合格 NO.4 3 2.5 3.5	: PE request NO.5 2.5 2.5 3.5
3.Test Frequency: Measuring Data 試驗結果 Sample No Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4	PPCM,Freq.onc         Material /Opera         (failed/total Q'ty)         NO.1         2.5         2.5         2.5         2.5         2.5         2.5         2.5         2.5         2.5         4	ee/quarter [ tion paramete ⊠Accep NO.2 3 3.5 3.5 2.5	Qualification of material content of 合格 □Re NO.3 2.5 3.5 3.5 3.5 2.5	hange □Others ject 不合格 NO.4 3 2.5 3.5 3.5 3.5	: PE request NO.5 2.5 2.5 3.5 3.5 3.5
3.Test Frequency: Measuring Data 試驗結果 Sample No Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5	PPCM,Freq.onc Material /Opera (failed/total Q'ty) NO.1 2.5 2.5 2.5 2.5 4 3.5	ee/quarter [ tion paramete ⊠Accep NO.2 3 3.5 3.5 2.5 2.5	Qualification of material ci ot 合格 □Re 2.5 3.5 3.5 3.5 2.5 2.5	hange □Others ject 不合格 3 2.5 3.5 3.5 3.5 3.5	: PE request NO.5 2.5 2.5 3.5 3.5 2.5 2.5
3.Test Frequency: Measuring Data 試驗結果 Sample No Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5 LEAD 6	PPCM,Freq.onc Material /Opera (failed/total Q'ty) NO.1 2.5 2.5 2.5 4 3.5 2.5	ee/quarter [ tion paramete ⊠Accep NO.2 3 3.5 3.5 2.5 2.5 2.5 2.5	Qualification of material c. ot 合格 □ Re NO.3 2.5 3.5 3.5 2.5 2.5 2.5 3.5	hange Others ject 不合格 NO.4 3 2.5 3.5 3.5 3.5 3 2.5	: PE request NO.5 2.5 2.5 3.5 3.5 2.5 3.5 2.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3

Approved By:	WP Huang	Checked By:	Fu Yang	Prepared By:	WenHuaWu
Date:	01/23/2014	Date:	01/23/2014	Date:	01/23/2014

LINGSEN RELIABILITY LAB

5-1 Nan 2nd Road. T.E.P.Z. Taichung, Taiwan 427 R.O.C TEL: 04-25335120 FAX: 04-25327904

	AT Lingsen 菱生精密	密工業股份有	丽公司		Doc#LF10301
ead Fatigu 腳疲勞強度詞					e: 01/23/2014 e: 6 of -
Sample Informatio 產品資料	n				
Customer L	PI	Mor	nth	01/2014	
Package Type P	LC032	Lea	lframe	C151AG	
Run No. 4	13690	Mol	d Compound	EME-G600	
Device Type D	Jummy	Au	Wire	N/A	
Lot No. N	// <b>A</b>	Еро	ху	N/A	
Request No. 1	03058	Die	Coating	N/A	
Lead Plating <u>N</u>	latte Tin	Rec	eived Date	01/23/2014	
1.Sample Plan: 2.Conditions:	N=5 AC=0 Angle 90°, We				
2.Conditions: 3.Test Frequency: Measuring Data 試驗結果(	Angle 90°, We PPCM,Freq.or Material /Oper (failed/total Q'ty	<b>ight 3oz ,must</b> ace/quarter	Qualification	hange Others	: Requirement : PE request
2.Conditions : 3.Test Frequency : Measuring Data	Angle 90°, We PPCM,Freq.or Material /Oper (failed/total Q'ty	<b>ight 3oz ,must</b> ace/quarter	Qualification r of material c	hange Others	-
2.Conditions: 3.Test Frequency: Measuring Data 試驗結果( Sample	Angle 90°, We PPCM,Freq.or Material /Oper (failed/total Q'ty No	ight 3oz ,must <u>ace/quarter</u> [ ation paramete ) <b>Accep</b>	☑Qualificatio r of material c <b>t 合格 □Re</b>	hange □Others <b>ject 不合格</b>	: PE request
2.Conditions: 3.Test Frequency: Measuring Data 試驗結果 Sample Lead No.	Angle 90°, We Angle 90°, We PPCM,Freq.or Material /Oper (failed/total Q'ty No. NO.1	ight 3oz ,must ice/quarter	☑Qualification r of material c t 合格 □Re NO.3	hange □Others ject 不合格 NO.4	: PE request
2.Conditions : 3.Test Frequency : Measuring Data 試驗結果( Sample Lead No. LEAD 1	Angle 90°         We           PPCM,Freq.or         Material /Oper           Material /Oper         //5           (failed/total Q'ty)         No.           NO.         NO.1           4         4	ight 3oz ,must ace/quarter	Qualification r of material c t 合格 □Re NO.3 4.5	hange □Others ject 不合格 NO.4 4.5	PE request
2.Conditions : 3.Test Frequency : Measuring Data 試驗結果( Sample Lead No. LEAD 1 LEAD 2	Angle 90°         We           PPCM,Freq.or         Material /Oper           Material /Oper         (failed/total Q'ty)           No.         NO.1           4         5	ight 3oz ,must ice/quarter [ ation paramete b)	Qualification r of material c t 合格 □Re NO.3 4.5 5.5	hange □Others ject 不合格 NO.4 4.5 5.5	: PE request NO.5 3.5 5.5
2.Conditions : 3.Test Frequency : Measuring Data 試驗結果( Sample Lead No. LEAD 1 LEAD 2 LEAD 3	Angle 90°         We           PPCM,Freq.or         Material /Oper           Material /Oper         (failed/total Q'ty)           No.         NO.1           4         5           5.5         5.5	ight 3oz ,must         ight 3oz ,must         ice/quarter       []         ation paramete         ight 3oz ,must         ight 3oz ,must         ation paramete         ight 3oz ,must         ight 3oz ,must         ation paramete         ight 3oz ,must         ight 3oz ,must 3oz ,must         ight 3oz ,must 3o	Qualification r of material c t 合格 □Re NO.3 4.5 5.5 7.5	hange □Others ject 不合格 NO.4 4.5 5.5 6	: PE request NO.5 3.5 5.5 4.5
2.Conditions : 3.Test Frequency : Measuring Data 試驗結果( Sample Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4	Angle 90°         We           PPCM,Freq.or         Material /Oper           Material /Oper         (failed/total Q'ty)           No.         NO.1           4         5           5.5         5.5	ight 3oz ,must         MO.2         5.5         5         4.5         4.5	Qualification r of material c t 合格 □Re NO.3 4.5 5.5 7.5 4	hange Others ject 不合格 NO.4 4.5 5.5 6 5.5	: PE request NO.5 3.5 5.5 4.5 5
2.Conditions : 3.Test Frequency : Measuring Data 試驗結果( Sample Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5	Angle 90°         We           PPCM,Freq.or         Material /Oper           Material /Oper         (failed/total Q'ty)           No.         NO.1           4         5           5.5         5           5.5         5           3.5         3.5	ight 3oz ,must         ation parameter         ight 3oz ,must         ation parameter         NO.2         5.5         5         4.5         4.5         6	Qualification r of material c t 合格 □Re NO.3 4.5 5.5 7.5 4 4.5	hange Others ject 不合格 A.5 5.5 6 5.5 6 5.5 4.5	: PE request NO.5 3.5 5.5 4.5 5 5
2.Conditions : 3.Test Frequency : Measuring Data 試験結果 Sample Lead No. LEAD 1 LEAD 2 LEAD 3 LEAD 4 LEAD 5 LEAD 6	Angle 90°         We           PPCM,Freq.or         Material /Oper           Material /Oper         (failed/total Q'ty)           No.         NO.1           4         5           5         5.5           5         3.5           4.5         4.5	ight 3oz ,must         ation parameter         ight 3oz ,must         ation parameter         NO.2         5.5         5         4.5         6         6.5	Qualification r of material c t 合格 □Re NO.3 4.5 5.5 7.5 4 4.5 4.5 4.5	hange 〇Others ject 不合格 4.5 5.5 6 5.5 4.5 4.5	: PE request NO.5 3.5 5.5 4.5 5 5 4.5

Approved By:	WP Huang	Checked By:	Fu Yang	Prepared By:	WenHuaWu
Date:	01/23/2014	Date:	01/23/2014	Date:	01/23/2014

LINGSEN RELIABILITY LAB

5-1 Nan 2nd Road. T.E.P.Z. Taichung, Taiwan 427 R.O.C TEL: 04-25335120 FAX: 04-25327904