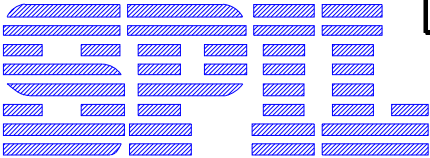


Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

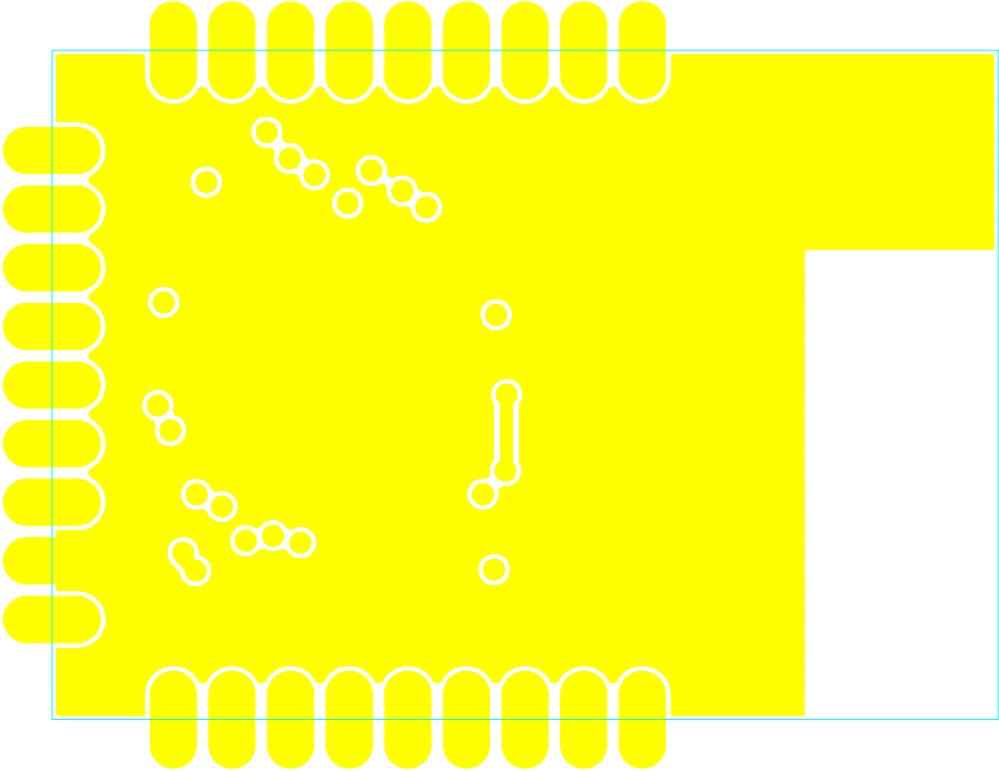
CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 <4L>	
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE	
	DATE 05-26-2016	REV NO. C

LAYOUT	
<input checked="" type="checkbox"/> L1	
<input type="checkbox"/> L2	
<input type="checkbox"/> L3	
<input type="checkbox"/> L4	
<input type="checkbox"/> Solder-Top	
<input type="checkbox"/> Solder-Btm	
<input type="checkbox"/> Drill	
<input type="checkbox"/> Silkscreen-Top	
<input type="checkbox"/> Cross-Section	
<input type="checkbox"/> Impedance Form	
<input type="checkbox"/> Revision history	

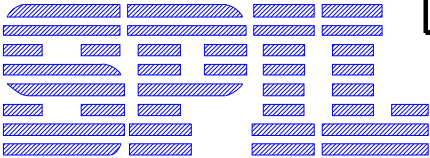
DESIGN Nicholas
CHECKED BY Shunji Lu
APPROVED BY April Chen

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SHEET NO. 1/11



Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

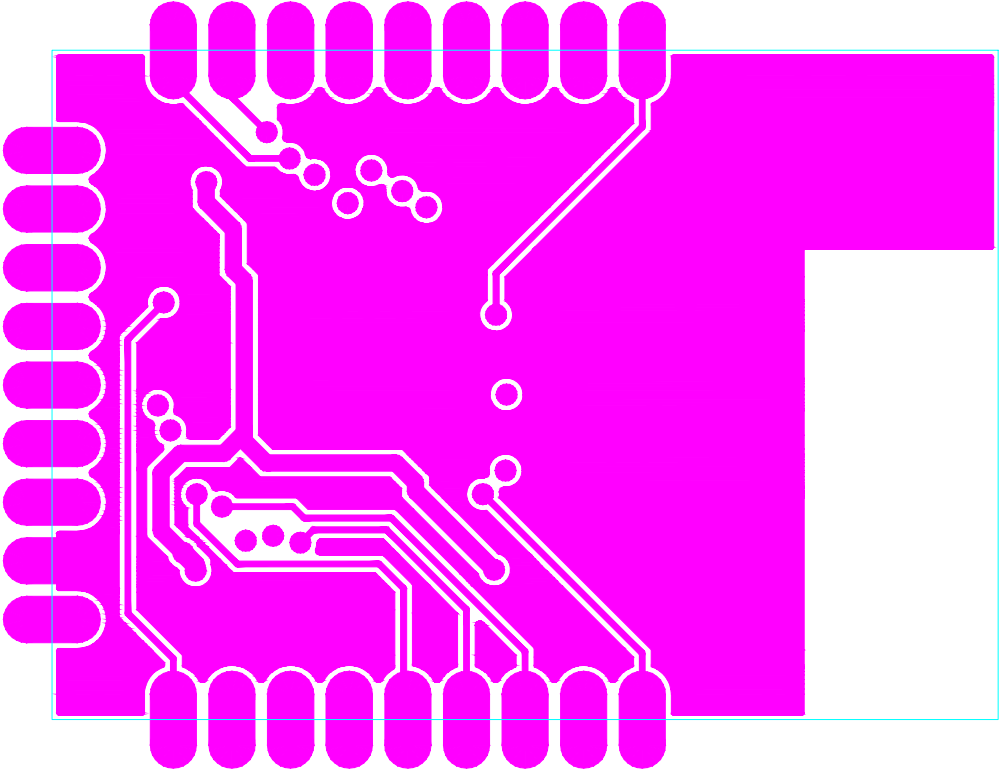
CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 <4L>	
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE	
	DATE 05-26-2016	REV NO. C

LAYOUT	
<input type="checkbox"/> L1	
<input checked="" type="checkbox"/> L2	
<input type="checkbox"/> L3	
<input type="checkbox"/> L4	
<input type="checkbox"/> Solder-Top	
<input type="checkbox"/> Solder-Btm	
<input type="checkbox"/> Drill	
<input type="checkbox"/> Silkscreen-Top	
<input type="checkbox"/> Cross-Section	
<input type="checkbox"/> Impedance Form	
<input type="checkbox"/> Revision history	

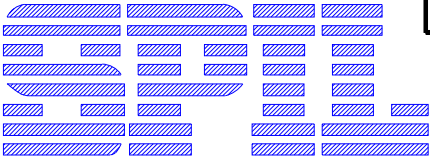
DESIGN Nicholas
CHECKED BY Shunji Lu
APPROVED BY April Chen

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SHEET NO.
2/11



Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

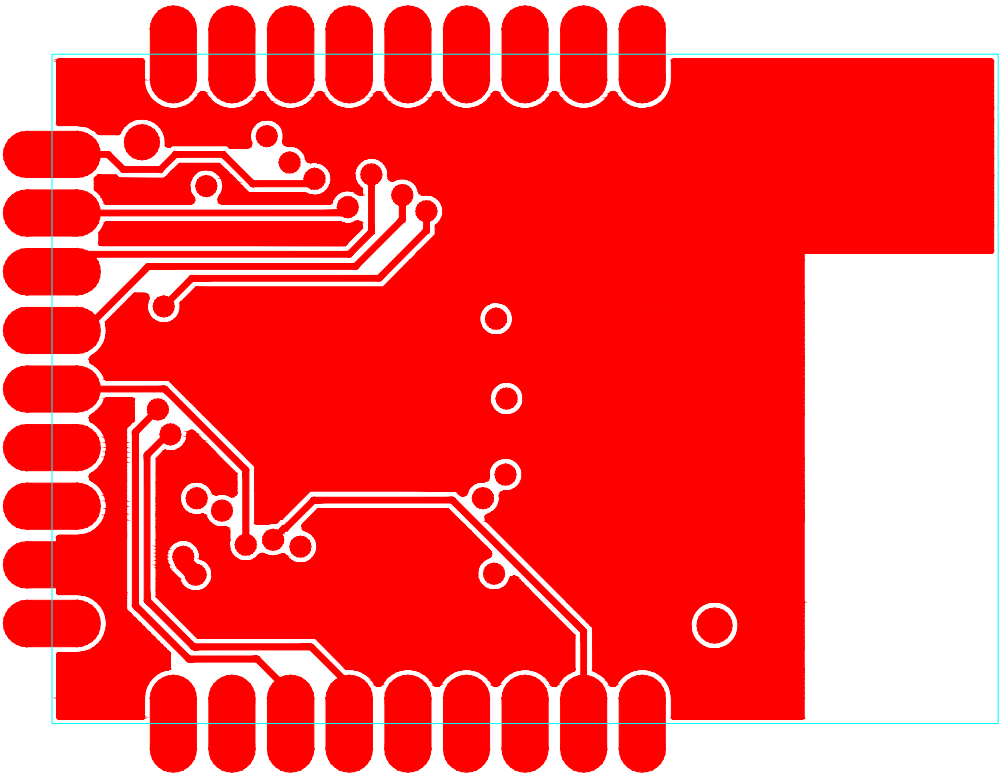
CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 <4L>	
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE	
	DATE 05-26-2016	REV NO. C

LAYOUT	
<input type="checkbox"/> L1	<input type="checkbox"/> Solder-Top
<input type="checkbox"/> L2	<input type="checkbox"/> Solder-Btm
<input checked="" type="checkbox"/> L3	<input type="checkbox"/> Drill
<input type="checkbox"/> L4	<input type="checkbox"/> Silkscreen-Top
<input type="checkbox"/> Cross-Section	<input type="checkbox"/> Impedance Form
<input type="checkbox"/> Revision history	

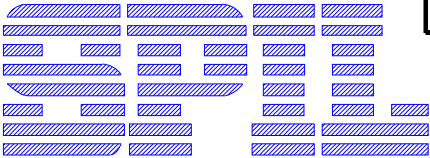
DESIGN Nicholas
CHECKED BY Shunji Lu
APPROVED BY April Chen

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SHEET NO. 3/11



Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

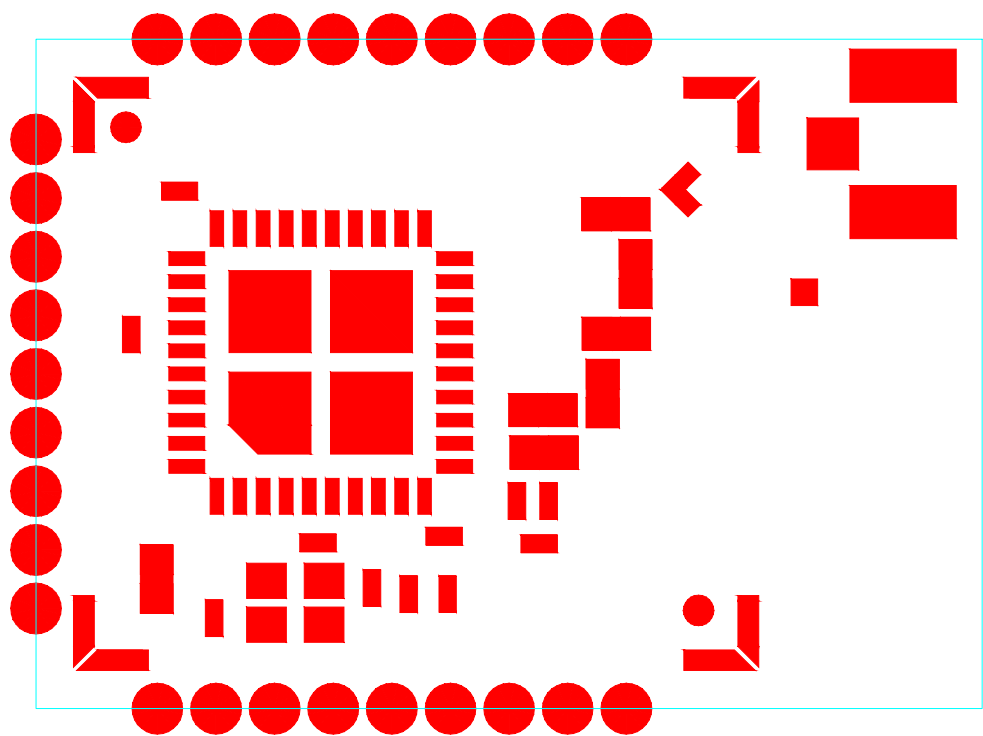
CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 <4L>	
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE	
	DATE 05-26-2016	REV NO. C

LAYOUT	
<input type="checkbox"/> L1	
<input type="checkbox"/> L2	
<input type="checkbox"/> L3	
<input checked="" type="checkbox"/> L4	
<input type="checkbox"/> Solder-Top	
<input type="checkbox"/> Solder-Btm	
<input type="checkbox"/> Drill	
<input type="checkbox"/> Silkscreen-Top	
<input type="checkbox"/> Cross-Section	
<input type="checkbox"/> Impedance Form	
<input type="checkbox"/> Revision history	

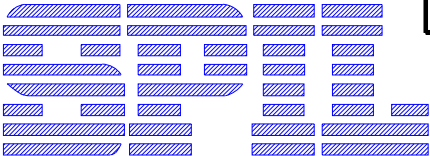
DESIGN Nicholas
CHECKED BY Shunji Lu
APPROVED BY April Chen

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SHEET NO.
4/11



Note : The copper of different net can't be exposed in front of finger after solder mask shift.

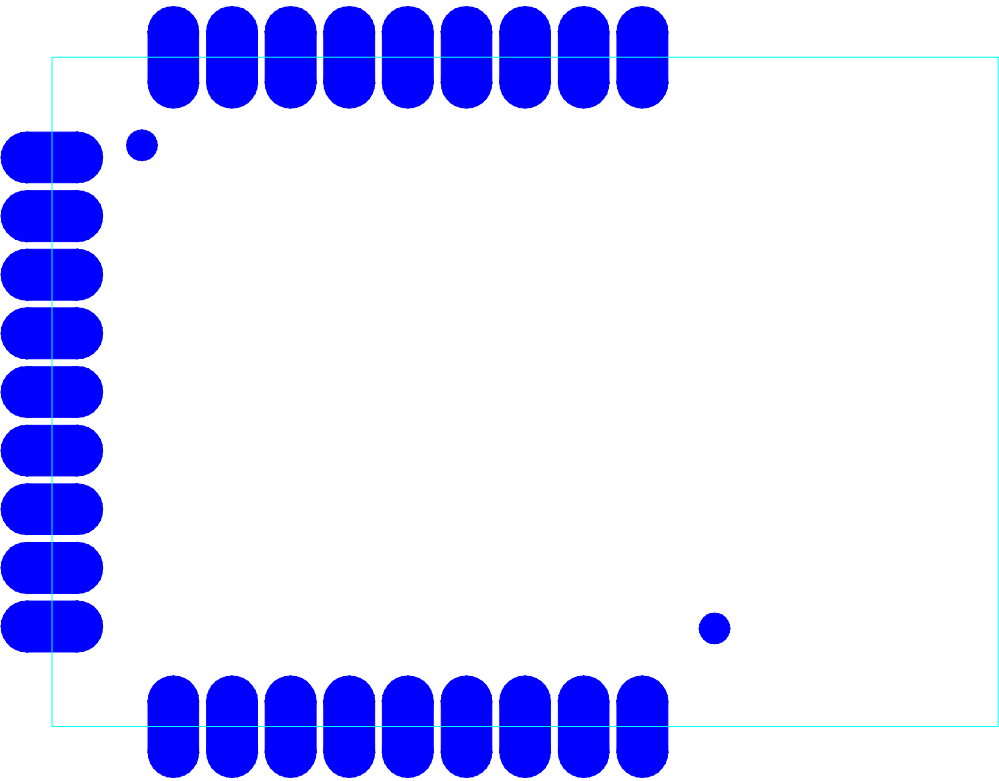
CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 <4L>	
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE	
	DATE 05-26-2016	REV NO. C

LAYOUT	
<input type="checkbox"/> L1	<input checked="" type="checkbox"/> Solder-Top <input type="checkbox"/> Solder-Btm <input type="checkbox"/> Drill <input type="checkbox"/> Silkscreen-Top
<input type="checkbox"/> L2	
<input type="checkbox"/> L3	
<input type="checkbox"/> L4	
<input type="checkbox"/> Cross-Section	
<input type="checkbox"/> Impedance Form	
<input type="checkbox"/> Revision history	

Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um
DESIGN	Nicholas
CHECKED BY	Shunji Lu
APPROVED BY	April Chen

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SHEET NO.
5/11



Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 <4L>	
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE	
	DATE 05-26-2016	REV NO. C

LAYOUT

☐ L1

☐ L2

☐ L3

☐ L4

☐ Solder-Top

☒ Solder-Btm

☐ Drill

☐ Silkscreen-Top

☐ Cross-Section

☐ Impedance Form

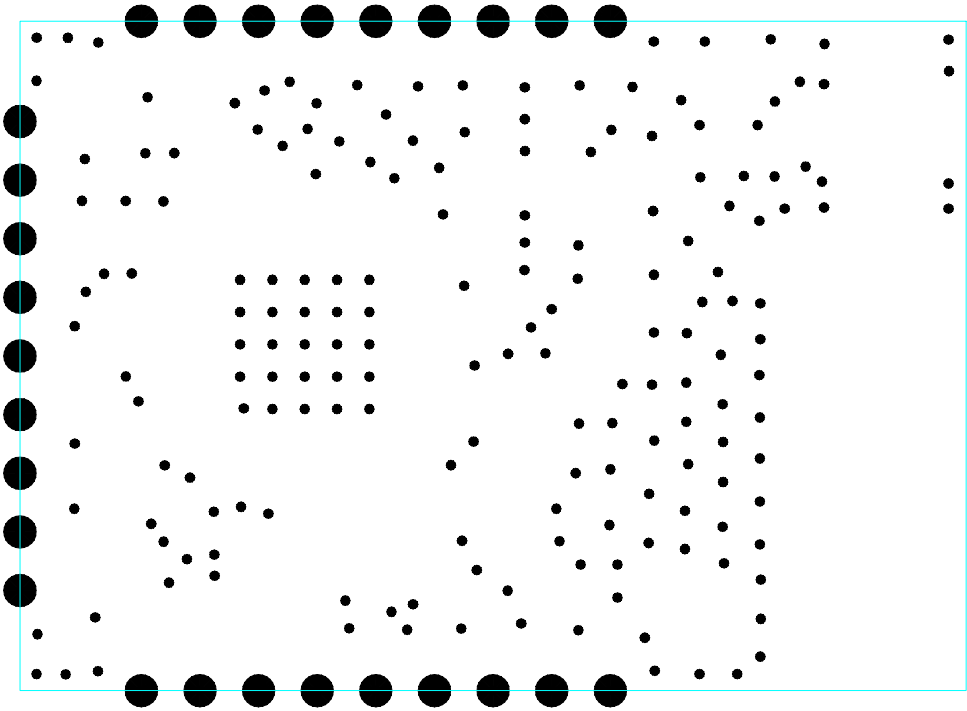
☐ Revision history

DESIGN Nicholas
CHECKED BY Shunji Lu
APPROVED BY April Chen

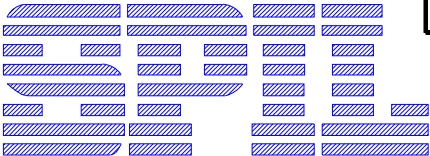
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SHEET NO.

6/11



Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

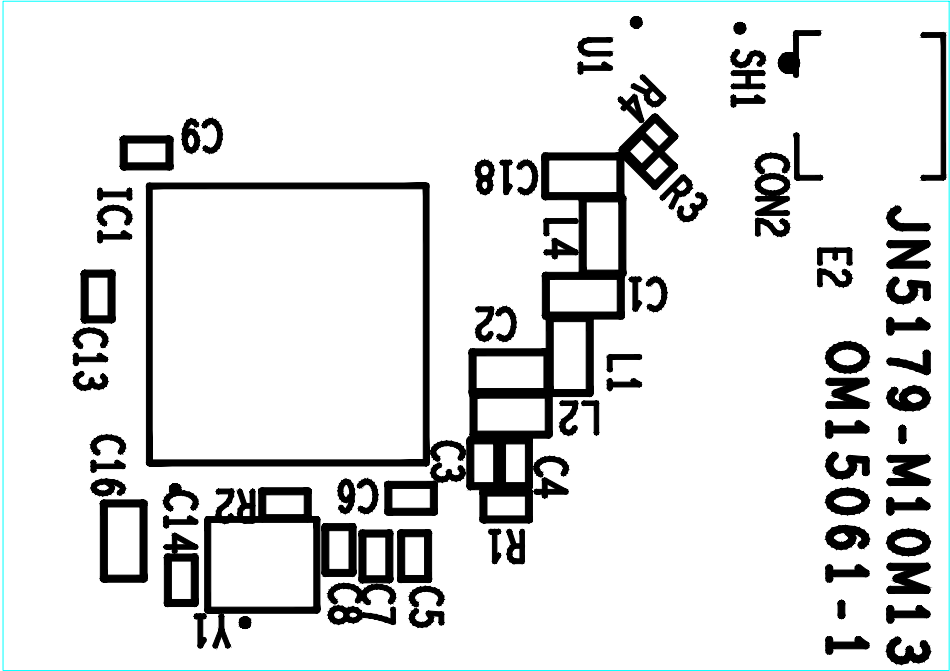
CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 <4L>	
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE	
	DATE 05-26-2016	REV NO. C

LAYOUT	
<input type="checkbox"/> L1	<input type="checkbox"/> Cross-Section <input type="checkbox"/> Impedance Form <input type="checkbox"/> Revision history
<input type="checkbox"/> L2	
<input type="checkbox"/> L3	
<input type="checkbox"/> L4	
<input type="checkbox"/> Solder-Top	
<input type="checkbox"/> Solder-Btm	
<input checked="" type="checkbox"/> Drill	
<input type="checkbox"/> Silkscreen-Top	

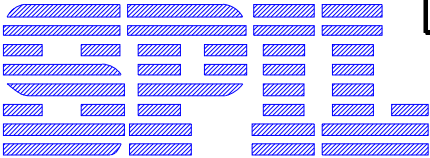
DESIGN Nicholas
CHECKED BY Shunji Lu
APPROVED BY April Chen

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SHEET NO. 7/11



Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 <4L>	
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE	
	DATE 05-26-2016	REV NO. C

LAYOUT	
<input type="checkbox"/> L1	
<input type="checkbox"/> L2	
<input type="checkbox"/> L3	
<input type="checkbox"/> L4	
<input type="checkbox"/> Solder-Top	
<input type="checkbox"/> Solder-Btm	
<input type="checkbox"/> Drill	
<input checked="" type="checkbox"/> Silkscreen-Top	
<input type="checkbox"/> Cross-Section	
<input type="checkbox"/> Impedance Form	
<input type="checkbox"/> Revision history	

DESIGN Nicholas
CHECKED BY Shunji Lu
APPROVED BY April Chen

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SHEET NO. 8/11

Substrate Fabrication Rule

1. MATERIAL

CORE

NPG-150N

PP

NPG-150NB

ABF

N/A

2. S/M(Die side)

PSR-2000 RD500

S/M(Ball side)

PSR-2000 RD500

3. STACK UP (um)

FINISHED BOARD THICKNESS : 1.2±0.12 mm

SOLDER MASK

25+5/-15

Cu PLATING

50+/-20

Cu FOIL

142.24+/-18

PP

16+/-5

Cu Plating

711.2+/-50

Cu Foil

16+/-5

PP

142.24+/-18

Cu FOIL

50+/-20

Cu PLATING

25+15/-0

SOLDER MASK

25+15/-0

TOTAL Cu THICKNESS

50±20 um

4. FINISHED BOARD THICKNESS

1.2±0.12 mm

5. SUBSTRATE DESIGN

☒ VIA IN PAD

☐ VIA ON PAD

☒ OTHER Via filled+capping

☐ Drop Test

6. PLATING THICKNESS

Cu

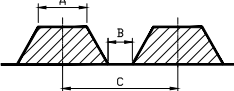
MIN.

15 um (PTH Via)

MIN.

N/A (Laser Via)

7. a. BONDING PAD PATTERN



A

MIN.

N/A um

B

MIN.

N/A um

C

MIN.

N/A um

D

Finger length

N/A um

8. TRACE PATTERN

☐ Standard

Trace width

Finished value

☒ Consign

≤5mil

Design width ±20um

☐ Other

>5mil

Design width ±25um

9. SUBSTRATE PROCESS

☒ NORMAL

☐ NON PLATING LINE

☐ ETCH BACK

☐ OTHER

10. SURFACE FINISHED

BOND FINGER+SOLDER BALL (w/B base)

☐ NIAU

☐ AFDP

☒ OTHER ENIG

PoP PAD

☐ NIAU

☐ DSP

☐ NIPDAU

☐ OTHER

Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

CUSTOMER

I/O DRAWING NO. (LAYER)

I-F3295 <4L>

PACKAGE TYPE & I/O (BODY SIZE)

CHIP SIZE

SIP-M-I(HF) 27 (20.5X14.5mm)

DATE

REV NO.

05-26-2016

C

LAYOUT

☐ L1

☐ L2

☐ L3

☐ L4

☐ Solder-Top

☐ Solder-Btm

☐ Drill

☐ Silkscreen-Top

☒ Cross-Section

☐ Impedance Form

☐ Revision history

DESIGN

Nicholas

CHECKED BY

Shunji Lu

APPROVED BY

April Chen

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SHEET NO.

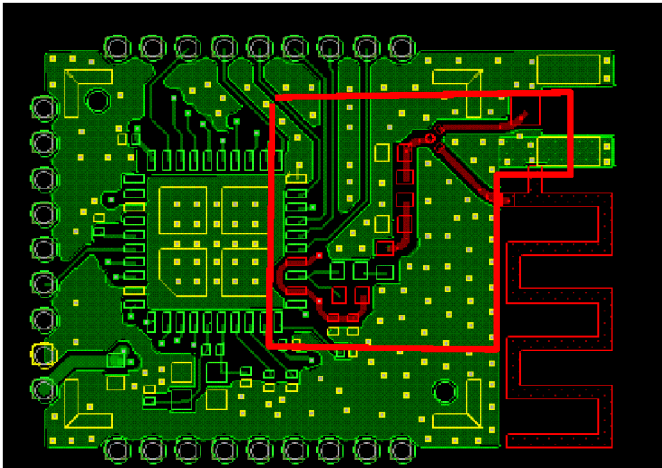
9/11

REV.A

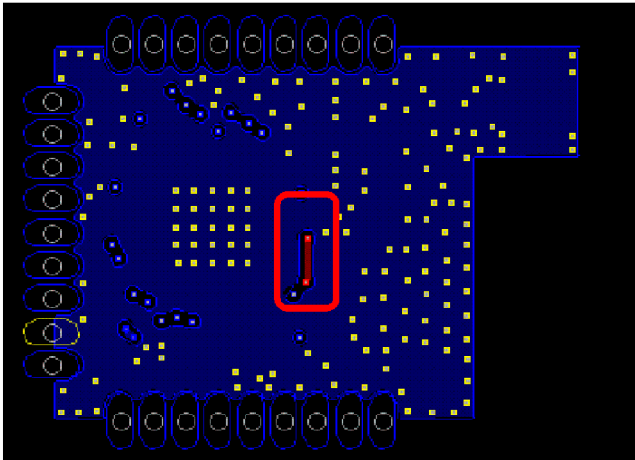
T-APD01-3-045-18

Impedance control: Please adjust the impedance 50 Ohm and control width +/-25um : Marked in red

Trace in layer Top



Trace in layer 2



Line Width/Space	127/128.4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

CUSTOMER

I/O DRAWING NO. (LAYER)

I-F3295 <4L>

PACKAGE TYPE & I/O (BODY SIZE)

SIP-M-I(HF) 27 (20.5X14.5mm)

CHIP SIZE

DATE

05-26-2016

REV NO.

C

LAYOUT

- ☐ L1
- ☐ L2
- ☐ L3
- ☐ L4
- ☐ Solder-Top
- ☐ Solder-Btm
- ☐ Drill
- ☐ Silkscreen-Top

- ☐ Cross-Section
- ☒ Impedance Form
- ☐ Revision history

DESIGN

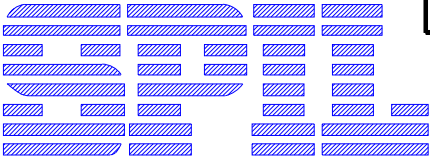
Nicholas

CHECKED BY

Shunji Lu

APPROVED BY

April Chen



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SHEET NO.

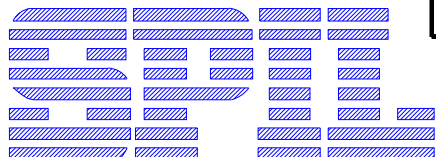
10/11

REVISION HISTORY :

[illegible]

Line Width/Space	127/128,4 um
Laser Via	N/A
Laser Via Land	N/A
Via	203.2 um
Via Land	457.2 um
Ball Pad Size	2100x1000 um
Ball Opening Size	2200x1100 um
Ball Pitch	1270 um
S/M REGIST.	37.5 um

CUSTOMER	I/O DRAWING NO. (LAYER) I-F3295 (4L)		<input type="checkbox"/> L3 <input type="checkbox"/> L4 <input type="checkbox"/> Solder-Top <input type="checkbox"/> Solder-Btm <input type="checkbox"/> Drill <input type="checkbox"/> Silkscreen-Top <input type="checkbox"/> Cross-Section <input type="checkbox"/> Impedance Form <input checked="" type="checkbox"/> Revision history	DESIGN Nicholas
PACKAGE TYPE & I/O (BODY SIZE) SIP-M-I(HF) 27 (20.5X14.5mm)	CHIP SIZE			CHECKED BY Shunji Lu
	DATE 05-26-2016	REV NO. C		APPROVED BY April Chen



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SHEET NO.

$$\frac{11}{11}$$