

**TITLE: Additional Assembly & Test subcontractor (Carsem SuZhou) for DFN1.0X0.6 Package**
**RELEASE DATE: 2013-08-20**
**OWNER DEPARTMENT: Product & Test**
**REVISION HISTORY**

(The original approval sheet is kept in DCC)

REVISION	RELEASE DATE	AUTHOR	DESCRIPTION OF CHANGES
A	2013-08-20	Weiwei Liu	original

## PROCESS CHANGE NOTIFICATION

---

**Additional Assembly & Test  
Subcontractor (Carsem SuZhou) for  
DFN1.0X0.6 Package**

PCN #

CN-00315A

---

Dear Valued Customer,

This letter and attached Product Change Notification (PCN) are to inform you of changes to a product that you have purchased within the last two years.

AOS qualified an alternative assembly and test subcontractor for DFN1.0X0.6 Package. The objective is to ensure we have adequate capacity for future demand upsides and can maintain competitive lead times and 'on time' delivery. Current packing specification will be changed to unify the packing specification of two subcontractors.

Please acknowledge receipt of this PCN within 30 days by signing in at <http://www.aosmd.com/quality/pcn> or sending the enclosed Acknowledgement Form to your local AOS Sales Representative.

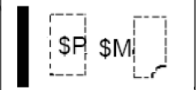
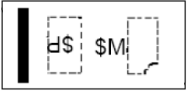
Lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change.

If you have any questions regarding this change notice, please contact your local AOS Sales Representative.  
<http://www.aosmd.com/contact>

Sincerely,

EC Wong  
Vice President of Quality  
Alpha and Omega Semiconductor

## Process Change Notification

<b>PRODUCT CATEGORY</b> MOSFET & TVS	<b>PRODUCT(S) AFFECTED</b> Please refer the affected part list at the end of this PCN. * This PCN extends to all new DFN1.0X0.6 package products that may be released after this PCN.
<b>TYPE OF CHANGE</b> Add Assembly and Test Site Packing specification	
<b>DESCRIPTION OF CHANGE</b> Add Carsem SuZhou as an additional assembly / test site for DFN1.0X0.6 Package. Current assembly / test site is NSS. The pitch of carrier tape will be changed from 4mm to 2mm. Units' quantity per reel will be changed from 3K to 10K.	
<b>REASON FOR CHANGE</b> To increase manufacturing capacity. To unify the packing specification	
<b>SAMPLE AVAILABILITY</b> Please refer the affected part list at the end of this PCN. (To obtain samples or production devices, please contact your AOS Sales Representative).	<b>FIRST SHIP DATE</b> Sep. 20 <sup>th</sup> 2013 or earlier upon customer approval.
<b>METHOD OF IDENTIFICATION</b>  For Carsem Suzhou's parts 1st marking code (product number code) are not rotated. =>   For current NSS's parts 1st marking code (product number code) are rotated 180 degree. => 	
<b>IMPACT OF CHANGE</b>  <b>Form:</b> Yes, Very slight change please refer <a href="#">Appendix I</a> <b>Fit:</b> Yes, Very slight change please refer <a href="#">Appendix I</a> <b>Function:</b> None <b>Reliability:</b> None <b>Environment:</b> None	

**QUALIFICATION / RELIABILITY DATA:****1. Reliability test result**

Reliability test result			
Test Item	Test Condition	Sample Size	
Reliability test	Solder reflow precondition(*) 168(+5/-0)hrs + 3cycle reflow	85(±3)%RH, 85(±2)°C 500cyc	77x6+ 55x3
	Temperature Cycle (**) air to air; 20mins/cyc	-65(+0/-10)°C to +150(+15/-0)°C	77x3
	Pressure Pot (**)	96hrs 121(±2)°C, P= 2 atm, RH=100%	77x3
	HAST (**)	96hrs 130(±2)°C, 85(±5)%RH, Vbr=80% Vbrmax.	55x3
	HTRB	500hrs T=150°C, Vbr=80% Vbrmax	77x3
Notes	*In compliance with JEDEC MSL Level 1 (260C) **Solder reflow precondition is required prior to the test		

**2. POD measurement and comparison (Appendix II)****3. Parametric comparison (Appendix III)****4. Packing SPEC (Appendix IV)****5. SGS report****6. Material content datasheet**

For Item5 and Item6 are available, please contact your local AOS sales if needed.

**PCN RESPONSE:**

Please acknowledge receipt of this PCN within 30 days of delivery  
Lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change.

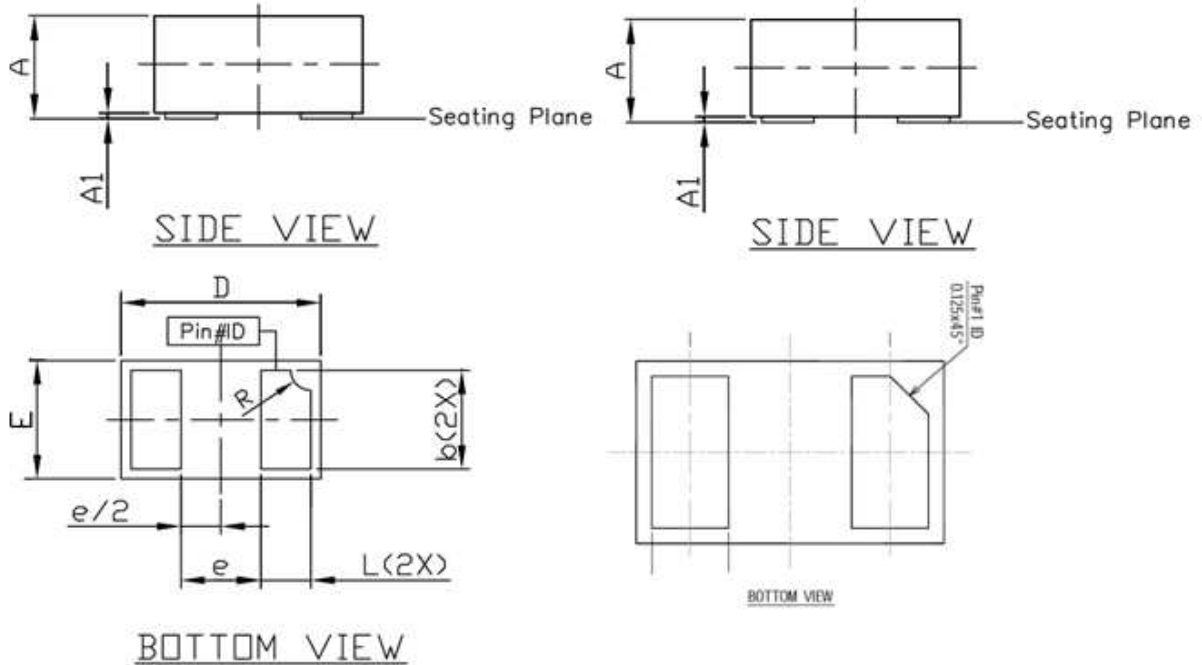
**AOS CONTACTS:**

Please contact your local AOS Sales Representative  
<http://www.aosmd.com/contact/>

QRU-00022-02(c)

Appendix I

POD comparison



symbols	Dimensions in millimeters		
	MIN	NOM	MAX
A	0.47	0.52	0.55
A1	0.00	0.03	0.05

Original outline

symbols	Dimensions in millimeters		
	MIN	NOM	MAX
A	0.47	0.51	0.55
A1	0.00	0.02	0.05

New outline

## Appendix II

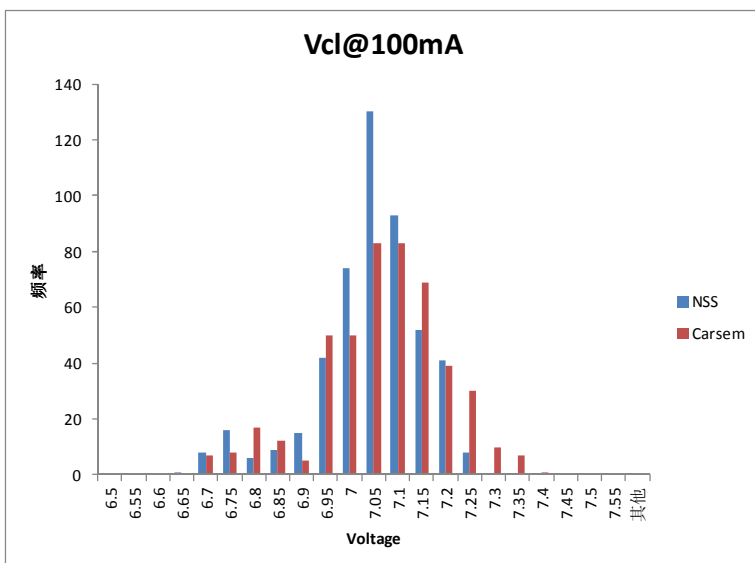
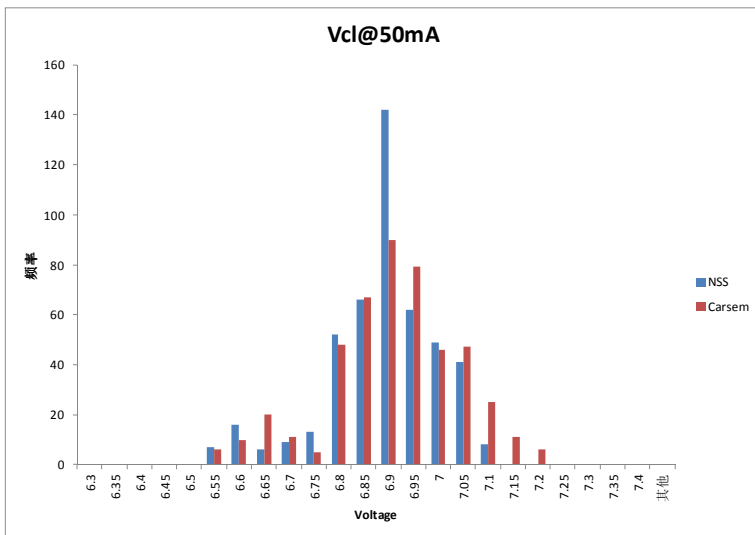
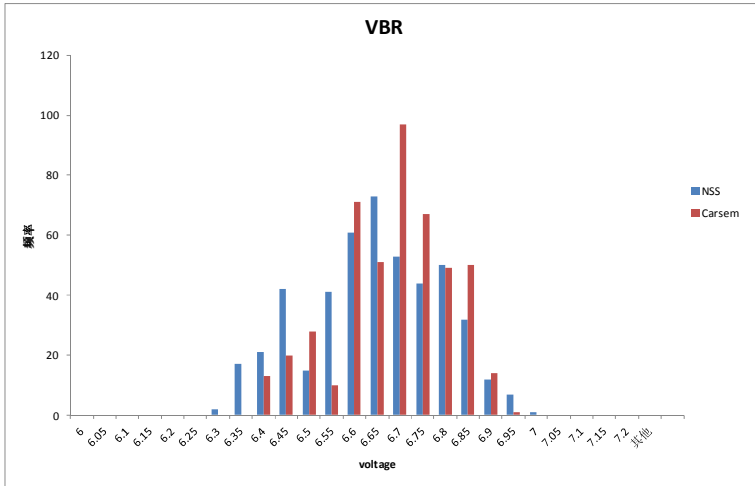
## POD measurement comparison

Sample	Original Subcontractor Package dimension/mm		
	D	E	A
1	0.62	1.029	0.534
2	0.64	1.024	0.526
3	0.645	1.019	0.534
4	0.63	1.034	0.529
5	0.643	1.019	0.508
6	0.62	1.034	0.529
7	0.627	1.029	0.529
8	0.632	1.019	0.524
9	0.632	1.034	0.524
10	0.63	1.029	0.534
11	0.62	1.019	0.534
12	0.625	1.019	0.534
13	0.627	1.019	0.524
14	0.62	1.024	0.524
15	0.62	1.024	0.518
16	0.627	1.024	0.534
17	0.62	1.019	0.529
18	0.625	1.021	0.516
19	0.625	1.029	0.524
20	0.63	1.026	0.529
21	0.625	1.019	0.529
22	0.615	1.029	0.534
23	0.615	1.024	0.534
24	0.62	1.034	0.534
25	0.625	1.029	0.518
<b>Maximum</b>	<b>0.645</b>	<b>1.034</b>	<b>0.534</b>
<b>Minimum</b>	<b>0.615</b>	<b>1.019</b>	<b>0.508</b>
<b>Spec Limit ( L )</b>	<b>0.55</b>	<b>0.95</b>	<b>0.47</b>
<b>Spec Limit ( U )</b>	<b>0.675</b>	<b>1.075</b>	<b>0.55</b>
<b>Mean</b>	<b>0.625</b>	<b>1.024</b>	<b>0.529</b>
<b>Std. Dev.</b>	<b>0.0078</b>	<b>0.0055</b>	<b>0.0069</b>
<b>Cpk</b>	<b>2.13</b>	<b>3.08</b>	<b>1.01</b>

Sample	New Subcontractor Package dimension/mm		
	D	E	A
1	0.606	1.002	0.524
2	0.603	1.004	0.518
3	0.596	0.998	0.521
4	0.598	1.003	0.517
5	0.595	0.996	0.522
6	0.599	0.993	0.525
7	0.604	0.999	0.52
8	0.607	1.004	0.523
9	0.595	0.995	0.521
10	0.599	0.993	0.522
11	0.595	0.998	0.52
12	0.603	1.003	0.523
13	0.593	0.996	0.518
14	0.602	0.998	0.52
15	0.605	0.993	0.524
16	0.595	0.992	0.521
17	0.596	1.005	0.518
18	0.598	0.993	0.522
19	0.603	0.997	0.52
20	0.596	1.001	0.525
21	0.603	0.992	0.518
22	0.601	0.995	0.517
23	0.604	1.004	0.522
24	0.597	0.994	0.523
25	0.599	0.998	0.518
<b>Maximum</b>	<b>0.607</b>	<b>1.005</b>	<b>0.525</b>
<b>Minimum</b>	<b>0.593</b>	<b>0.992</b>	<b>0.517</b>
<b>Spec Limit ( L )</b>	<b>0.55</b>	<b>0.95</b>	<b>0.47</b>
<b>Spec Limit ( U )</b>	<b>0.675</b>	<b>1.075</b>	<b>0.55</b>
<b>Mean</b>	<b>0.599</b>	<b>0.998</b>	<b>0.521</b>
<b>Std. Dev.</b>	<b>0.0041</b>	<b>0.0043</b>	<b>0.0025</b>
<b>Cpk</b>	<b>4.01</b>	<b>3.71</b>	<b>3.91</b>

Appendix III

Parametric comparison

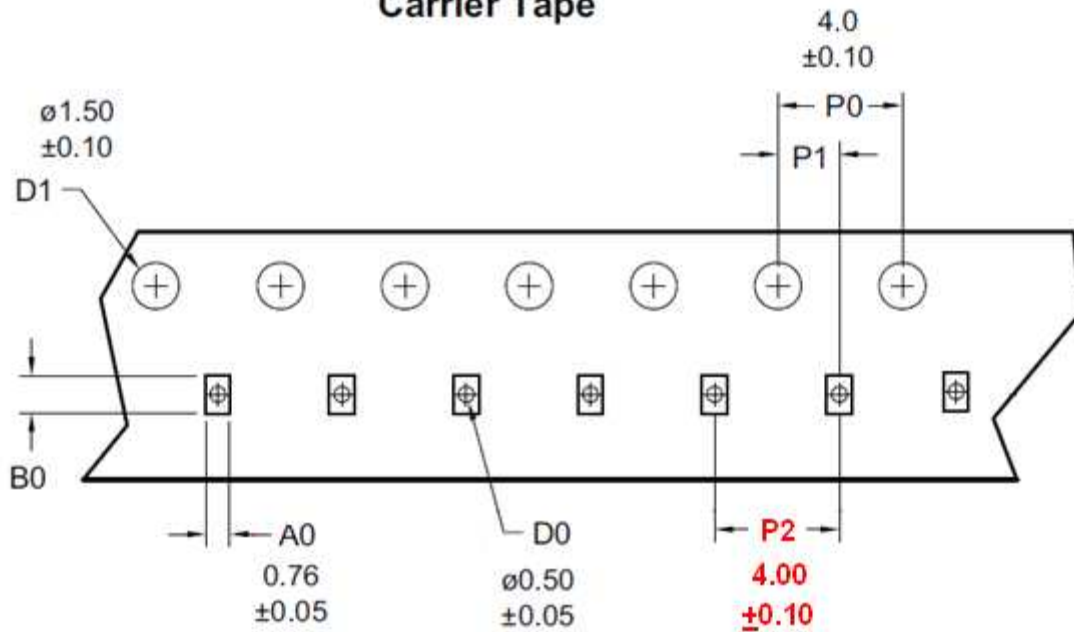


Appendix IV

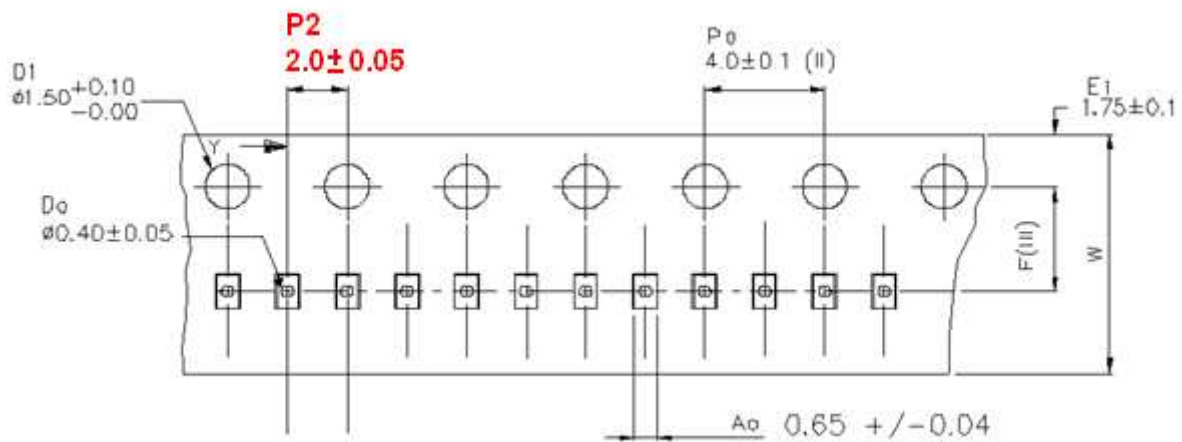
Packing SPEC

Symbol	Current	New
P2	4mm	2mm

Carrier Tape



Current Carrier Tape dimension



New Carrier Tape dimension



## Acknowledgement of Process Change Notification

(Filled by the customer)

### Confirming the Receipt of the PCN

PCN #:

Receiving date (YY/MM/DD):

Receiver:

Department / Title of the receiver:

Signature / Stamp:

### Customer Request

Sample request                      Quantity:

Requirement of qualification data:

### Approval of the Change

Approve                                       Disapprove

Reason of disapproval:

Approver:

Department / Title of the approver:

Signature / stamp:

QRU-00022-02(c)

**Appendix: Affected Product List**

<b>Part number</b>	<b>Estimated sample available date</b>	<b>Estimated completion date of qualification</b>	<b>Remark</b>
AOZ8131DI-05L	2013/8/31	Completed	
AOZ8211DI-03	2013/8/31	Completed	
AOZ8211DI-05	2013/8/31	Completed	
AOZ8211DI-12	2013/8/31	Completed	
AOZ8211DI-24	Available	Completed	
AOZ8211DI-24_2	Available	Completed	
AOZ8222DI-05	2013/11/1	2013/11/1	
AOZ8231ADI-02	2013/8/31	Completed	
AOZ8231ADI-03	2013/8/31	Completed	
AOZ8231ADI-05	Available	Completed	
AOZ8231ADI-12	2013/8/9	Completed	
AOZ8231ADI-24	2013/8/9	Completed	
AOZ8822DI-05	2013/12/30	2013/12/30	
AOZ8831DI-05	2013/8/31	Completed	