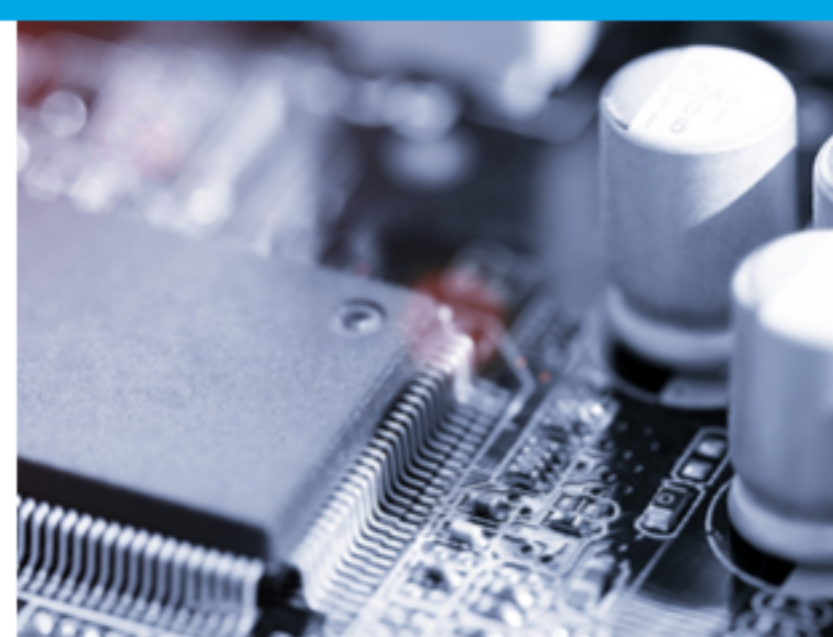




Final Product Change Notification

PCN number 2021100001

Issue Date:2021-10-18
Effective Date:2022-02-01



Dear *Customer*,
Here's your quality information concerning products our customers and partners purchased from WeEn.

Management Summary

This notification is to release one alternative assembly factory for three parts in TO220F-2L.

Release an alternative assembly source for TO220F-2L parts

Information Notification

Release one alternative assembly source for three parts in TO220F-2L. For the details, please refer to the attached qualification report.

Why do we issue this Information Notification

It is to make sure the supply of products, and comply with business contingency management.

Identification of Affected Products

Please refer to the product list attached.

Impact

Data Sheet Revision

To be updated accordingly

Disposition of Old Products

Add one alternative assembly factory. The product performance is kept no change.

Production

Both assembly factories will exist together.

Additional information

Affected products and sales history information: see attached file of Product List.
See attached file of Self-qualification Report.

Remarks

Should you not be able to obtain these documents, please contact your WeEn sales representative or the e-mail address mentioned below under Contact and Support.

Contact and Support

For all Quality Notification content inquiries, please contact your local WeEn Sales Support team.

For specific questions on this notice or the products affected please contact our specialist directly.

Name:Shawn Lin
Position:Quality Manager
e-mail address:Shawn.xf.lin@ween-semi.com

At WeEn Semiconductors we are constantly striving to improve our product and processes to ensure they reach the highest possible Quality Standards.

You have received this email because you are a designated contact or subscribed to WeEn Quality Notifications. WeEn shall not be held liable if this Notification is not correctly distributed within your organization.

This message has been automatically distributed. Please do not reply.

WeEn Semiconductors
www.ween-semi.com

WeEn Semiconductors	Qualification Report: Alternative Assembly Source of Package SOD 113A in Huashan	Document No.: PCN 2021100001
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WeEn

WeEn Semiconductors

Qualification Report

Release alternative Assembly Source of SOD113A (TO220F-2L)

Products at Huashan

Date: 20211012	Author: Kenneth Pang	Page: 1 / 8	Revision: 01
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WeEn Semiconductors	Qualification Report: Alternative Assembly Source of Package SOD 113A in Huashan	Document No.: PCN 2021100001
----------------------------	---	---

Table of Contents

- 1. Introduction.....3
- 2. Affected types.....3
- 3. Target Specification3
- 4. Purposed Technology or Material.....3
- 5. Current Technology, Platform or Material Used.....3
- 6. Test Vehicles.....3
 - 6.1 Qualification vehicle for3
- 7. Mechanical Yield.....3
- 8. Electrical Yield.....4
 - 8.1 Final test Yield4
- 9. Process Capability.....4
 - 9.1 Wire Bonding Result.....4
 - 9.2 Plating Cpk measurement.....4
- 10. Reliability Test Result.....4-5
- 11. Package Analysis5
 - 11.1 Physical Dimension.....5
 - 11.2 Appearance.....6
- 12. Identification of Product Change.....6
 - 12.1 Marking.....6
 - 12.2 Packing Method.....7
 - 12.3 Box Label.....8
- 13. Conclusions.....8

WeEn Semiconductors	Qualification Report: Alternative Assembly Source of Package SOD 113A in Huashan	Document No.: PCN 2021100001
----------------------------	--	---

1. Introduction

Huashan is a qualified assembly & testing factory for TO220F-2L (SOD113A) for more than 10 years with IATF 16949 certified. The purpose of this qualification is to release Huashan as the alternative assembly & test source to support on the demand.

2. Affected types

The products in TO220F-2L (SOD113A), please refer to the product list.

3. Target Specification

This is to qualify more TO220F-2L products at Huashan.

4. Purposed Technology or Material

Using Huashan's standard process and WeEn approved BOM.

5. Current Technology, Platform or Material Used

BOM material Comparison

Material	E-Tech	Huashan
Wafer	WeEn's wafer	WeEn's wafer
Leadframe	TO 220F-2L, Bare Copper	TO220F-2L, Bare Copper
Die Attach	Soft Solder wire PbSn5Ag2.5	Soft Solder wire Pb88Sn10Ag2
Wire	Al wire	Al wire
EMC	Eternal EK3600GT	Eternal EK3600GT

6. Test Vehicles

6.1 Qualification vehicle

Lot Number	Device
N3L677401	WND10P08X
W5688J071	BYC30X-600PS
W5595J072	BYV29X-600P

7. Mechanical Yield:

7.1. Sawing Process:

- Chipping inspection: Acceptable

WeEn Semiconductors	Qualification Report: Alternative Assembly Source of Package SOD 113A in Huashan	Document No.: PCN 2021100001
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8 Electrical Yield **Result:** Acceptable

8.1 Final test Yield

Lot No.	N3L677401	W5688J071	W5592J072
Device	WND10P08X	BYC30X-600PS	BYV29X-600P
Test yield	99.61%	99.75%	98.69%

9 Process Capability

9.1 Wire Bonding Result:

- Bonding Visual Inspection: Acceptable
- Wire Pull Test: Acceptable

9.1.1 Wire bonding performance

- Wire pull test

Lot No	N3L677401	W5688J071	W5595J072
Device	WND10P08X	BYC30X-600PS	BYV29X-600P
wire	20 mils / Al	20 mils / Al	20 mils / Al
CPK	4.537	7.979	3.311

9.2 Plating Tin Thickness: Result: Acceptable

Lot No	N3L677401	W5688J071	W5595J072
Device	WND10P08X	BYC30X-600PS	BYV29X-600P
Spec	7.6 - 25.4 um		
CPK	1.502	1.478	1.519

10 REL Test Summary: Result: Acceptable

10.1 Reliability result

Test Items	Test Condition	Device	Sample Size	Result
Temperature Cycle (TMCL)	500 cycles at -65°C to 150°C.	WN10P08X	2 lots x 80pcs	passed
Unbiased Highly Accelerated Stress Test (UHST)	96 hours at Ta = 130°C, RH = 85%	WN10P08X	2 lots x 80pcs	passed
High Temperature, Humidity & Reverse Bias (THBS)	1000 hours at T = 85°C, RH = 85%, Reverse Bias	WN10P08X	2 lots x 80pcs	passed

WeEn Semiconductors	Qualification Report: Alternative Assembly Source of Package SOD 113A in Huashan	Document No.: PCN 2021100001
----------------------------	--	---

Thermal Fatigue (TFAT)	10000 cycles, DTj ≥ 80°C,	WN10P08X	2 lots x 80pcs	passed
Static High Temperature Life (SHTL)	1000 hours; T=150 °C, Reverse Bias	WN10P08X	2 lots x 80pcs	passed
High Temperature Storage (HTSL)	1000 hours at Ta = 150°C	WN10P08X	2 lots x 80pcs	passed

11.1 Physical Dimension: No difference for major POD dimension.

	ETECH TO220FE-2L			HS SOD113A			Remark
	Min	Max	Actual(AVG)	Min	Max	Actual(AVG)	
Package thickness (A)	4.2	4.6	4.4	4	4.6	4.44	No change
Package thickness (A1)	2.5	2.9	2.7	2.5	3.1	2.83	In spec
Lead width (b)	0.7	0.9	0.78	0.7	0.9	0.77	No change
Lead width (b1)	0.9	1.3	1.07	0.9	1.1	1.01	No change
Lead thickness (c)	0.4	0.6	0.5	0.4	0.7	0.52	No change
Package length (D)	15.4	15.8	15.63	15.2	15.8	15.65	No change
Package length (D1)	6	6.4	6.22	6.3	6.5	6.37	In spec
Package width (E)	9.7	10.3	10.06	9.7	10.3	10.11	No change
Lead pitch (e)	5.08typ		5.07	5.08typ		5.08	No change
Lead length (L)	13.5	14.4	13.9	13.5	14.4	13.61	In spec
Lead length (L1)	2.8	3.3	3.12	2.8	3.3	3.04	In spec
Hole diameter (P)	3	3.3	3.14	3	3.2	3.16	No change
Isolation distance (Q)	2.3	2.6	2.44	2.3	2.8	2.58	In spec
Hole center (q)	2.6	3	2.87	2.6typ		2.6	Minor change



Unit: mm

Remark: There is a minor difference for the hole center (q). HS product is typical 2.6mm.

WeEn Semiconductors	Qualification Report: Alternative Assembly Source of Package SOD 113A in Huashan	Document No.: PCN 2021100001
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11.2 Appearance



Result: No change.

E-Tech	Huashan
<p style="text-align: center;">Front View</p> 	<p style="text-align: center;">Front View</p> 

12 Identification of Product Change


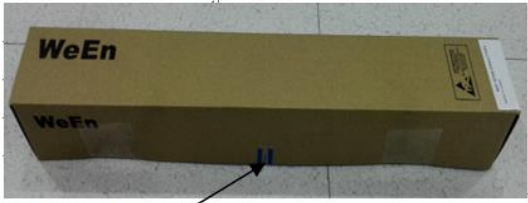


12.1 Marking

The code of ETECH is E, the code of Huashan is A.

E-Tech	Huashan
	
Line 1 = WeEn logo Line 2 = Device name (8 max) Line 3 = Voltage (8 max) Line 4 = Location and week code Line 5 = Assembly Lot number	Line 1 = Device type (8 max) Line 2 = voltage (8 max) Line 3 = location and week code Line 4 = wafer batch lot number Line 5 = WeEn logo

12.2 Packing Method

- 50pcs/tube, 1000pcs (20tubes)/packing box.

E-Tech Packing	Huashan Packing
<p>50ea / Tube 1,000ea / box</p>   <p>WeEn QA 封条</p>	<p>50ea / Tube 1,000ea / box</p>  







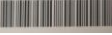

Comparison of tube dimension,

Unit mm	E-Tech	Huashan
Length	530±1.00	520±1.00
Width	32.85±0.1	33.0±0.2
Tube inner dimension	7.0±0.4	5.6±0.4
Tube thickness	0.7±0.0.7	0.75±0.125

WeEn Semiconductors	Qualification Report: Alternative Assembly Source of Package SOD 113A in Huashan	Document No.: PCN 2021100001
----------------------------	---	---

12.3 Box Label

Same printed label format.

Tak Cheong Labeling	Huashan
<p>1. Normal Lot</p> <p>WeEn SEMICONDUCTORS MADE IN CHINA</p> <p>(33T)PUID 03EC20-27718</p> <p>(32T)ORIG N260 (31T)PMC JEH</p> <p>(1T)LOT C20-27718 (9D)DATE 2053</p>  <p>(Q)QTY 1000</p>  <p>(30P)TYPE BYV29X-600P (3P)PART BYV29X-600PQ (1P)CODENO 9340 720 14127</p>   <p>HALOGEN FREE</p> <p>EU RoHS COMPLIANT</p>	<p>Normal Lot</p> <p>WeEn SEMICONDUCTORS MADE IN CHINA</p> <p>(33T)PUID 06AJ3L505812</p> <p>(32T)ORIG N260 (31T)PMC JAH</p> <p>(1T)LOT J3L505812 (9D)DATE 2129</p>  <p>(Q)QTY 1000</p>  <p>(30P)TYPE BYC20DX-600P (3P)PART BYC20DX-600PQ (1P)CODENO 9340 680 88127</p>   <p>HALOGEN FREE</p> <p>EU RoHS COMPLIANT</p>

13. Conclusions

Based on the above qualification data, the performances of TO220F-2L in Huashan in electrical, dimension, and reliability keep comparative with TO220F-2L in E-Tech.

Orderable Part Numebr	12NC	Type	Package	WeEn Package
BYV10MX-600PQ	9340 712 66127	BYV10MX-600P	SOD113A	TO220F-2L
BYV29X-600PQ	9340 720 14127	BYV29X-600P	SOD113A	TO220F-2L
BYC30X-600PSQ	9340 727 87127	BYC30X-600PS	SOD113A	TO220F-2L