pSemi
A Murata Company

pSemi Corporation
9369 Carroll Park Drive, San Diego, CA. 92121

Product/Process Change (PCN) Notification

PCN Number: CO-23091 Date Issued: May 21, 2019 PCN Effective Date: August 21, 2019 Product(s) Affected: PE42522 Sample Availability: July 21, 2019 Change Control Board Approval #: CO-23091	Contact: Elizabeth La Greca Title: Director, Sales Operations Phone: 1-858-795-0106 Email: pcn@psemi.com

Change Category:

☒ Wafer Fabrication Process	☐ Shipping/Labeling
☐ Design/Mask Change	☐ Equipment
☐ Singulation Process	☐ Material
☒ Assembly Process - New package laminate	☒ Product Specification
☐ Electrical Test	☐ Product End of Life
☒ Manufacturing Site	☒ Other - Ordering codes change

Purpose of Change:

To enable usage of Lapis in Japan as the wafer fabrication site, SEMCO in Korea for PCB substrate supplier and Unisem in Malaysia as the primary assembly/test site for the PE42522.

Description of Change:

This is a notification to advise our customers that pSemi is transferring PE42522 for the following reasons.

1) Wafer fab transfer to Lapis as MagnaChip closed their 150mm wafer CMOS fab in South Korea at the end of 2015. To ensure continuity of supply, pSemi has been working to transfer products from MagnaChip fab to Lapis fab in Japan. Lapis is a qualified pSemi fab.
2) Assembly/test transfer to Unisem as Amkor has discontinued their assembly tooling for this product. Unisem in Malaysia is pSemi's qualified assembly/test house for FCLGA package.
3) Laminate supplier is discontinuing current production process (electroless NiAu - ENIG) laminate plating finish and transitioning to an industry standard (electroless NiPdAu - ENEPIG). pSemi is making this transition to assure ongoing laminate supply with improved solderability and reliability.
4) ESD Rating: 3500V to 3000V HBM on all pins.
5) Insertion Loss @ 18.0 GHz~20 GHz Max limit from 4.40 to 4.50 dB
   @ 20 GHz~24 GHz Max limit from 5.45 to 5.80 dB

Starting August 21, 2019, the PE42522 shipped to customers will be supplied from either MagnaChip or Lapis wafers. Lapis will be the wafer fabrication site and Unisem will be the Assembly/Test site for the PE42522 using ENEPIG substrate.

PE42522 material has been qualified with no change to fit or reliability.

Ordering code changes:

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Original ordering codes (MagnaChip): PE42522A-X; EK42522-02
New ordering codes (Lapis+Unisem with new PCB substrate): PE42522B-X; EK42522-03

pSemi manages inventory on a First-In First-Out (FIFO) basis. For the exact timing of the order code change, please contact your account rep. or accountrep@psemi.com.

Customer Acknowledgement of Receipt:

☐ Change Denied *(Include explanation in comments section below)* ☐ Change Approved	**Name:**	
	Title:	
	Company:	
	Date:	
	Signature:	
Customer Comments:		

Appendix A – Reliability Qualification Summary

PE42522

Reliability Summary Report

Part Number(s):	PE42522	Product Family:	RF Switch
Package Type:	29L 4x4 FCLGA	MSL Rating:	MSL 3
Technology Platform:	ULTRACMOS®5		
Reliability Summary:	Based on the results of reliability testing, the PE42522 has met the reliability requirements for Production.		

Table 1: Product Design Reliability Results

Test #	Test Performed	TEST METHOD/ Conditions	Duration	Sample Size	Result
1	High Temperature Operating Life (HTOL)	JESD22-A108; VDD= 5.5V; VCTL= 3.6 V; $T_A = T_J = 125$ ºC;	1000 Hrs.	1 lot x 77	Pass
2	ESD Human Body Model (HBM)	MIL-STD-883 3015.7 (All pins)	3kV	1 lot x 3	Pass
3	ESD Machine Model (MM)	JEDEC JESD22-A115	150V	1 lot x 3	Pass
4	ESD Charged Device Model (CDM)	JEDEC JESD22-C101	500V	1 lot x 3	Pass

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Table 2: Package Reliability Results

Test	Test Performed	TEST METHOD/ Conditions	Duration	Sample Size	Result
5	High Temperature Storage Life (HTSL)	JESD22-A103; T_a= 150ºC	1,000 hrs.	3 lots x 45	Pass
6	Moisture Sensitivity Level (MSL3)	JESD22-A113/J-STD-020 Moisture Soak at 30°C/ 60% RH. Reflow at 260°C.	192 hrs. 3x Reflow	3 x 15	Pass
7	Highly Accelerated Stress Test (HAST)	JESD22-A110; T_A= 110ºC; RH= 85%; VDD= 3.55 V	264 hrs.	3 x 45	Pass
8	Temperature Cycling (TC)	JESD22-A104; T_A= -55ºC to +125ºC	1,000 cycs.	3 x 45	Pass
9	Physical Dimensions	JESD22-B100 / Subcon specs.	-	3 lots x 10 Devices	Pass
10	Die Shear	Mil-Std-883 M2019.8 / Subcon specs.	-	3 lots x 5 Devices	Pass
11	Solderability	JESD22-B102 / Subcon specs.	-	3 lots x 5 Devices	Pass

Technology Reliability Report (DOC-81028)