PRODUCT CHANGE NOTICE

Product Improvement – Design and Wafer Fabrication Process Change for Intersil ISL1536IRZ* Products

Refer to:
PCN13011

Date: February 15, 2013

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To: Our Valued Intersil Customer

Subject: **Product Improvement – Design and Wafer Fabrication Process Change for Intersil ISL1536IRZ* Products**

This notice is to inform you of a pending change to enhance the design and wafer fabrication process used for the listed ISL1536IRZ* products. The changes are as follows:

- Minor mask modifications were made to the ESD (Electrostatic Discharge) protection circuitry to flip the polarity of the capacitor so that the bottom plate is connected to the supply rail. The resulting ESD circuitry configuration is of a proven design incorporated in other Intersil products and is intended to improve EOS (Electrical Overstress) performance critical to the intended DSL line driver applications.
- Trench Isolation change - Current tool changed, poly fill sequence modified, and the trench poly etch and re-deposition eliminated. See last page for flow details. These process changes significantly decrease the occurrence of trench defect related leakage.
- New starting material (device wafer) and modified NBL (N Buried Layer) process flow.
- Product data sheet updated to reflect new ESD (Electrostatic Discharge) test results for HBM (Human Body Model), CDM (Charged Device Model), and MM (Machine Model). The results show slight improvement in HBM (Human Body Model) and CDM (Charge Device Model) with a slight drop in MM (Machine model) performance. All three meet or exceed acceptable limits. The updated data sheet showing only these changes to ESD limits is available on the Intersil web site at http://www.intersil.com/content/dam/Intersil/documents/fn65/fn6508.pdf.

ESD Circuitry - Test Summary		
Test	**Old**	**New**
HBM	3000V	4000V
CDM	1500	2000V
MM	300V	250V

Product incorporating the improved masks and wafer fabrication process are completely compatible in any existing designs using the previous version of the product. As of the date of this notice, all product qualification activities are complete.

Products affected: **ISL1536IRZ ISL1536IRZ-T13**

The product qualification plan for a wafer fabrication process and mask change is designed using JEDEC and other applicable industry standards to confirm form, fit, function, and interchangeability of product. The qualification summary is included below and consisted of high temperature operating life (HTOL), temperature cycle, characterization of electrical performance, and electrostatic discharge (ESD) testing for HBM/MM/CDM. The remainder of the manufacturing operations (wafer acceptance test, assembly, package level electrical testing, shipment, etc.) will continue to be processed to previously established conditions and systems.

Stress / Conditions	Duration	# of Lots	Sample Size / Rejects	Results
High Temperature Operating Life (HTOL) @ TA = +125C	1000 Hours	2	N =156, Acc = 0	Passed
	1000 Hours	1	N =78, Acc = 0	Passed
Temperature Cycle +125C / -40C	1000 Cycles	3	N =236, Acc = 0	Passed
Electostatic Discharge (ESD)	HBM	1	N =3, Acc = 0	Passed - 4000V
	MM	1	N =3, Acc = 0	Passed - 250V
	CDM	1	N =3, Acc = 0	Passed - 2000V

There will be no change in the external marking of the packaged parts or to the product data sheet electrical specification. Product affected by this change is identifiable via Intersil's internal traceability system.

Intersil will take all necessary actions to conform to agreed upon customer requirements and to ensure the continued high quality and reliability of Intersil products being supplied. Customers may expect to receive product fabricated using the improved design and wafer fabrication process beginning ninety days from the date of this notice or upon depletion of existing material.

If you have concerns with this notice, Intersil must hear from you promptly. Please contact the nearest Intersil Sales Office or call the Intersil Corporate line at 1-888-468-3774, in the United States, or 1-321-724-7143 outside of the United States.

Regards,

Jon Brewster

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PCN13011 - Process Flow – Trench Isolation

FLOW 097F		FLOW 097K	
oper	desc	oper	desc
123	P+BL COAT	123	P+BL COAT
200	P- COAT	200	P- COAT
740	PSINK COAT	740	PSINK COAT
753	OX ETCH	753	OX ETCH
755	B-CLEAN	755	B-CLEAN
840	TREN COAT	839	TREN COAT
841	TREN ALIGN	841	TREN ALIGN
842	TREN DEV	842	TREN DEV
843	TREN PRE	843	TREN PRE
845	TREN HBAKE	845	TREN HBAKE
847	TREN DETCH	847	TREN DETCH
		941	AURA STRIP
849	ACID STRIP	849	ACID STRIP
850	B-CLEAN	850	B-CLEAN
852	TRENLIN OX	852	TRENLIN OX
853	TREN CVD	853	TREN CVD
846	NO HF CLN	846	NO HF CLN
854	TREN ANNEL	854	TREN ANNEL
858	OX ETCH BK	858	OX ETCH BK
859	NO HF CLN	859	NO HF CLN
860	FAB59 POLY	834	POLY DEP
		835	POLY2 DEP
		861	FAB59 POLY
864	FAB54 PLSH	869	FAB54 PLSH
863	F54 PLZCLN	863	F54 PLZCLN
866	TR ET BACK		SKIP
870	NO HF CLN		SKIP
871	POLY REFIL		SKIP
878	F54 PLSH 2		SKIP
879	F54 PLZCLN		SKIP
880	B-CLEAN		SKIP
882	TREN IMPL	882	TREN IMPL
900	B-CLEAN	900	B-CLEAN
902	POLY OXIDE	902	POLY OXIDE
3085	NBASE COAT	3085	NBASE COAT

Coat updated to new resist

Strip sequence changed to dry/wet

Single 63.5K Deposition changed 3 separate step to eliminate front side handling and constrain poly voids to interior of the poly deposition
Poly Polish operation changed due to new handling

Second deposition and polish no longer needed

- Current process is Flow 097F and the new process is Flow 097K