PXD Production

Rainer Richter
on behalf of the MPG Semiconductor Lab.

Status

Yield

Design change log

PXD Production Status

- PXD9-7 (4 wafer) finished
- PXD9-8 (9 wafer) finished
- PXD9-9 (6 wafer) 5 finished, 1 wafer waits for final passivation
- PXD9-10 (6 wafer) 3 wafer finished
  3 wafer at ATG probing

Rather good yield

		G99	G98	M99	M98	Total
	IB	13	3	3	1	20
	IF	18	2	1	0	21
	OB	21	3	4	0	28
	OF	30	4	3	0	37

Categories

AllClear_vs_Source	M	I > 3µA@14V
	B	I > 10µA@5V or hard breakdowns

Pixel Yield	G99	IV good and pixel yield >= 99%
	G98	IV good and pixel yield >= 98%
	M99	IV medium and pixel yield >= 99%
	M98	IV medium and pixel yield >= 98%

Measurement results are included in the VXD data base

- in addition: quick overview by excel sheets

pretest_results.ods - LibreOffice Calc

	A	B	C	D	E	F	G	H	I	J	K
1											
2				after metal 1		after metal 2					
3			VisIn	Bu_vs_G	BS_PT	AllCvsS*	def Rows	def_Col	IVRating	Pixel y	Status
4	W31	IB		G	M	G	0	1	G	99,9	
5		IF		G	G	G	2	0	G	99,0	
6		OB1		G	G	G	1	1	G	99,4	
7		OB2		G	G	G	1	0	G	99,5	
8		OF1		G	G	G	3	0	G	98,4	
9		OF2		G	G	G	2	0	G	99,0	
10				Plot	Plot	Plot					
11	W37	IB		G	M	G	3	0	G	98,4	
12		IF		G	G	G	3	0	G	98,4	
13		OB1		G	G	G	3	0	G	98,4	
14		OB2		G	G	G	1	0	G	99,5	
15		OF1		G	G	G	3	3	G	98,1	
16		OF2		G	G	B	3	0	B	98,4	
17				Plot	Plot	Plot					
18	W38	IB		G	G	G	3	0	G	98,4	

PXD9-6 | PXD9-7 | PXD9-8 | PXD9-9 | PXD9-10 | Yield

Blatt 2 von 6 Standard Summe=0 150 %

wafer – batch assignment

PXD9-6 :	#30,35,36	(pilot)
PXD9-7 :	#31,37,38,40	
PXD9-8 :	#32,33,41,42,43,44,45,46	
PXD9-9 :	#1,2,3,4,5,6	
PXD9-10 :	#8,9,10,11,12,13	

Module Design Change Logs

from PXD9-6 (pilot) to PXD9-7

cross talk

data out DCD to DHP increased spacing from 4um to 21um crosstalk

transmission line

data out DHP from metal1 lines with closely spaced metal2 reference plane on top to metal2 lines to wider spaced copper reference plane

DHP – Switcher control

for inner backward and outer forward modules

we provided lower ohmic connection lines between first DHP and switcher

Switcher Vsub connection

lower ohmic by copper line bypass (but with an odd routing)

from PXD9-7 to pxd9-8

Switcher Vsub connection , introduction of metal 1, metal 2 double bridge

no further module changes on PXD9-9 and PXD9-10 wafers

Summary

Sensor production is almost completed ☺

We have enough good sensors.

Keep in mind to choose OF and IF modules for test purposes