

## > XHB06 Photo Diode Evaluation Chips

X-FAB offers two evaluation chips for investigating of photo diodes in their XHB06 technology. They contain 6 different photo diodes.

Every diode is drawn in three different sizes 100µm x 100µm, 250µm x 250µm and 500µm x 500µm. All diodes are realized as photo diodes by etching down the isolator stack on top of the diode and depositing an anti-reflective coating (ARC) layer. The ARC layer is optimized for a wavelength of 430nm.

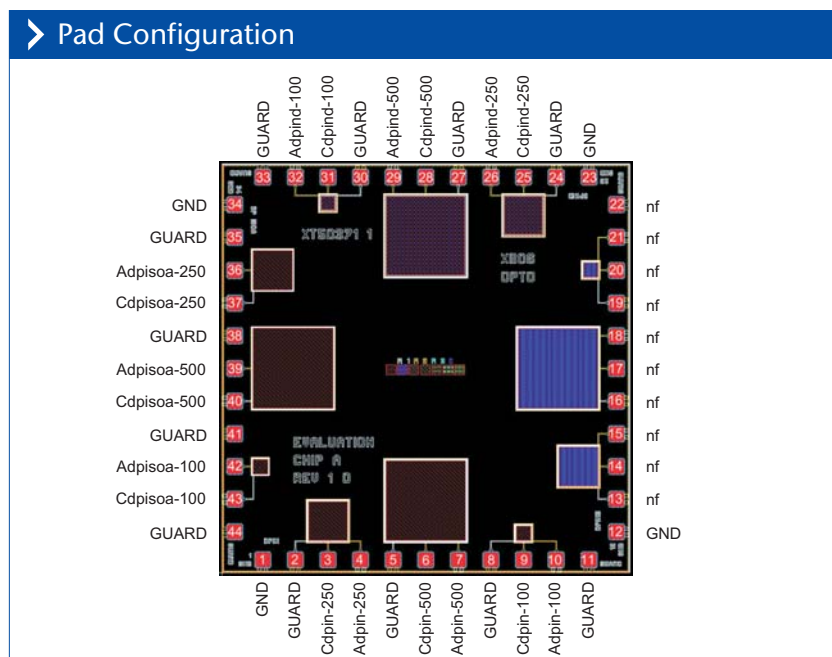
X-FAB will deliver these products in die form for demonstrating the opto-electrical performance of its XHB06 process and as reference for measurements by customers.

X-FAB does not intend to market XHB06 evaluation chips as standard products.

### > Features

Technology: XHB06	
Chip Size: 2500µm x 2500µm x 250µm	
ARC layer optimized for 430nm	
Photo Diodes:	
XHB06.O.EC.A	
<b>dpin</b>	n-epitaxial/p-substrate PIN diode
<b>dpind</b>	n-buried/p-substrate diode
<b>dpisoa</b>	p-diffusion/n-epitaxial (n-buried) diode
XHB06.O.EC.B	
<b>dpinc2</b>	n-epitaxial/p-substrate diode
<b>dpine2</b>	n-buried layer/p-substrate diode
<b>dpinf2</b>	n-buried layer/p-substrate diode

### > Pad Configuration



### > Dimensions

Chip Size  
2500µm x 2500µm

Die thickness  
250µm

Pad size  
80µm x 80µm

Pad pitch  
200µm

### > Ordering

Please contact your local sales manager at

<http://www.xfab.com/en/about-x-fab/contact-overview/sales-worldwide/>

for more detailed information or to order the XHB06.O.EC

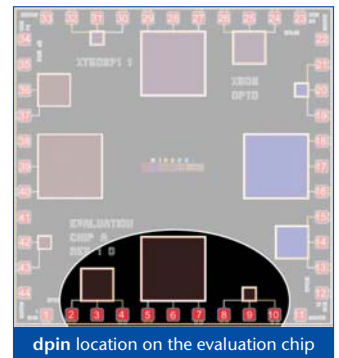
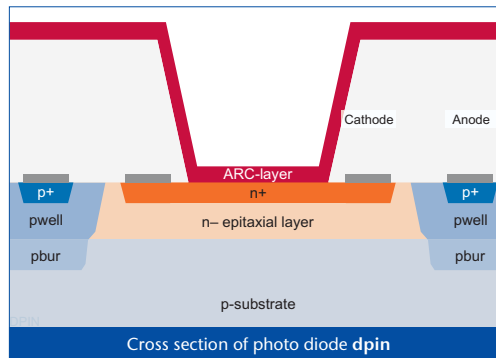
# XHB06.O.EC.A

## > XHB06 Photo Diode Evaluation Chip

### **dpin** [n-epitaxial/p-substrate diode]

The dpin PIN diode is created between the n-epitaxial and p-substrate layer.

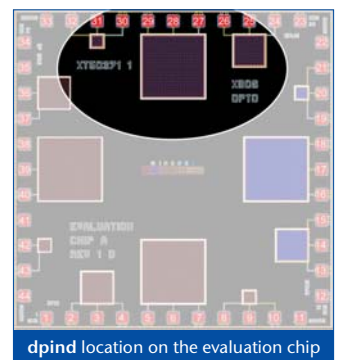
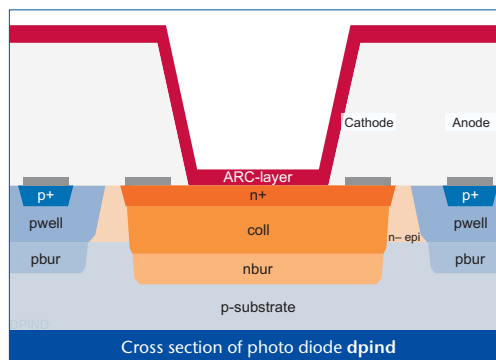
dpin needs the OPTO and NOPBUR modules of XHB06 in addition to the CORE module.



### **dpind** [n-buried/p-substrate diode]

The dpind diode is based on the n-buried and the p-substrate layer.

It is mainly sensitive to the IR light.

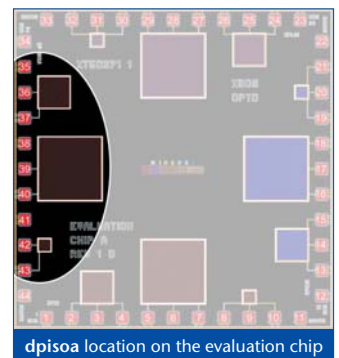
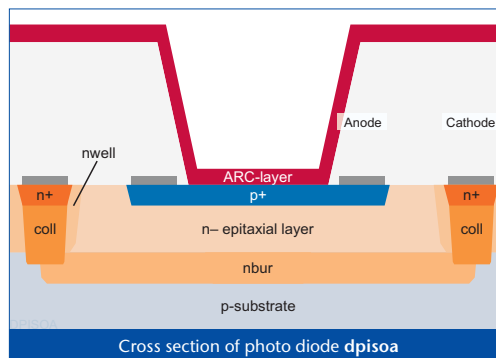


### **dpisoa** [p-diff / n-epi (nbur) diode]

The dpisoa is an isolated diode built by the p-diffusion and the n-buried layer.

As the pn junction is close to the surface the diode is mainly sensitive to green light (450nm ... 550nm). IR-light is suppressed.

It is possible to use this diode in avalanche workmode.



# XHB06.O.EC.B

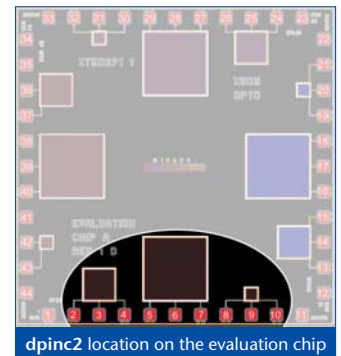
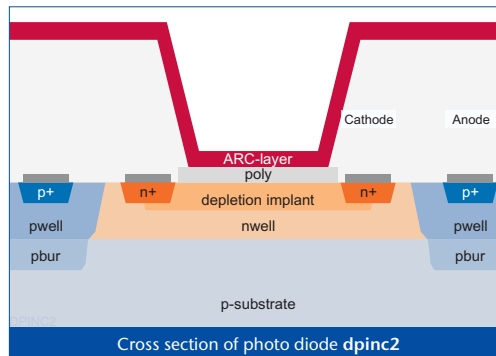
## > XHB06 Photo Diode Evaluation Chip

### dpinc2 [n-epitaxial/p-substrate diode]

The dpinc2 diode is created between the n-epitaxial layer and the p-substrate.

The dpinc2 suppresses UV light and has a maximum sensitivity between 550nm and 900nm.

dpinc2 needs the modules NOPBUR, OPTO and DEPL.



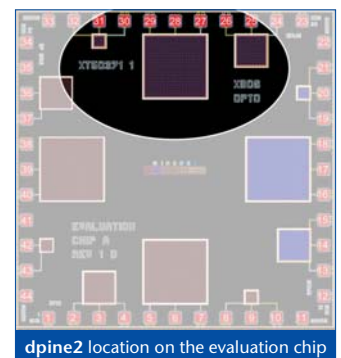
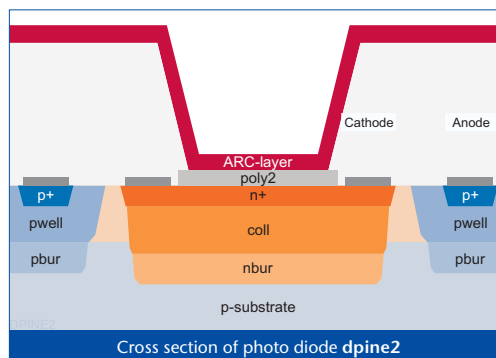
### dpine2

#### [n-buried layer/p-substrate diode]

The dpine2 is a diode between the n-buried layer and the p-substrate.

The photo diode dpine2 suppresses partly UV and blue light (200nm ... 450nm).

The photo diode dpine2 uses the OPTO module in addition to the CORE module.



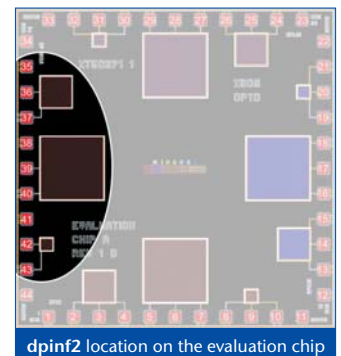
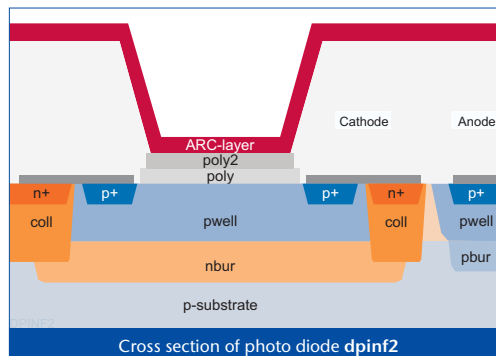
### dpinf2

#### [n-buried layer/p-substrate diode]

The dpinf2 is a diode between the n-buried layer and the p-substrate by using the double POLY layer and the shorted isolated PWELL.

The photo diode dpinf2 suppresses partly UV, blue and green light (200nm ... 500nm).

Beside the CORE module OPTO is used.



Marketing & Sales Headquarters

X-FAB Semiconductor Foundries AG  
Haarbergstr. 67, 99097 Erfurt, Germany  
Tel.: +49-361-427-6160  
Fax: +49-361-427-6161  
Web: <http://www.xfab.com>

General Information  
Technology/Design Support

[info@xfab.com](mailto:info@xfab.com)  
[hotline@xfab.com](mailto:hotline@xfab.com)