

### **Product Change Notice**

Doc. No.: RF-008-0002 Revision: E

### PCN-200917-05 C19\_070\_8 inch BSI products change from laser anneal process to High-K process \_TSMC (OV6946/OVM6946)

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### **Product Change Notice**

PCN Number	200917-05	PCN Date	Jan-31, 2021	Effective Date	April-31, 2021
PCN Revision	0				
Title	TSMC 8 inch BSI products change from laser anneal process to High-K process				
Customer Contact	OV06946, OVM6946 customers				
Proposed Ship Date		TBD		Sample Available date	available

	PCN Details		
Description of Cha	nge		
<ul> <li>TSMC will pha</li> <li>New part# wi</li> <li>OVM6</li> <li>OVM6</li> <li>OVM6</li> <li>OVM6</li> <li>OVM6</li> </ul>	<ul> <li>3SI products to change from Laser anneal process to High-K process.</li> <li>ase out 8 inch laser anneal tool due to tool vendor end of service.</li> <li>th High-K</li> <li>5946-RAJA → OVM6946-RAJA-1B (with High-K)</li> <li>5946-RAJH → OVM6946-RAJH-1B (with High-K)</li> <li>5946-RAJH-R1 → OVM6946-RAJH-1C (with High-K)</li> <li>5946-RANA → OVM6946-RANA-1B (with High-K)</li> <li>946-xxxx-xx → OV06946-xxxx-1D (with High-K)</li> </ul>		
Reason for Change Laser tool phase ou			
Product Affected	OV06946-xxxx-xx; OVM6946-xxxx-xx;		
Addition Information	n		
8 inch BSI products fr	rom Laser to High-K_Summary (PCN)		
Notes: Customer sh	ould acknowledge receipt of PCN within 30 days. Lack of acknowledgement within 30 days		

Notes: Customer should acknowledge receipt of PCN within 30 days. Lack of acknowledgement within 30 days constitutes change acceptance.



### Laser anneal to High-K process change\_Summary OV6946\_OVM6946

OVT

January 31, 2021

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#### Description:

- TSMC 8 inch BSI products to change from Laser anneal process to High-K process.
- TSMC will phase out 8 inch laser anneal tool due to tool vendor end of service.
- New part# with High-K

OVM6946-RAJA → OVM6946-RAJA-1B (with High-K) OVM6946-RAJH → OVM6946-RAJH-1B (with High-K) OVM6946-RAJH-R1 → OVM6946-RAJH-1C (with High-K) OVM6946-RANA → OVM6946-RANA-1B (with High-K) OV06946-xxxx-xx → OV06946-xxxx-1D (with High-K)

### Quality Plan:

- Reliability Qualification. (completed by Feb, 2021)

### Product Affected:

- OVM6946-xxxx-xx
- OV06946-xxxx-xx



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### What is changing?

- TSMC 8 inch BSI products to change from 'Laser anneal' process to 'High-K' process.
   TSMC will phase out 8" inch laser anneal tool due to tool vendor end of service.

BARC1 OX SIN SI Carrier Wafer Carrier Wafer	ARC2_SIN BARC1_OX SIN SIN Carrier Wafer Carrier Wafer Carrier Wafer	B	SI(STD)	HK-POR		
ARC2_SIN BARC1_OX AI: 1.5K SIN SI Carrier Wafer Carrier Wafer	ARC2_SIN BARC1_OX AI: 1.5K SIN SI Carrier Wafer Carrier Wafer	Sensing	BSM			
Sin Si WHO WHO WHO WHO WHO WHO WHO WHO WHO WHO	Sin Si WHO WHO WHO WHO WHO WHO WHO WHO WHO WHO	BARC2 SIN	AL 1.5K			
WHS     WHS <th>WHS     WHS     WHS<th>Sil</th><th></th><th>HK and the second s</th></th>	WHS     WHS <th>Sil</th> <th></th> <th>HK and the second s</th>	Sil		HK and the second s		
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Carrier Wafer Carrier Wafer	Carrier Wafer Carrier Wafer			WARK MERLE MORE		
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# **Performance Summary**

High-K over Laser anneal process (see page below for data)

- > Better White Pixel performance
- > Color Ratio and Color Shading are comparable
- Image mean values were shifted

## Summary

- > Customers can work with FAE if need to fine tune the ISP
- > Customer high-K material samples will be available on request



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# WP

> WP of High-K material are better than the laser anneal process.



## Image level mean

> Image level mean of High-K material are higher (~7%) than Laser anneal process.

HK LSA	HK LSA	HK LSA	HK LSA	
LM_30fps_4X_IMAGELEVEL4_Mean_R	LM_30fps_4X_IMAGELEVEL4_Mean_Gr	Gb	LM_30fps_4X_IMAGELEVEL4_Mean_8	
Box Plot LM_30fps_4X_IMAGELEVEL4_Mean_R	Box Plot LM_30fps_4X_IMAGELEVEL4_Mean_Gr	Box Plot LM_30fps_4X_IMAGELEVEL4_Mean_Gb	Box Plot LM_30fps_4X_IMAGELEVEL4_Mean_I	

## **Color Ratio**

> Color ratio of high-K material are comparable with Laser anneal process.



## **Color Shading: CS25ROI**

> Color shading of high-K material are comparable with Laser anneal process.



