

Light is OSRAM



17.12.2018

Dear Customer,

please find attached our OSRAM OS PCN:

## OS-PCN-2018-022-A Product update of OSRAM OSTAR Projection Cube

Important information for your attention:

Please review the **Customer approval form** at the end of the document and provide your feedback to your OSRAM OS sales partner before **22.01.2019**. \*)

Your prompt reply will help OSRAM OS to assure a smooth and well executed transition. If OSRAM OS does not hear from your side by the due date, we will assume your (if you are a Distributor: and your customer's) full acceptance to this proposed change and its implementation.

OSRAM OS understands the time requirements your organization needs to approve this PCN. However, if you can provide OSRAM OS an estimated date your organization will approve this PCN, OSRAM OS can use this date to plan continued production to secure your order needs during the transition time you require to review and approve this PCN.

Your attention and response to this matter is highly appreciated.

**Please direct your inquiries to your local Sales office.**

\*) OSRAM OS aligns with the widely-recognized JEDEC STANDARD "JESD46-C", which stipulates:

- "Customers should acknowledge receipt of the PCN within 30 days of delivery of the PCN."
- "Lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change."
- "After acknowledgement, lack of additional response within the 90 day period constitutes acceptance of the change. An acceptance or concern response should be submitted to the supplier in a timely fashion, (i.e., customer should not wait to the end of the 90 day review period before responding, if the response is known before that time.)"

# OS-PCN-2018-022-A

## Product update of OSRAM OSTAR Projection Cube

<b>Subject of change:</b>	Product update of OSRAM OSTAR Projection Cube	
<b>Affected products:</b>	LCG H9RN LCG H9RM	
<b>Reason for change:</b>	<ul style="list-style-type: none"> <li>- Increased brightness demand</li> <li>- Roll-out of 6 inch Si subcarrier technology</li> <li>- Introduction of additional frontend production site</li> </ul>	
<b>Description of change:</b>	<p>Chip level:</p> <ul style="list-style-type: none"> <li>- Introduction of 6 inch UX:3 on Si carrier</li> <li>- Introduction of Kulim as additional FE production location</li> </ul> <p>Package level:</p> <ul style="list-style-type: none"> <li>- Improved leadframe design</li> </ul>	
<b>Product identification:</b>	Date code / Laser marking	
<b>Time schedule for PCN material</b> (after implementation of change):	Final qualification report	available
	Samples available	15.01.2019
	Intended Start of delivery	01.03.2019 <sup>*)</sup> <small>*) or earlier if released by customer and upon mutual agreement</small>
<b>Time schedule for Pre-PCN material</b> (prior to implementation of change):	Last time order date (LTO)	01.06.2019 <sup>**) </sup> <small>**) expected approval date needs to be available at this time. Lead time and LTO quantity shall be mutually agreed between OSRAM OS and customer.</small>
	Last time delivery date (LTD)	01.12.2019 <sup>***)</sup> <small>***) planned last date for delivery of products of current status</small>
	<b>Assessment:</b>	No change in device footprint, function and reliability.
<b>Documentation:</b>	Customer information package Qualification report	

Note:

Pre-PCN material: Products of current status, means before implementation of the changes as described in the PCN.

PCN material: Products with implementation of the changes as described in the PCN.

## Customer approval form

### OS-PCN-2018-022-A

### Product update of OSRAM OSTAR Projection Cube

Please list product(s) affected in your application(s):

Please check the appropriate box below:

- |  |   |
|--|---|
| <input type="radio"/> <b>Approval:</b><br>We agree with the proposed change and accept start of the shipment upon availability of PCN material | <input type="radio"/> <b>Not relevant:</b><br>Change is not relevant for products in use. |
|--|---|
- Change cannot be accepted:**
- We have objections:**
  - We request following Information:**
  - We request following Samples:**
  - Expected approval date:**
  - Volume requirements for Pre-PCN material:**

Sender:

Company:

Address / Location:

Signature:

Date:

Please return this approval form to your Sales partner.

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**OSRAM**  
Opto Semiconductors



# OS-PCN-2018-022-A

## Product update of OSRAM OSTAR Projection Cube

## Customer information package

OS QM CQM | 17.12.2018

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### Reason for change

- Increased brightness demand
- Roll-out of 6 inch Si subcarrier technology
- Introduction of additional frontend production site

### Description of change

#### Chip level:

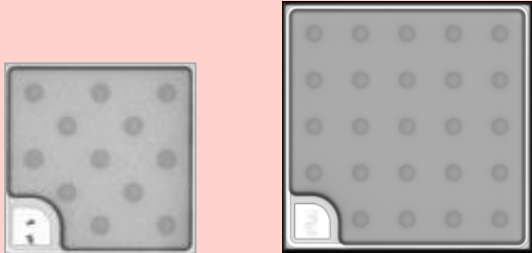
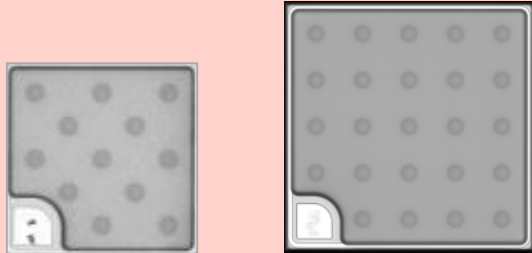
- Introduction of 6 inch UX:3 on Si carrier
- Introduction of Kulim as additional FE production location

#### Package level:

- Improved leadframe design

No change in device footprint, function and reliability.

### Description of change – chip level:

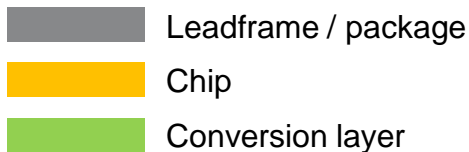
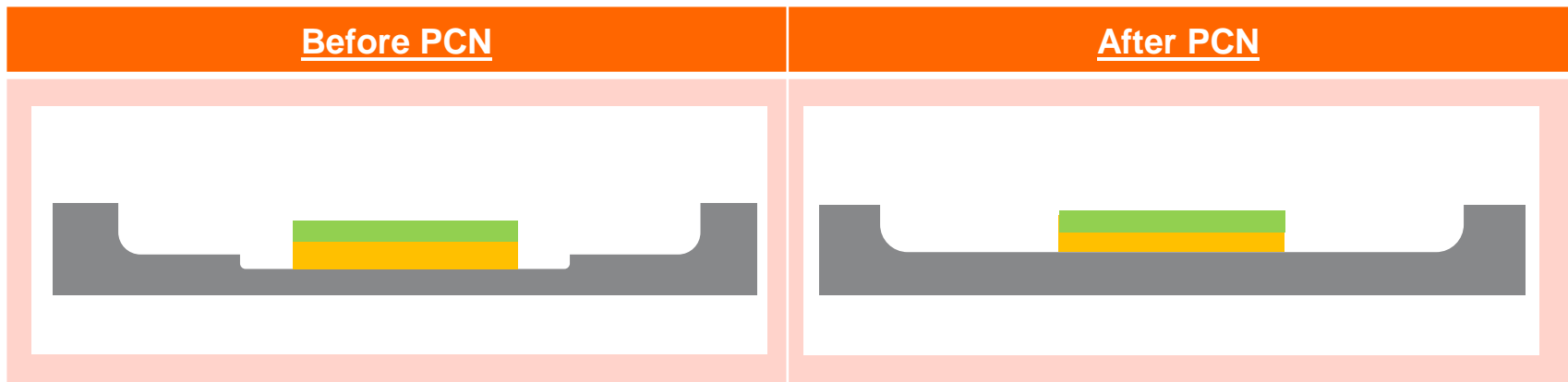
	<u>Before PCN</u>	<u>After PCN</u>
<b>Picture (exemplary)</b>	 <p>750µm      1mm</p>	 <p>750µm      1mm</p>
<b>Chip height</b>	150µm	120µm
<b>Wafer diameter</b>	100 mm (4“)	150 mm (6“)
<b>Chip carrier material</b>	Ge	Si
<b>Chip Production location</b>	Penang (Malaysia) Regensburg (Germany)	Penang (Malaysia) Regensburg (Germany) Kulim (Malaysia)

### Description of change – package level:

Improved leadframe design:

- Implementation of solder control structure (details see drawing on page 8)
- Increased leadframe metal thickness below chip

Schematic drawing (cross section) of leadframe design change:



Note: drawing is not to scale



### List of affected products

#### OSRAM OSTAR Projection Cube

LCG H9RN

LCG H9RM

**PCN Samples: on request**

### Changes in the datasheets:

#### Updated Datasheet Versions

Product type	Data sheet version before PCN	Data sheet version after PCN
LCG H9RN	1.2	1.3
LCG H9RM	1.3	1.4

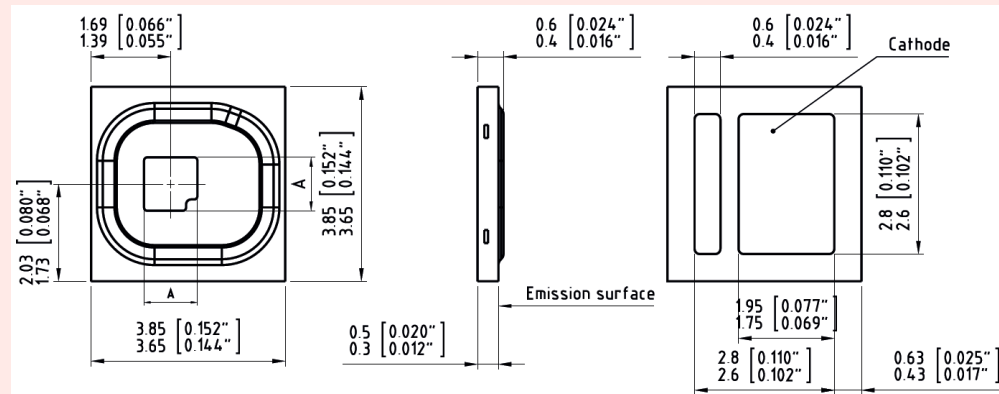
For additional information regarding the changes please refer to the next pages.

Note: After PCN approval and shipment of new material, the new data sheet versions will be valid. Latest version of data sheet is accessible on OSRAM OS homepage.

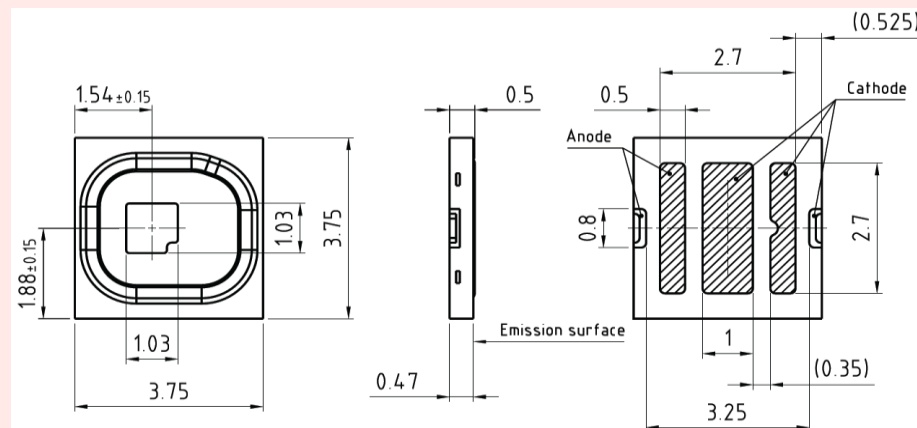
### Changes in the datasheets (exemplary shown for LCG H9RN):

- Leadframe drawing

Before PCN



After PCN



### Changes in the datasheets (exemplary shown for LCG H9RN):

- Updated color binning

Before PCN			After PCN		
<b>Group</b>	<b>Cx</b>	<b>Cy</b>	<b>Group</b>	<b>Cx</b>	<b>Cy</b>
1	0.3123	0.6378	2	0.3083	0.6404
	0.3190	0.6478		0.3150	0.6504
	0.3290	0.6411		0.3250	0.6437
	0.3223	0.6311		0.3183	0.6337

- Improved Rth values

Before PCN			After PCN		
$R_{thJS\ real}$	typ.	6.0 K / W	$R_{thJS\ real}$	typ.	5.3 K / W
	max.	7.5 K / W		max.	6.4 K / W
$R_{thJS\ elec.}$	typ.	4.3 K / W	$R_{thJS\ elec.}$	typ.	3.8 K / W
	max.	5.4 K / W		max.	4.6 K / W

### Time schedule

for PCN material  
(after implementation  
of change):

Final qualification report

Available

Samples available

15.01.2019

Intended start of delivery

01.03.2019<sup>\*)</sup>

<sup>\*)</sup> or earlier if released by customer and upon mutual agreement

for Pre-PCN material  
(prior to implementation  
of change):

Last time order date (LTO)

01.06.2019 <sup>\*\*)</sup>

<sup>\*\*)</sup> expected approval date needs to be available at this time. Lead time and LTO quantity shall be mutually agreed between OSRAM OS and customer.

Last time delivery date (LTD)

01.12.2019 <sup>\*\*\*)</sup>

<sup>\*\*\*)</sup> planned last date for delivery of products of current status

Note:

Pre-PCN material: Products of current status, means before implementation of the changes as described in the PCN.

PCN material: Products with implementation of the changes as described in the PCN.

**QUALITY**  
**FIRST**

**Thank you.**

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## *Products Affected by Product Change Notification*

**Number:** OS-PCN-2018-022-A

**Name:** Product update of OSRAM OSTAR Projection Cube

**Release Date:** 12/17/2018

**Response Due Date:** 1/22/2019

**Implementation Date:** 3/1/2019

<i>Product</i>	<i>QNumber</i>	<i>QNumber Description</i>	<i>Part Number</i>
LCG H9RM	Q65111A1779	LCG H9RM-KZLZ-1-0-350-R18-Z	LCG H9RM-KZLZ-1-Z
	Q65111A2498	LCG H9RM-LXLZ-1-0-350-R18-Z	LCG H9RM-LXLZ-1-Z
	Q65111A5031	LCG H9RM-LYLZ-1-0-350-R18-Z-SA	LCG H9RM-LYLZ-1-SA
	Q65111A6337	LCG H9RM-LXLY-1-0-350-R18-Z-PR	LCG H9RM-LXLY-1-Z-PR
LCG H9RN	Q65111A1778	LCG H9RN-MYNY-1-0-700-R18-Z	LCG H9RN-MYNY-1
	Q65111A3831	LCG H9RN-MYNX-1-0-700-R18-Z	LCG H9RN-MYNX-1-Z
	Q65111A4963	LCG H9RN-NXNY-1-0-700-R18-Z-XX	LCG H9RN-NXNY-1-XX