

**QUALITY**  
**FIRST**

**OS-PCN-2021-016-A1**

**Introduction of next chip generation for  
vital sign monitoring devices**

**Customer information package**

OS QM CQM | 01.12.2021

**Light is OSRAM**

**OSRAM**  
Opto Semiconductors

# OS-PCN-2021-016-A1

## Introduction of next chip generation

---



	Page
1. Reason for change	03
2. Description of change	04
3. List of affected products	06
4. PCN samples	07
4. Changes in the datasheets	08
5. Time schedule	26

---

# OS-PCN-2021-016-A1

## Introduction of next chip generation

---

**QUALITY  
FIRST**

### 1. Reason for change


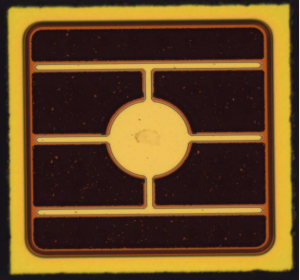
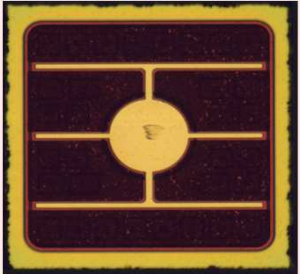
- Introduce next red chip generation with improved brightness and lower forward voltage
- Introduce next green chip generation with improved brightness and lower forward voltage
- Secure continuous supply for future customer demand
- Change from Luminous Intensity to Radiant Intensity of CH DELSS1.22 for portfolio harmonization

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 2. Description of red chip change – SFH 7015, SFH 7016, SFH 7072, CH DELSS1.22

	Current status	New status
Wafer Production Line	4" 	6"
Wafer Substrate	Germanium carrier	Silicon carrier
Height	150µm	120µm
Appearance		

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 2. Description of green chip change – SFH 7070, SFH 7072

	Current status	New status
Epitaxie layer version	Current epitaxie layer version	Improved epitaxie layer version

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 3. List of affected products

Multi Chip LED	FIREFLY® E1608	BIOFY®
SFH 7015	CH DELSS1.22	SFH 7070
SFH 7016		SFH 7072

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 4. PCN Samples

Multi Chip LED	FIREFLY® E1608	BIOFY®
SFH 7015	CH DELSS1.22	SFH 7070
SFH 7016		SFH 7072

 available

 on request

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets:

#### Updated Datasheet Versions

Product type	Data sheet version before PCN	Data sheet version after PCN	Publication date
CH DELSS1.22 (w/o Rth update)	1.4	1.5	15.10.2021
CH DELSS1.22 (with Rth update)	-	1.6	15.12.2021
SFH 7015 (w/o Rth update)	1.3	1.4	15.10.2021
SFH 7015 (with Rth update)	-	1.5	15.12.2021
SFH 7016 (w/o Rth update)	1.3	1.4	15.10.2021
SFH 7016 (with Rth update)	-	1.5	15.12.2021
SFH 7070 (w/o Rth update)	1.2	1.3	15.10.2021
SFH 7070 (with Rth update)	-	1.4	15.12.2021
SFH 7072 (w/o Rth update)	1.4	1.5	15.10.2021
SFH 7072 (with Rth update)	-	1.6	15.12.2021

Note 1: Rth values will be updated mid of December with datasheet versions 1.5 due to ongoing measurement. The reference system will change from junction-ambient to junction-solder for more precise planning capability at customer side.

Note 2: 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.



# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7015/SFH 7016

#### Increased brightness for red die

$I_F = 20 \text{ mA}$

Current Status		New Status	
<b>SFH 7015</b>		<b>SFH 7015</b>	
Type	Brightness <sup>1)2)</sup>	Type	Brightness <sup>1)2)</sup>
SFH 7015		SFH 7015	
• hyper red	• $I_e = 2.20 \dots 6.75 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )	• hyper red	• $I_e = 2.50 \dots 7.00 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )
• infrared (940 nm)	• $I_e = 1.65 \dots 4.05 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )	• infrared (940 nm)	• $I_e = 1.65 \dots 4.05 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )
<b>SFH 7016</b>		<b>SFH 7016</b>	
Type	Brightness <sup>1)2)</sup>	Type	Brightness <sup>1)2)</sup>
SFH 7016		SFH 7016	
• true green	• $I_e = 2.20 \dots 5.40 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )	• true green	• $I_e = 2.20 \dots 5.40 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )
• hyper red	• $I_e = 2.20 \dots 6.75 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )	• hyper red	• $I_e = 2.50 \dots 7.00 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )
• infrared (940 nm)	• $I_e = 1.65 \dots 4.05 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )	• infrared (940 nm)	• $I_e = 1.65 \dots 4.05 \text{ mW/sr}$ ( $I_F = 20 \text{ mA}$ )

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7015/SFH 7016

#### Maximum Ratings for red die

$T_A = 25\text{ °C}$

Current Status					New Status						
<b>SFH 7015</b>					<b>SFH 7015</b>						
Surge current $t_p \leq 400\ \mu\text{s}; D = 0.005$	$I_{FSM}$	max.	0.6 A	1 A	Forward current pulsed $t_p \leq 2.3\ \text{ms}; D \leq 0.005$	$I_{F\ \text{pulse}}$	max.	0.3 A	1 A		
Reverse voltage <sup>3)</sup>	$V_R$	max.	5 V	5 V	Reverse voltage <sup>3)</sup>	$V_R$	max.	5 V	5 V		
Power consumption	$P_{tot}$	max.	120 mW	110 mW	Power consumption	$P_{tot}$	max.	100 mW	110 mW		
<b>SFH 7016</b>					<b>SFH 7016</b>						
Surge current $t_p \leq 100\ \mu\text{s}; D = 0.005$	$I_{FSM}$	max.	0.75 A	0.6 A	1 A	Forward current pulsed $t_p \leq 100\ \mu\text{s}; D \leq 0.005$	$I_{F\ \text{pulse}}$	max.	0.75 A	0.3 A	1 A
Reverse voltage <sup>3)</sup>	$V_R$	max.	5 V	5 V	5 V	Reverse voltage <sup>3)</sup>	$V_R$	max.	5 V	5 V	5 V
Power consumption	$P_{tot}$	max.	90 mW	120 mW	110 mW	Power consumption	$P_{tot}$	max.	90 mW	100 mW	110 mW

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7015/SFH 7016

#### Characteristics for red die and green die (SFH 7016 only)

$I_F = 20 \text{ mA}$ ;  $t_p = 20 \text{ ms}$ ;  $T_A = 25 \text{ }^\circ\text{C}$

Current Status					New Status						
<b>SFH 7015</b>					<b>SFH 7015</b>						
Forward voltage <sup>5)</sup>	$V_F$	min.	1.75 V	1.10 V	Forward voltage <sup>5)</sup>	$V_F$	min.	1.70 V	1.10 V		
		typ.	2.10 V	1.30 V			typ.	1.90 V	1.30 V		
		max.	2.40 V	1.50 V			max.	2.20 V	1.50 V		
Reverse current <sup>3)</sup> $V_R = 5 \text{ V}$	$I_R$	max.	10 $\mu\text{A}$	10 $\mu\text{A}$	Reverse current <sup>3)</sup> $V_R = 5 \text{ V}$	$I_R$	max.	10 $\mu\text{A}$	10 $\mu\text{A}$		
Radiant intensity <sup>1)2)</sup> $I_F = 20 \text{ mA}$ ; $t_p = 20 \text{ ms}$	$I_e$	min.	2.2 mW/sr	1.65 mW/sr	Radiant intensity <sup>1)2)</sup> $I_F = 20 \text{ mA}$ ; $t_p = 20 \text{ ms}$	$I_e$	min.	2.5 mW/sr	1.65 mW/sr		
		typ.	4 mW/sr	3 mW/sr			typ.	4.2 mW/sr	3 mW/sr		
		max.	6.75 mW/sr	4.05 mW/sr			max.	7 mW/sr	4.05 mW/sr		
Total radiant flux <sup>6)</sup>	$\Phi_e$	typ.	13 mW	10 mW	Total radiant flux <sup>6)</sup>	$\Phi_e$	typ.	14 mW	10 mW		
<b>SFH 7016</b>					<b>SFH 7016</b>						
Forward voltage <sup>5)</sup>	$V_F$	min.	1.60 V	1.75 V	1.10 V	Forward voltage <sup>5)</sup>	$V_F$	min.	2.20 V	1.70 V	1.10 V
		typ.	2.50 V	2.10 V	1.30 V			typ.	2.40 V	1.90 V	1.30 V
		max.	2.80 V	2.40 V	1.50 V			max.	2.80 V	2.20 V	1.50 V
Reverse current <sup>3)</sup> $V_R = 5 \text{ V}$	$I_R$	max.	10 $\mu\text{A}$	10 $\mu\text{A}$	10 $\mu\text{A}$	Reverse current <sup>3)</sup> $V_R = 5 \text{ V}$	$I_R$	max.	10 $\mu\text{A}$	10 $\mu\text{A}$	10 $\mu\text{A}$
Radiant intensity <sup>1)2)</sup> $I_F = 20 \text{ mA}$ ; $t_p = 20 \text{ ms}$	$I_e$	min.	2.2 mW/sr	2.2 mW/sr	1.65 mW/sr	Radiant intensity <sup>1)2)</sup> $I_F = 20 \text{ mA}$ ; $t_p = 20 \text{ ms}$	$I_e$	min.	2.2 mW/sr	2.5 mW/sr	1.65 mW/sr
		typ.	4 mW/sr	4 mW/sr	3 mW/sr			typ.	4 mW/sr	4.2 mW/sr	3 mW/sr
		max.	5.4 mW/sr	6.75 mW/sr	4.05 mW/sr			max.	5.4 mW/sr	7 mW/sr	4.05 mW/sr
Total radiant flux <sup>6)</sup>	$\Phi_e$	typ.	14 mW	13 mW	11 mW	Total radiant flux <sup>6)</sup>	$\Phi_e$	typ.	14 mW	14 mW	11 mW

Note: Rth values will be updated mid of December with datasheet versions 1.5 due to ongoing measurement. The reference system will change from junction-ambient to junction-solder for more precise planning capability at customer side

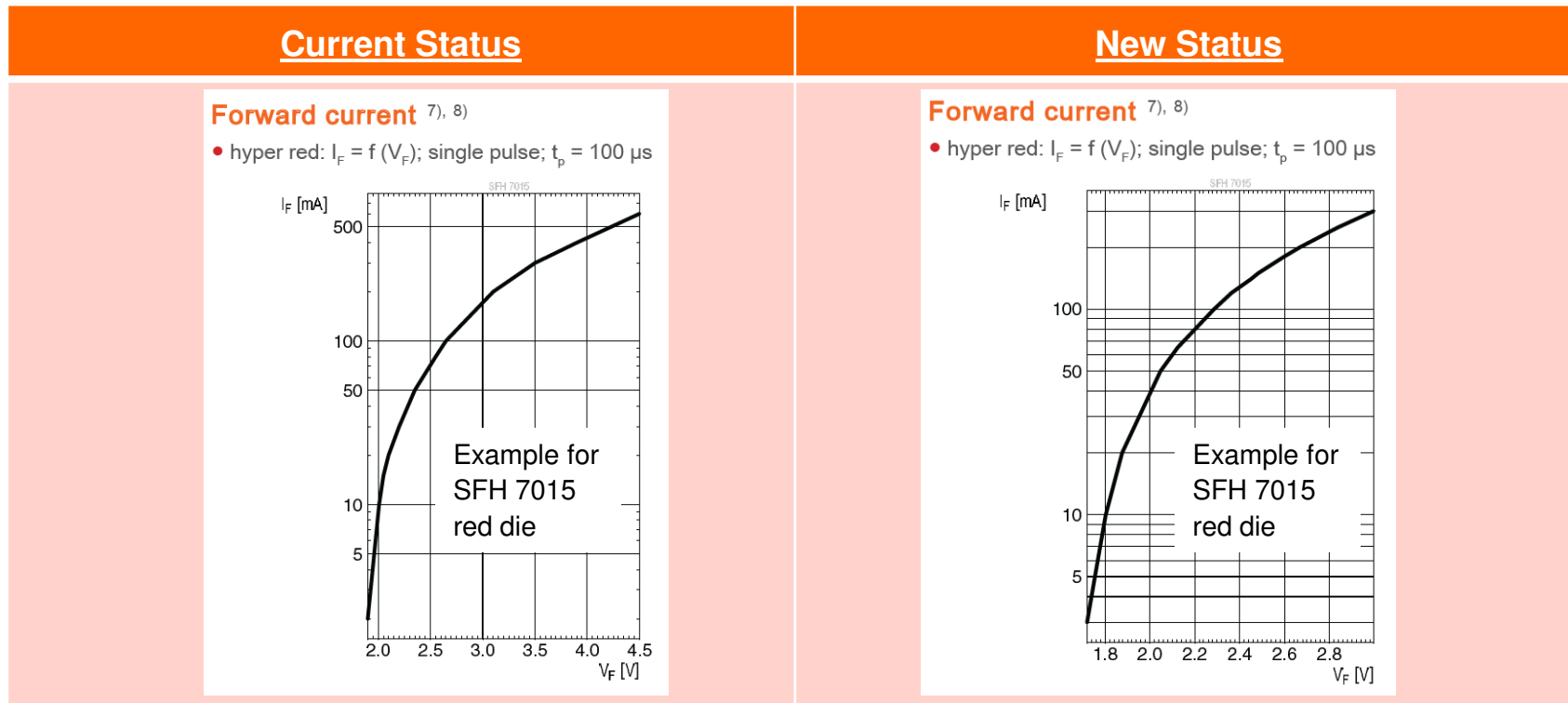
# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7015/SFH 7016

#### Characteristic curves for red and green die



Note: Characteristic curves in both datasheets for red and green die have been updated. Please review new datasheets for further details/changes. Shown diagram for current status is only exemplary.

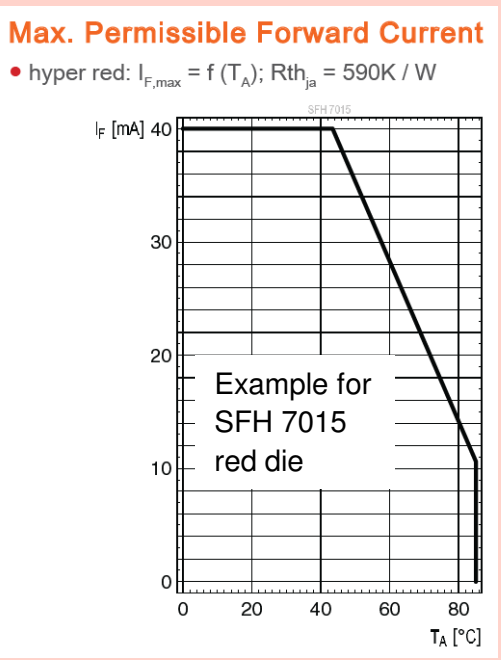
# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7015/SFH 7016

#### Characteristic curves for red and green die

Current Status	New Status
<p><b>Max. Permissible Forward Current</b></p> <ul style="list-style-type: none"><li>hyper red: <math>I_{F,max} = f(T_A)</math>; <math>R_{th_{ja}} = 590K / W</math></li></ul>  <p>Example for SFH 7015 red die</p>	<p>Characteristic curves for <i>Max. Permissible Forward Current</i> and <i>Permissible Pulse Handling Capability</i> will be updated mid of December with datasheet versions 1.5 due to ongoing measurement. The reference System will change from junction-ambient to junction-solder for more precise planning capability at customer side. No deterioration of the thermal behavior expected due to the chip change.</p>

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: CH DELSS1.22

#### Change of Ordering Code

Current Status			New Status			
CH DELSS1.22			CH DELSS1.22			
<b>Ordering Information</b>			<b>Ordering Information</b>			
Type	Luminous Intensity <sup>1)</sup> I <sub>F</sub> = 20 mA I <sub>v</sub>	Ordering Code	Type	Radiant Intensity <sup>1)</sup> I <sub>F</sub> = 20 mA I <sub>e</sub>	Radiant Intensity I <sub>F</sub> = 20 mA I <sub>e</sub>	Ordering Code
CH DELSS1.22-S1T2-35	180 ... 450 mcd	Q65112A1192	CH DELSS1.22-N1P2-35	2.80 ... 7.10 mW/sr	4.50 mW/sr	Q65113A4318

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: CH DELSS1.22

#### Change from Luminous Intensity to Radiant Intensity

$I_F = 20 \text{ mA}$

Current Status				New Status		
<b>CH DELSS1.22</b>				<b>CH DELSS1.22</b>		
<b>Ordering Information</b>				<b>Ordering Information</b>		
Type	Luminous Intensity <sup>1)</sup> $I_F = 20 \text{ mA}$ $I_v$	Ordering Code		Type	Radiant Intensity <sup>1)</sup> $I_F = 20 \text{ mA}$ $I_e$	Ordering Code
CH DELSS1.22-S1T2-35	180 ... 450 mcd	Q65112A1192		CH DELSS1.22	2.8 ... 7.1 mW/sr	Q65112A1192.
<b>Brightness Groups</b>				<b>Brightness Groups</b>		
Group	Luminous Intensity <sup>1)</sup> $I_F = 20 \text{ mA}$ min. $I_v$	Luminous Intensity. <sup>1)</sup> $I_F = 20 \text{ mA}$ max. $I_v$	Luminous Flux <sup>2)</sup> $I_F = 20 \text{ mA}$ typ. $\Phi_v$	Group	Radiant Intensity <sup>1)</sup> $I_F = 20 \text{ mA}$ min. $I_e$	Radiant Intensity <sup>1)</sup> $I_F = 20 \text{ mA}$ max. $I_e$
S1	180 mcd	224 mcd	670 mlm	N1	2.8 mW/sr	3.6 mW/sr
S2	224 mcd	280 mcd	830 mlm	N2	3.6 mW/sr	4.5 mW/sr
T1	280 mcd	355 mcd	1050 mlm	P1	4.5 mW/sr	5.6 mW/sr
T2	355 mcd	450 mcd	1330 mlm	P2	5.6 mW/sr	7.1 mW/sr

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: CH DELSS1.22

#### Maximum Ratings

Current Status				New Status			
<b>CH DELSS1.22</b>				<b>CH DELSS1.22</b>			
<b>Maximum Ratings</b>				<b>Maximum Ratings</b>			
Parameter	Symbol		Values	Parameter	Symbol		Values
Operating Temperature	$T_{op}$	min.	-40 °C	Operating Temperature	$T_{op}$	min.	-40 °C
		max.	85 °C			max.	85 °C
Storage Temperature	$T_{stg}$	min.	-40 °C	Storage Temperature	$T_{stg}$	min.	-40 °C
		max.	85 °C			max.	85 °C
Junction Temperature	$T_j$	max.	90 °C	Junction Temperature	$T_j$	max.	90 °C
Forward current $T_s = 25\text{ °C}$	$I_F$	min.	1 mA	Forward current $T_s = 25\text{ °C}$	$I_F$	min.	1 mA
		max.	30 mA			max.	30 mA
Surge Current $t \leq 10\ \mu\text{s}; D = 0.005; T_s = 25\text{ °C}$	$I_{FS}$	max.	70 mA	Forward current pulsed $t \leq 10\ \mu\text{s}; D = 0.005; T_s = 25\text{ °C}$	$I_{F\ pulse}$	max.	0.15 A
Reverse voltage <sup>2)</sup> $T_s = 25\text{ °C}$	$V_R$	max.	12 V	Reverse voltage <sup>2)</sup> $T_s = 25\text{ °C}$	$V_R$	max.	12 V
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)	$V_{ESD}$		2 kV	ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)	$V_{ESD}$		2 kV



# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: CH DELSS1.22

#### Characteristics

$I_F = 20 \text{ mA}; T_S = 25 \text{ }^\circ\text{C}$

Current Status				New Status					
<b>CH DELSS1.22</b>				<b>CH DELSS1.22</b>					
<b>Characteristics</b>				<b>Characteristics</b>					
$I_F = 20 \text{ mA}; T_S = 25 \text{ }^\circ\text{C}$				$I_F = 20 \text{ mA}; T_S = 25 \text{ }^\circ\text{C}$					
Parameter	Symbol		Values	Parameter	Symbol		Values		
Peak Wavelength	$\lambda_{\text{peak}}$	typ.	660 nm	Peak Wavelength	$\lambda_{\text{peak}}$	typ.	660.0 nm		
Centroid Wavelength <sup>3)</sup> $I_F = 20 \text{ mA}$	$\lambda_{\text{centroid}}$	min.	648 nm	Centroid Wavelength <sup>3)</sup> $I_F = 20 \text{ mA}$	$\lambda_{\text{centroid}}$	min.	648.0 nm		
		typ.	657 nm			typ.	655.0 nm		
		max.	667 nm			max.	667.0 nm		
Viewing angle at 50% $I_V$	$2\phi$	typ.	120 °	Viewing angle at 50% $I_V$	$2\phi$	typ.	120 °		
Forward Voltage <sup>4)</sup> $I_F = 20 \text{ mA}$	$V_F$	min.	1.80 V	Total radiant flux <sup>4)</sup> $I_F = 20 \text{ mA}$	$\Phi_e$	typ.	14 mW		
		typ.	2.00 V			Forward Voltage <sup>5)</sup> $I_F = 20 \text{ mA}$	$V_F$	min.	1.70 V
		max.	2.40 V					typ.	1.90 V
Reverse current <sup>2)</sup> $V_R = 12 \text{ V}$	$I_R$	max.	0.01 $\mu\text{A}$	Reverse current <sup>2)</sup> $V_R = 12 \text{ V}$	$I_R$	typ.	0.01 $\mu\text{A}$		
			10 $\mu\text{A}$			max.	10 $\mu\text{A}$		
Real thermal resistance junction/ambient <sup>5)6)</sup>	$R_{\text{thJA real}}$	typ.	420 K / W						
		max.	680 K / W						
Real thermal resistance junction/solderpoint <sup>5)</sup>	$R_{\text{thJS real}}$	typ.	60 K / W						
		max.	97 K / W						

Note: Rth values will be updated mid of December with datasheet versions 1.5 due to ongoing measurement. The reference system will change from junction-ambient to junction-solder for more precise planning capability at customer side

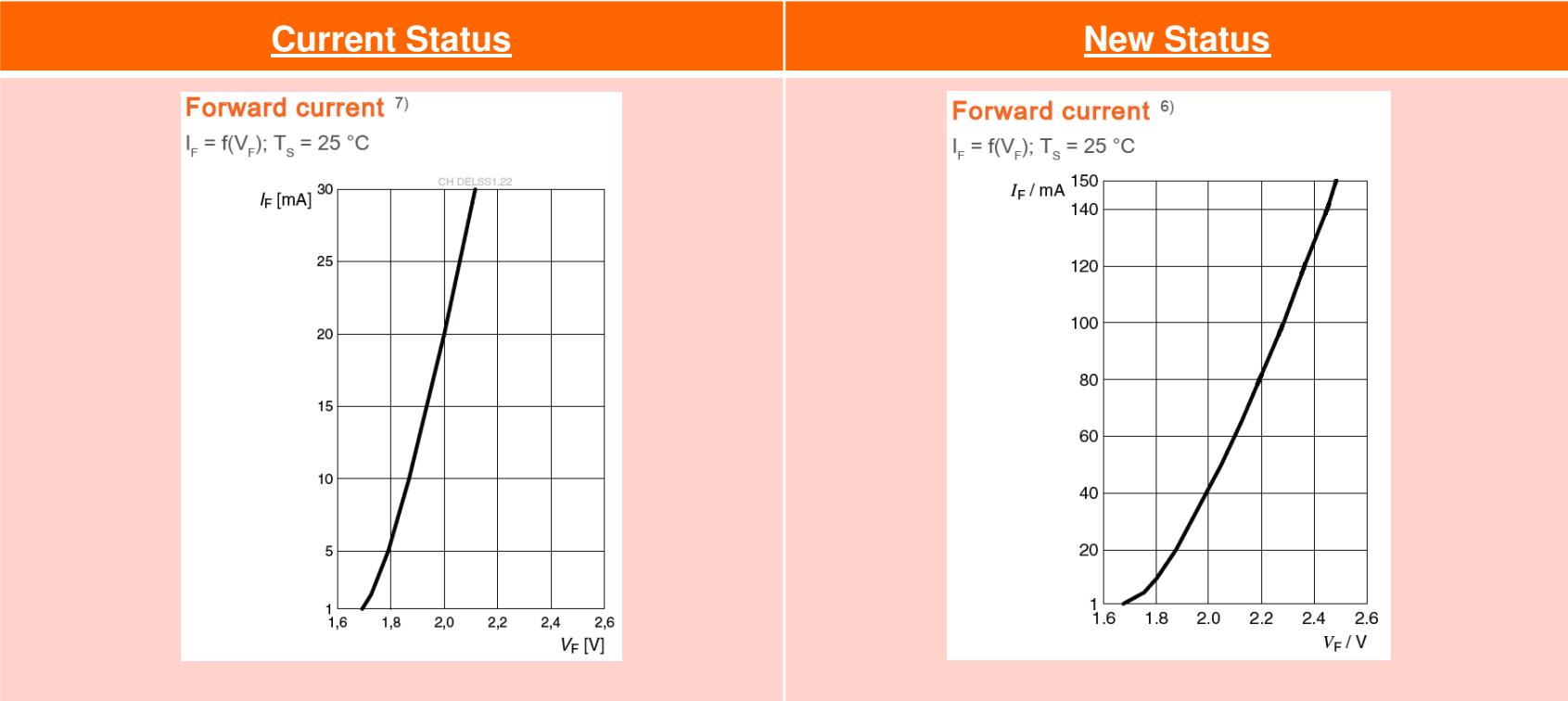
# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: CH DELSS1.22

#### Characteristic curves



Note: Characteristic curves have been updated. Please review new datasheet for further details/changes. Shown diagram for current status is only exemplary.

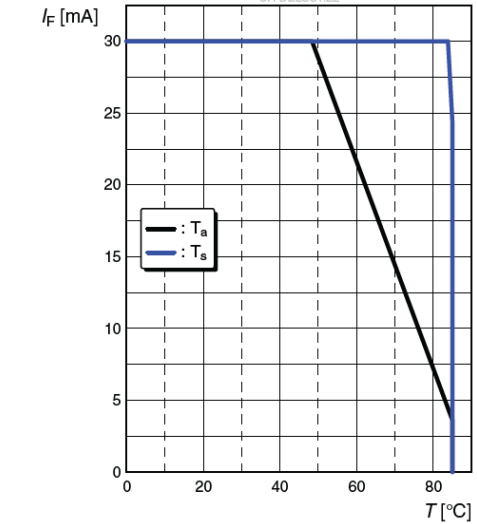
# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: CH DELSS1.22

#### Characteristic curves

Current Status	New Status																								
<p data-bbox="461 639 936 667"><b>Max. Permissible Forward Current</b></p> <p data-bbox="461 679 539 707"><math>I_F = f(T)</math></p>  <table border="1"><caption>Data points for Max. Permissible Forward Current</caption><thead><tr><th>Temperature [°C]</th><th>Max. Permissible Forward Current [mA] (T<sub>a</sub>)</th><th>Max. Permissible Forward Current [mA] (T<sub>s</sub>)</th></tr></thead><tbody><tr><td>0</td><td>30</td><td>30</td></tr><tr><td>20</td><td>30</td><td>30</td></tr><tr><td>40</td><td>30</td><td>30</td></tr><tr><td>45</td><td>30</td><td>30</td></tr><tr><td>60</td><td>20</td><td>30</td></tr><tr><td>80</td><td>5</td><td>30</td></tr><tr><td>85</td><td>0</td><td>30</td></tr></tbody></table>	Temperature [°C]	Max. Permissible Forward Current [mA] (T <sub>a</sub> )	Max. Permissible Forward Current [mA] (T <sub>s</sub> )	0	30	30	20	30	30	40	30	30	45	30	30	60	20	30	80	5	30	85	0	30	<p data-bbox="1133 627 1944 1203">Characteristic curves for <i>Max. Permissible Forward Current</i> and <i>Permissible Pulse Handling Capability</i> will be updated mid of December with datasheet versions 1.5 due to ongoing measurement. The reference System will change from junction-ambient to junction-solder for more precise planning capability at customer side. No deterioration of the thermal behavior expected due to the chip change.</p>
Temperature [°C]	Max. Permissible Forward Current [mA] (T <sub>a</sub> )	Max. Permissible Forward Current [mA] (T <sub>s</sub> )																							
0	30	30																							
20	30	30																							
40	30	30																							
45	30	30																							
60	20	30																							
80	5	30																							
85	0	30																							

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7070/SFH 7072

#### Maximum Ratings for red die

T<sub>A</sub> = 25 °C

Current Status				New Status			
SFH 7072				SFH 7072			
<b>Red Emitter</b>				<b>Red Emitter</b>			
Reverse voltage	V <sub>R</sub>	max.	12 V	Reverse voltage <sup>5)</sup>	V <sub>R</sub>	max.	12 V
Forward current	I <sub>F (DC)</sub>	max.	40 mA	Forward current	I <sub>F (DC)</sub>	max.	40 mA
Surge current	I <sub>FSM</sub>	max.	600 mA	Forward current pulsed	I <sub>F pulse</sub>	max.	300 mA
t <sub>p</sub> = 100 μs, D = 0				t <sub>p</sub> = 300 μs, D = 0.005			

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7072

#### Characteristics for red die

$T_A = 25\text{ °C}$

Current Status				New Status			
<b>SFH 7072 red die</b>				<b>SFH 7072 red die</b>			
Forward voltage <sup>7)</sup> $I_F = 20\text{ mA}$	$V_F$	typ. max.	2.1 V 2.8 V	Forward voltage <sup>7)</sup> $I_F = 20\text{ mA}$	$V_F$	typ. max.	1.9 V 2.2 V
Reverse current $V_R = 12\text{V}$	$I_R$		not designed for reverse operation	Reverse current $V_R = 12\text{V}$	$I_R$		not designed for reverse operation
Radiant intensity $I_F = 20\text{ mA}, t_p = 20\text{ ms}$	$I_e$	typ.	4.8 mW / sr	Radiant intensity $I_F = 20\text{ mA}, t_p = 20\text{ ms}$	$I_e$	typ.	5.1 mW / sr
Total radiant flux $I_F = 20\text{ mA}, t_p = 20\text{ ms}$	$\Phi_e$	typ.	14 mW	Total radiant flux $I_F = 20\text{ mA}, t_p = 20\text{ ms}$	$\Phi_e$	typ.	16 mW
Temperature coefficient of wavelength $I_F = 20\text{ mA}, -10\text{°C} \leq T \leq 100\text{°C}$	$TC_\lambda$	typ.	0.13 nm / K	Temperature coefficient of wavelength $I_F = 20\text{ mA}, -10\text{°C} \leq T \leq 100\text{°C}$	$TC_\lambda$	typ.	0.18 nm / K

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7070

#### Characteristics for green die

$T_A = 25\text{ °C}$

Current Status				New Status			
SFH 7070 green die				SFH 7070 green die			
Rise time (10% and 90%) $I_F = 100\text{ mA}$ , $t_p = 16\text{ }\mu\text{s}$ , $R_L = 50\text{ }\Omega$	$t_r$	typ.	56 ns	Rise time (10% and 90%) $I_F = 100\text{ mA}$ , $t_p = 16\text{ }\mu\text{s}$ , $R_L = 50\text{ }\Omega$	$t_r$	typ.	60 ns
Fall time (10% and 90%) $I_F = 100\text{ mA}$ , $t_p = 16\text{ }\mu\text{s}$ , $R_L = 50\text{ }\Omega$	$t_f$	typ.	56 ns	Fall time (10% and 90%) $I_F = 100\text{ mA}$ , $t_p = 16\text{ }\mu\text{s}$ , $R_L = 50\text{ }\Omega$	$t_f$	typ.	60 ns
Forward voltage $I_F = 20\text{ mA}$	$V_F$	typ. max.	3.0 V 3.4 V	Forward voltage <sup>7)</sup> $I_F = 20\text{ mA}$	$V_F$	typ. max.	2.4 V 2.8 V
Reverse current $V_R = 5\text{ V}$	$I_R$	.	Not designed for reverse operation	Reverse current $V_R = 5\text{ V}$	$I_R$	.	Not designed for reverse operation
Radiant intensity $I_F = 20\text{ mA}$ , $t_p = 20\text{ ms}$	$I_e$	typ.	3.8 mW / sr	Radiant intensity $I_F = 20\text{ mA}$ , $t_p = 20\text{ ms}$	$I_e$	typ.	4.8 mW / sr
Total radiant flux $I_F = 20\text{ mA}$ , $t_p = 20\text{ ms}$	$\Phi_e$	typ.	11.7 mW	Total radiant flux $I_F = 20\text{ mA}$ , $t_p = 20\text{ ms}$	$\Phi_e$	typ.	15 mW

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7072

#### Characteristics for green die

$T_A = 25\text{ °C}$

Current Status				New Status			
SFH 7072 green die				SFH 7072 green die			
Rise time $I_F = 100\text{ mA}, t_p = 16\mu\text{s}, R_L = 50\ \Omega$	$t_r$	typ.	56 ns	Rise time $I_F = 100\text{ mA}, t_p = 16\mu\text{s}, R_L = 50\ \Omega$	$t_r$	typ.	60 ns
Fall time $I_F = 100\text{ mA}, t_p = 16\mu\text{s}, R_L = 50\ \Omega$	$t_f$	typ.	56 ns	Fall time $I_F = 100\text{ mA}, t_p = 16\mu\text{s}, R_L = 50\ \Omega$	$t_f$	typ.	60 ns
Forward voltage <sup>7)</sup> $I_F = 20\text{ mA}$	$V_F$	typ. max.	3.0 V 3.4 V	Forward voltage <sup>7)</sup> $I_F = 20\text{ mA}$	$V_F$	typ. max.	2.4 V 2.8 V
Reverse current $V_R = 5\text{ V}$	$I_R$		not designed for reverse operation	Reverse current $V_R = 5\text{ V}$	$I_R$		not designed for reverse operation
Radiant intensity $I_F = 20\text{ mA}, t_p = 20\text{ ms}$	$I_e$	typ.	3.8 mW / sr	Radiant intensity $I_F = 20\text{ mA}, t_p = 20\text{ ms}$	$I_e$	typ.	4.7 mW / sr
Total radiant flux $I_F = 20\text{ mA}, t_p = 20\text{ ms}$	$\Phi_e$	typ.	11 mW	Total radiant flux $I_F = 20\text{ mA}, t_p = 20\text{ ms}$	$\Phi_e$	typ.	14 mW

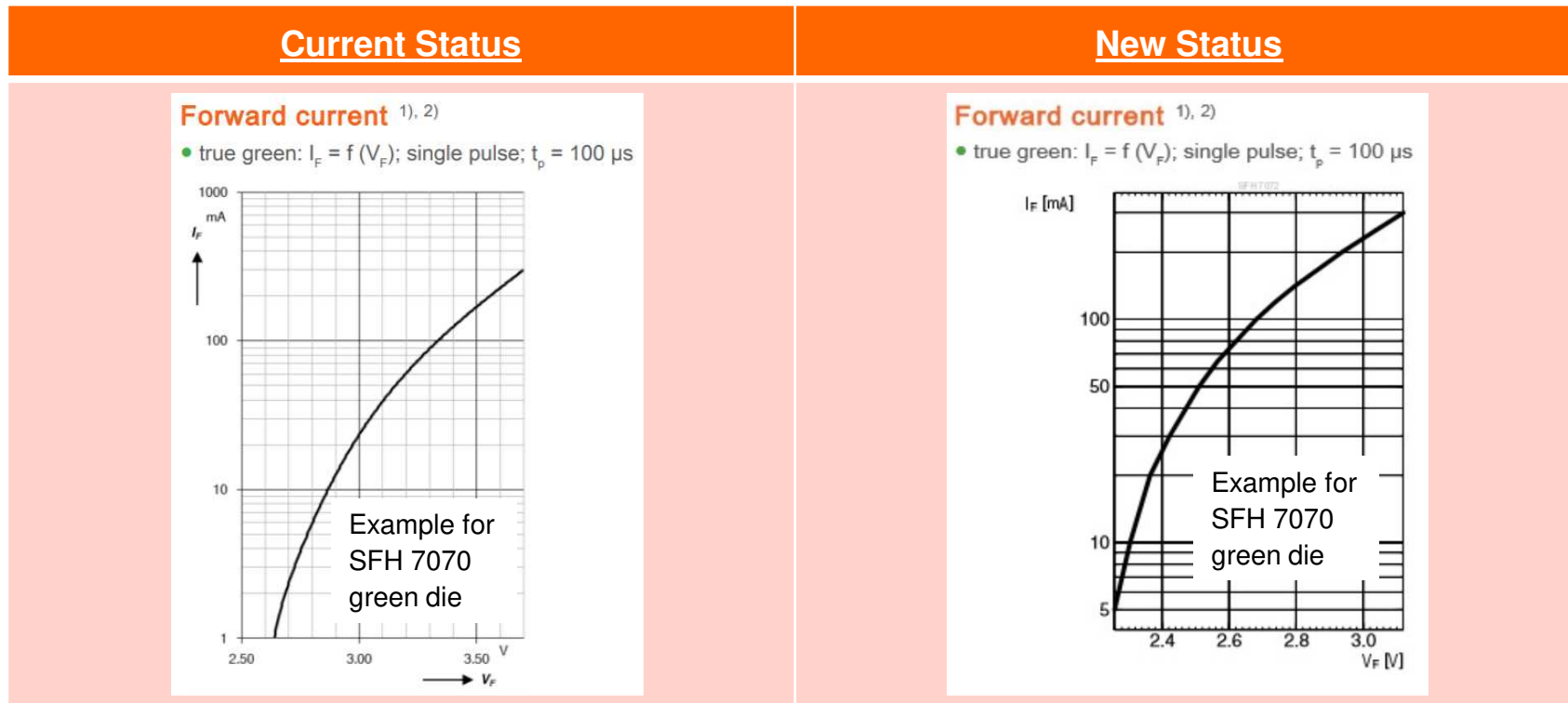
# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7070/SFH 7072

#### Characteristic curves for red and green die



Note: Characteristic curves in both datasheets for red and green die have been updated. Please review new datasheets for further details/changes. Shown diagram for current status is only exemplary.



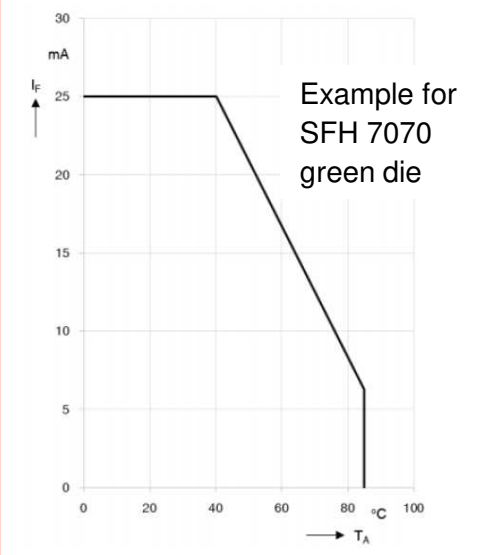
# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 5. Changes in the datasheets: SFH 7070/SFH 7072

#### Characteristic curves

Current Status	New Status								
<p><b>Max. Permissible Forward Current</b></p> <p>• true green: <math>I_{F,max} = f(T_A), R_{thJA} = 800 \text{ K/W}</math></p>  <p>Example for SFH 7070 green die</p> <table border="1"><caption>Data points for Max. Permissible Forward Current vs Ambient Temperature</caption><thead><tr><th>Ambient Temperature (TA) [°C]</th><th>Max. Permissible Forward Current (If) [mA]</th></tr></thead><tbody><tr><td>0</td><td>25</td></tr><tr><td>40</td><td>25</td></tr><tr><td>80</td><td>6</td></tr></tbody></table>	Ambient Temperature (TA) [°C]	Max. Permissible Forward Current (If) [mA]	0	25	40	25	80	6	<p>Characteristic curves for <i>Max. Permissible Forward Current</i> and <i>Permissible Pulse Handling Capability</i> will be updated mid of December with datasheet versions 1.5 due to ongoing measurement. The reference System will change from junction-ambient to junction-solder for more precise planning capability at customer side. No deterioration of the thermal behavior expected due to the chip change.</p>
Ambient Temperature (TA) [°C]	Max. Permissible Forward Current (If) [mA]								
0	25								
40	25								
80	6								

# OS-PCN-2021-016-A1

## Introduction of next chip generation



### 6. Time schedule

<b>for <u>PCN material</u></b> (after implementation of change):	Final qualification reports	available
	Samples available	yes
	Intended Start of delivery	03.12.2021*) <small>*) or earlier if released by customer and upon mutual agreement</small>

<b>for <u>Pre-PCN material</u></b> (prior to implementation of change):	Last time order date (LTO)	15.03.2022**) <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)	15.08.2022***) <small>***) planned last date for delivery of products of current status</small>

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.**