QUALITY FIRST

OS-PCN-2019-015-A
Brightness improvement for IR high power devices
Customer information package

OS QM CQM | 08.04.2019

Light is OSRAM

OSRAM
Opto Semiconductors

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Reason for change

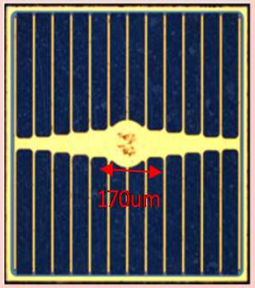
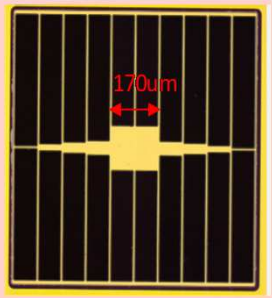
Item	Description
Introduction of latest chip generation	Fulfil market demands Ensure continuous supply Capacity increase

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Description of change

Change item	Current status	New status
Chip introduction	 Current chip generation on 190µm Ge carrier	 New chip generation on 120µm Si carrier

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet SFH 4703AS

Current status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	820 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	810 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	40 °
Dimensions of active chip area	L x W	typ.	0.75 x 0.75 mm x mm
Rise time (10% / 90%) I_F = 1 A; R_L = 50 Ω	t_r	typ.	8 ns
Fall time (10% / 90%) I_F = 1 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	3.55 V 4 V
Forward voltage I_F = 2 A; t_p = 100 µs	V_F	typ. max.	4 V 4.9 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Reverse voltage (ESD device) [2]	$V_{R\ ESD}$	min.	5 V
Total radiant flux [3]	Φ_e	typ.	1000 mW
Total radiant flux [3] I_F = 1 A; t_p = 100 µs	Φ_e	typ.	1040 mW
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	16 K / W

New status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

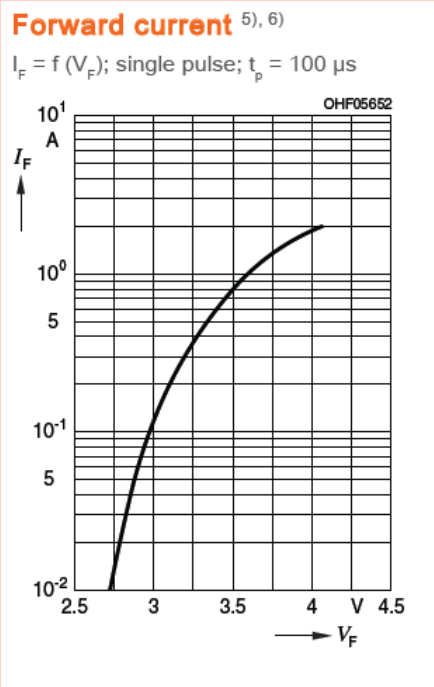
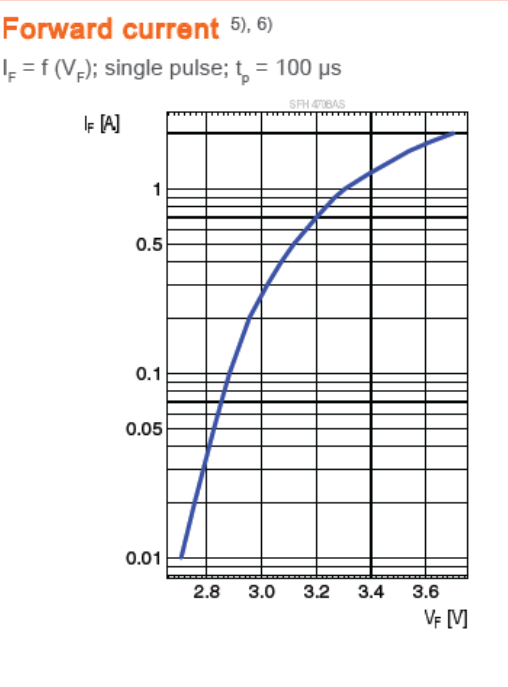
Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	820 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	810 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	40 °
Dimensions of active chip area	L x W	typ.	0.75 x 0.75 mm x mm
Rise time (10% / 90%) I_F = 1 A; R_L = 50 Ω	t_r	typ.	8 ns
Fall time (10% / 90%) I_F = 1 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	3.3 V 4 V
Forward voltage I_F = 2 A; t_p = 100 µs	V_F	typ. max.	3.7 V 4.9 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Reverse voltage (ESD device) [2]	$V_{R\ ESD}$	min.	5 V
Total radiant flux [3]	Φ_e	typ.	1050 mW
Total radiant flux [3] I_F = 1 A; t_p = 100 µs	Φ_e	typ.	1090 mW
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	16 K / W

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4703AS Change item	Current status	New status
Forward current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet SFH 4716A

Current status

Characteristics (T_A = 25 °C)

Parameter		Symbol	Values	Unit
Peak wavelength (I_F = 1 A, t_p = 10 ms)	(typ)	λ_{peak}	860	nm
Centroid wavelength (I_F = 1 A, t_p = 10 ms)	(typ)	$\lambda_{centroid}$	850	nm
Spectral bandwidth at 50% of I_{max} (I_F = 1 A, t_p = 10 ms)	(typ)	$\Delta\lambda$	30	nm
Half angle	(typ)	φ	± 75	°
Dimensions of active chip area	(typ)	L x W	1 x 1	mm x mm
Rise and fall times of I_e (10% and 90% of $I_{e\,max}$) (I_F = 3 A, R_L = 50 Ω)	(typ)	t_r / t_f	11/ 14	ns
Forward voltage (I_F = 1 A, t_p = 10 ms)	(typ (max))	V_F	1.65 (≤ 2.1)	V
Forward voltage (I_F = 2 A, t_p = 100 µs)	(typ (max))	V_F	1.9 (≤ 2.5)	V
Forward voltage (I_F = 3 A, t_p = 100 µs)	(typ (max))	V_F	2.2 (≤ 3)	V
Total radiant flux (I_F = 2 A, t_p = 100 µs)	(typ)	Φ_e	1400	mW

New status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

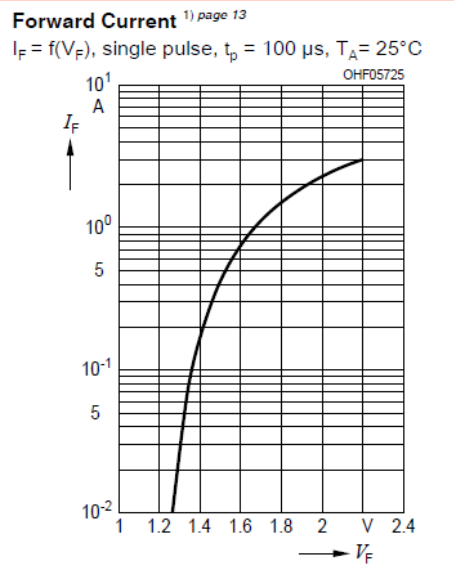
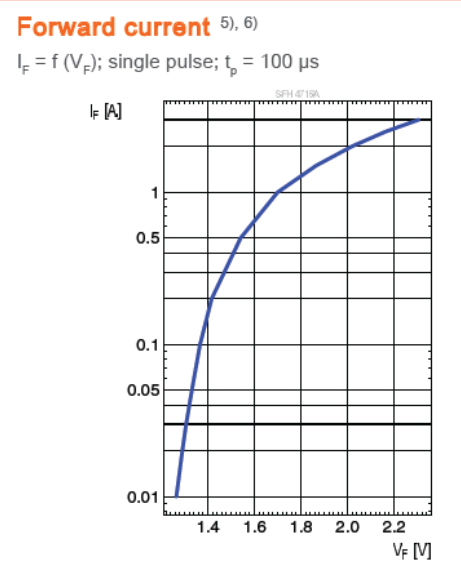
Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	75 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	11 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	1.7 V 2.2 V
Forward voltage I_F = 2 A; t_p = 100 µs	V_F	typ. max.	2.05 V 2.5 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	2.3 V 3 V
Reverse current [2] V_R = 5 V	I_R	typ. max.	0.01 µA 10 µA
Radiant intensity [1] I_F = 2 A; t_p = 100 µs	I_e	typ.	320 mW/sr
Total radiant flux [3]	Φ_e	typ.	860 mW
Total radiant flux [3] I_F = 2 A; t_p = 100 µs	Φ_e	typ.	1620 mW
Temperature coefficient of voltage	TC_V	typ.	-1 mV / K
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	9.0 K / W

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

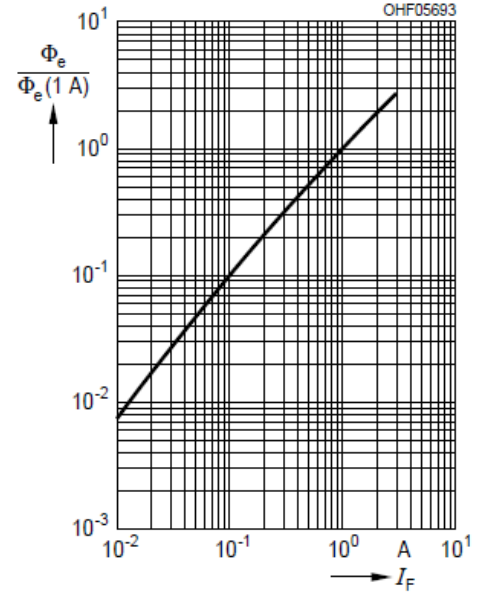
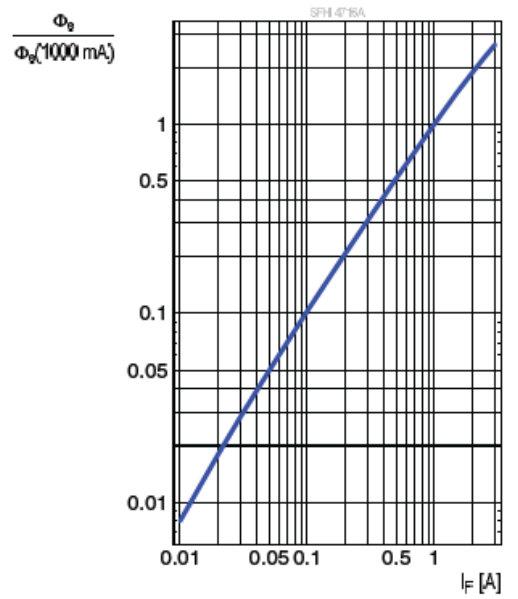
SFH 4716A Change item	Current status	New status
Forward current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4716A Change item	Current status	New status
Relative radiant flux	**Relative Total Radiant Flux** [1] *page 13* $\Phi_e/\Phi_e(1A) = f(I_F)$, $T_A = 25$ °C, Single pulse, $t_p = 100$ µs 	**Relative Total Radiant Flux** [5), 6)] $\Phi_e/\Phi_e(1000mA) = f(I_F)$; single pulse; $t_p = 100$ µs 

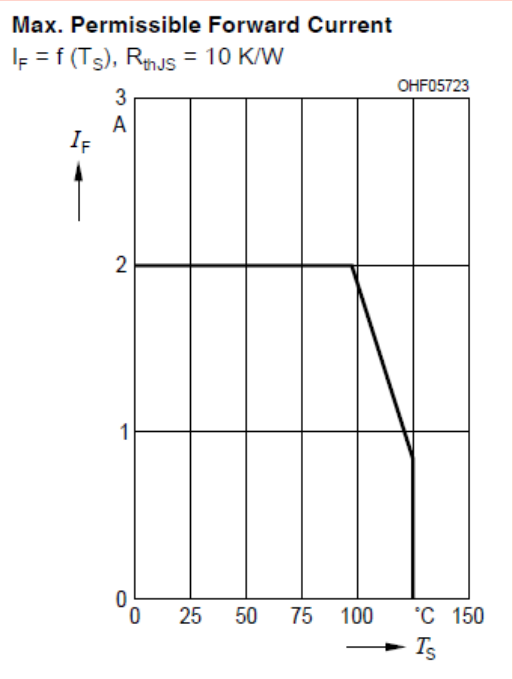
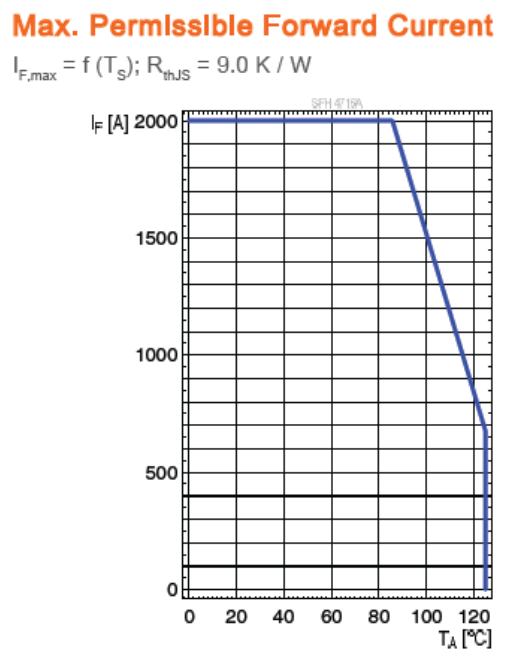
OSRAM Opto Semiconductors

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

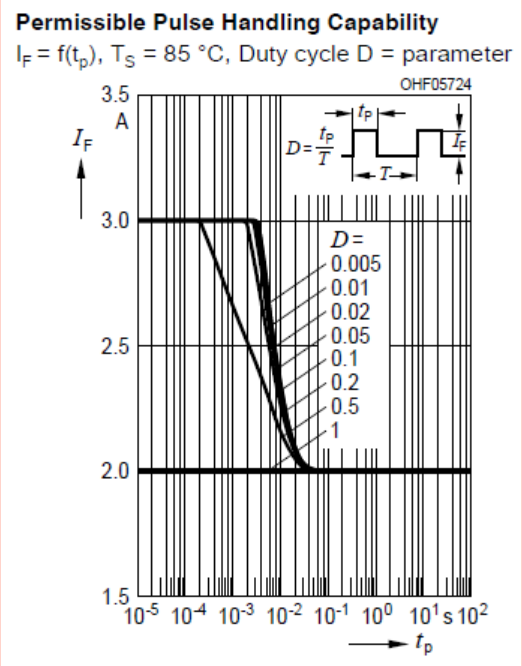
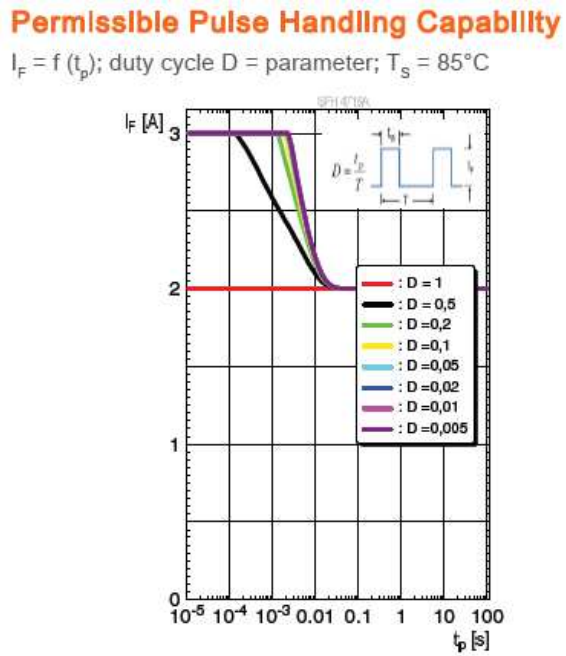
SFH 4716A Change item	Current status	New status
Max Permissible Forward Current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4716A Change item	Current status	New status
Permissible Pulse Handling Capability		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet SFH 4716AS

Current status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	75 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	11 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	3.2 V 3.6 V
Forward voltage I_F = 1.5 A; t_p = 100 µs	V_F	typ. max.	3.35 V 3.85 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	3.8 V 4.7 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Reverse voltage (ESD device) [2]	$V_{R\ ESD}$	min.	5 V
Total radiant flux [3]	Φ_e	typ.	1270 mW
Total radiant flux [3] I_F = 1.5 A; t_p = 100 µs	Φ_e	typ.	1900 mW
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	9.0 K / W

New status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

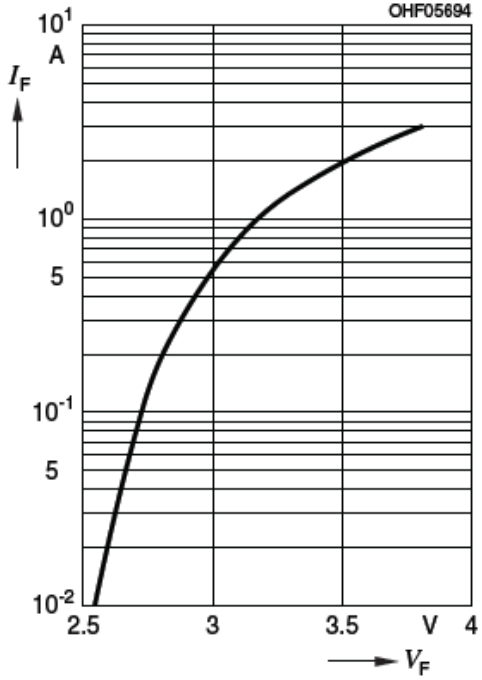
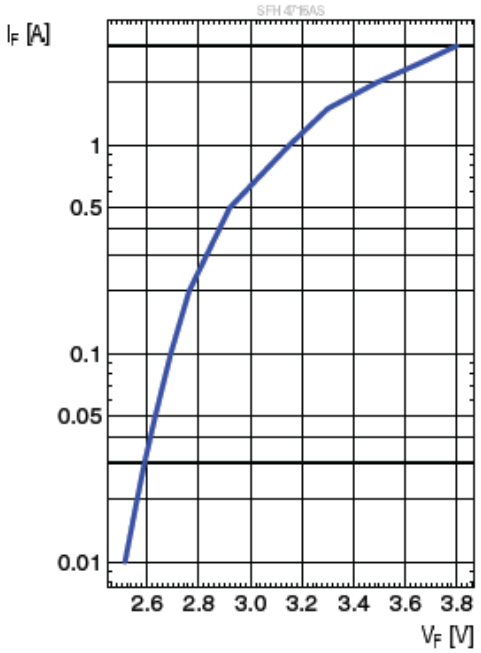
Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	75 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	12 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	15 ns
Forward voltage	V_F	typ. max.	3.15 V 3.5 V
Forward voltage I_F = 1.5 A; t_p = 100 µs	V_F	typ. max.	3.3 V 3.85 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	3.8 V 4.7 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Reverse voltage (ESD device) [2]	$V_{R\ ESD}$	min.	5 V
Radiant intensity [1] I_F = 1.5 A; t_p = 100 µs	I_e	typ.	515 mW/sr
Total radiant flux [3]	Φ_e	typ.	1530 mW
Total radiant flux [3] I_F = 1.5 A; t_p = 100 µs	Φ_e	typ.	2250 mW
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	typ. max.	5.5 K / W 9.0 K / W

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

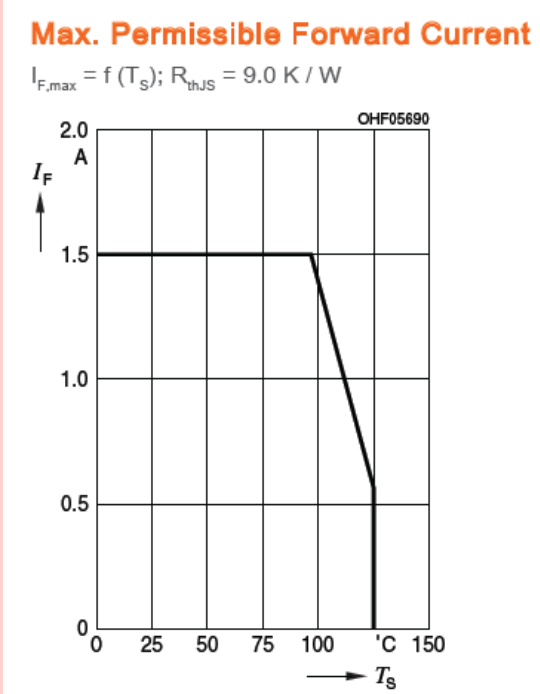
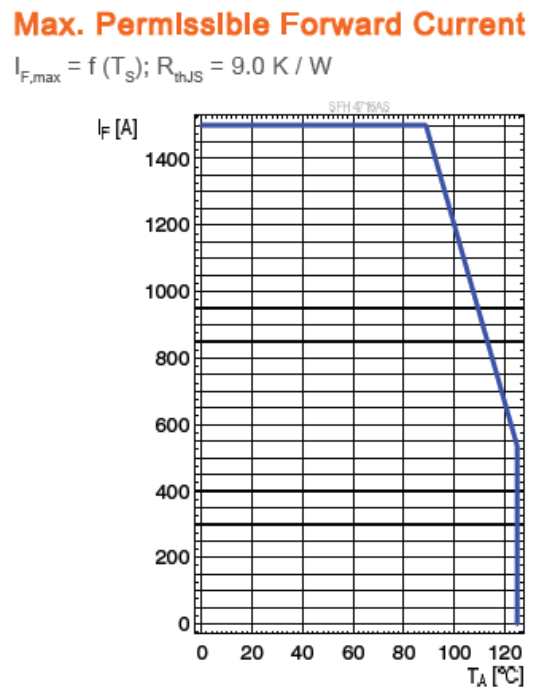
SFH 4716AS Change item	Current status	New status
Forward current	**Forward current** 5), 6) $I_F = f(V_F)$; single pulse; t_p = 100 µs 	**Forward current** 5), 6) $I_F = f(V_F)$; single pulse; t_p = 100 µs 

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4716AS Change item	Current status	New status
Max Permissible Forward Current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet SFH 4715A

Current status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	45 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	11 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	1.65 V 2.1 V
Forward voltage I_F = 2 A; t_p = 100 µs	V_F	typ. max.	1.9 V 2.5 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	2.2 V 3 V
Reverse current [2] V_R = 5 V	I_R	max. typ.	10 µA 0.01 µA
Total radiant flux [3]	Φ_e	typ.	770 mW
Total radiant flux [3] I_F = 2 A; t_p = 100 µs	Φ_e	typ.	1450 mW
Radiant intensity [1] I_F = 2 A; t_p = 100 µs	I_e	typ.	780 mW/sr
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of voltage	TC_V	typ.	-1 mV / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	10 K / W

New status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

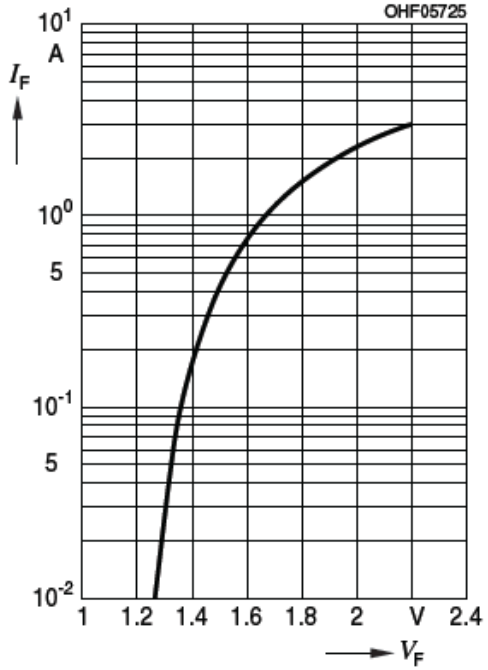
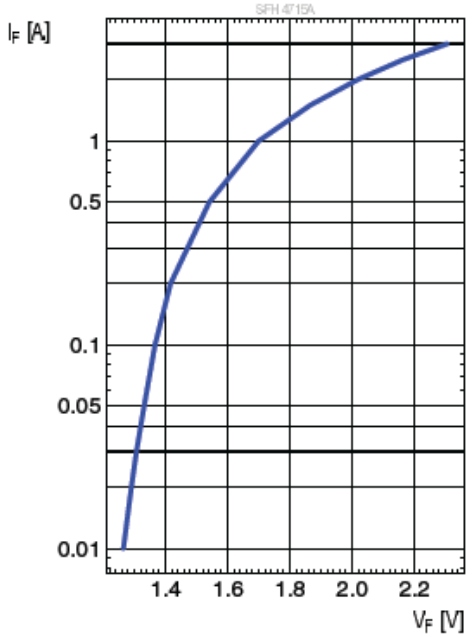
Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	45 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	11 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	1.7 V 2.2 V
Forward voltage I_F = 2 A; t_p = 100 µs	V_F	typ. max.	2.05 V 2.5 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	2.3 V 3 V
Reverse current [2] V_R = 5 V	I_R	typ. max.	0.01 µA 10 µA
Radiant intensity [1] I_F = 2 A; t_p = 100 µs	I_e	typ.	940 mW/sr
Total radiant flux [3] I_F = 1 A; t_p = 100 µs	Φ_e	typ.	860 mW
Total radiant flux [3] I_F = 2 A; t_p = 100 µs	Φ_e	typ.	1620 mW
Temperature coefficient of voltage	TC_V	typ.	-1 mV / K
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	10 K / W

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4715A Change item	Current status	New status
Forward current	**Forward current** 5), 6) $I_F = f(V_F)$; single pulse; t_p = 100 µs 	**Forward current** 5), 6) $I_F = f(V_F)$; single pulse; t_p = 100 µs 

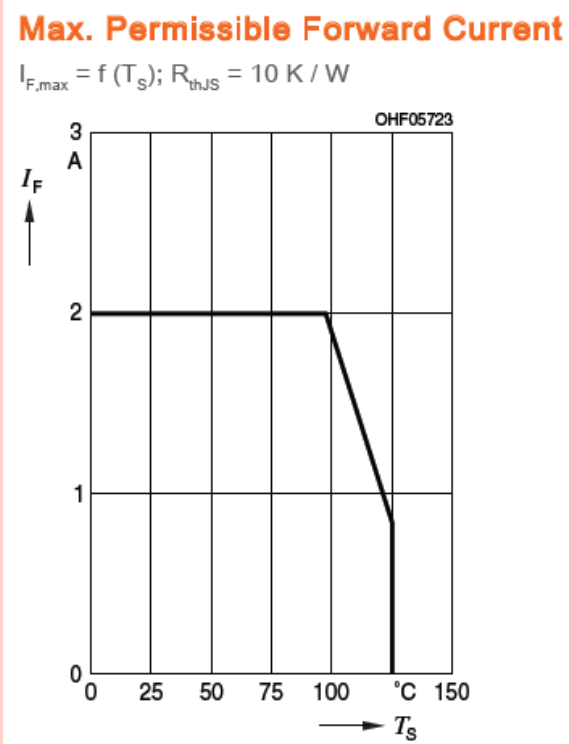
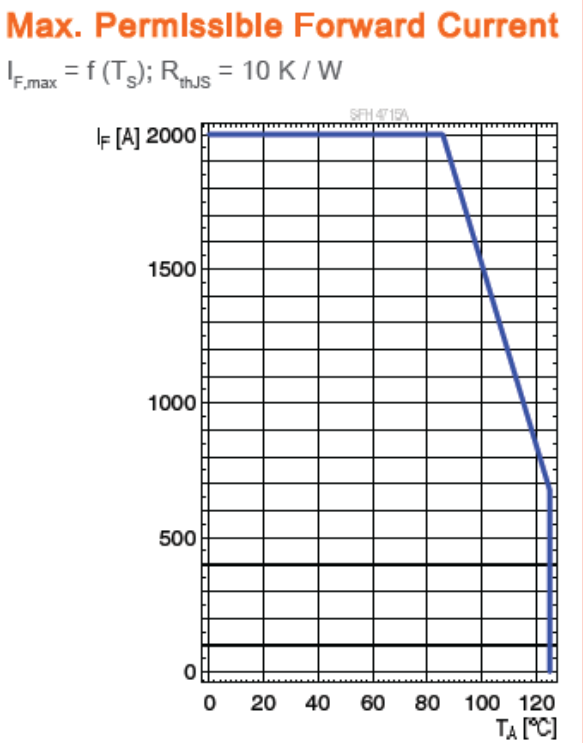
OSRAM Opto Semiconductors

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4715A Change item	Current status	New status
Max. Permissible Forward Current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet SFH 4715AS

Current status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	45 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	11 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	3.2 V 3.6 V
Forward voltage I_F = 1.5 A; t_p = 100 µs	V_F	typ. max.	3.35 V 3.85 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	3.8 V 4.7 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Reverse voltage (ESD device) [2]	$V_{R\ ESD}$	min.	5 V
Total radiant flux [3]	Φ_e	typ.	1340 mW
Total radiant flux [3] I_F = 1.5 A; t_p = 100 µs	Φ_e	typ.	2000 mW
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	9.0 K / W

New status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

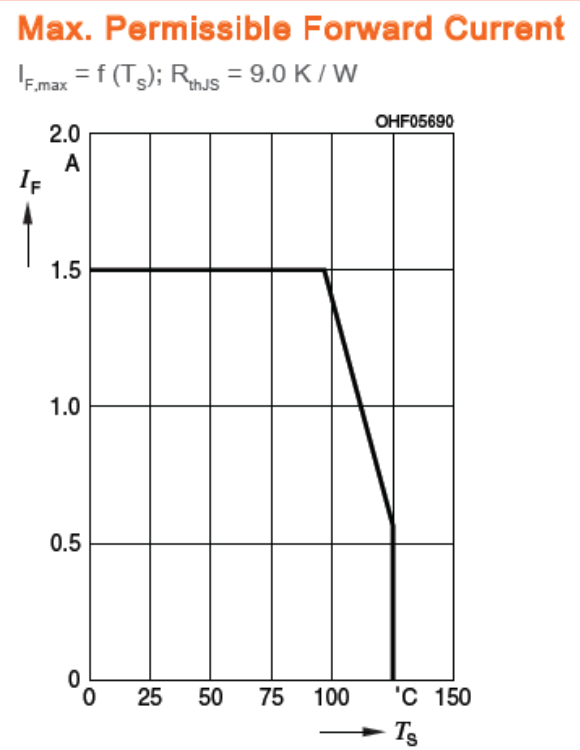
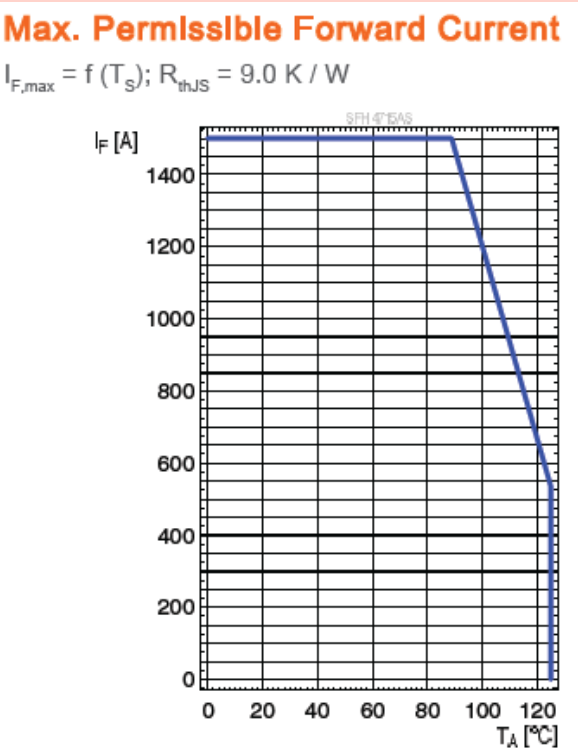
Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	40 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	12 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	15 ns
Forward voltage	V_F	typ. max.	3.15 V 3.5 V
Forward voltage I_F = 1.5 A; t_p = 100 µs	V_F	typ. max.	3.3 V 3.85 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	3.8 V 4.7 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Reverse voltage (ESD device) [2]	$V_{R\ ESD}$	min.	5 V
Radiant intensity [1] I_F = 1.5 A; t_p = 100 µs	I_e	typ.	1330 mW/sr
Total radiant flux [3]	Φ_e	typ.	1530 mW
Total radiant flux [3] I_F = 1.5 A; t_p = 100 µs	Φ_e	typ.	2250 mW
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	typ. max.	5.5 K / W 9.0 K / W

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4715AS Change item	Current status	New status
Max. Permissible Pulse Current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet SFH 4780S

Current status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	820 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	810 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	10 °
Dimensions of active chip area	L x W	typ.	0.75 x 0.75 mm x mm
Rise time (10% / 90%) I_F = 1 A; R_L = 50 Ω	t_r	typ.	8 ns
Fall time (10% / 90%) I_F = 1 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage I_F = 0.5 A; t_p = 100 µs	V_F	typ. max.	3.3 V 3.6 V
Forward voltage I_F = 1 A; t_p = 100 µs	V_F	typ.	3.6 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Reverse voltage (ESD device) [2]	$V_{R\ ESD}$	min.	45 V
Total radiant flux [3]	Φ_e	typ.	600 mW
Total radiant flux [3] I_F = 1 A; t_p = 100 µs	Φ_e	typ.	680 mW
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	25 K / W

New status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

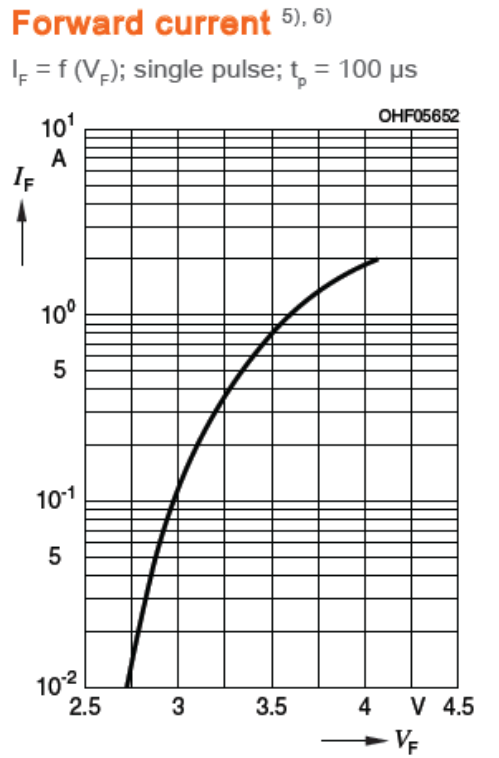
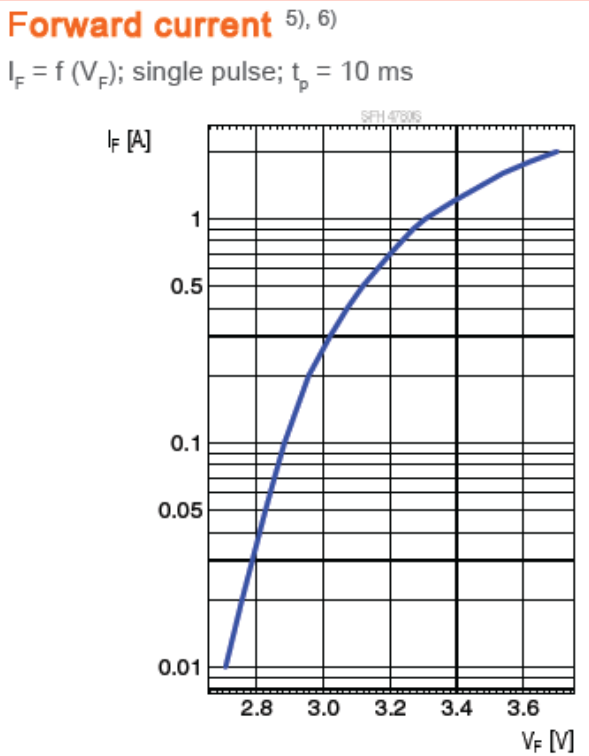
Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	820 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	810 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	10 °
Dimensions of active chip area	L x W	typ.	0.75 x 0.75 mm x mm
Rise time (10% / 90%) I_F = 1 A; R_L = 50 Ω	t_r	typ.	8 ns
Fall time (10% / 90%) I_F = 1 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage I_F = 0.5 A; t_p = 100 µs	V_F	typ. max.	3.1 V 3.6 V
Forward voltage I_F = 1 A; t_p = 100 µs	V_F	typ. max.	3.3 V 4 V
Forward voltage I_F = 2 A; t_p = 100 µs	V_F	typ. max.	3.7 V 4.9 V
Reverse voltage [2] I_R = 20 mA	V_R	max.	1.2 V
Reverse voltage (ESD device) [2]	$V_{R\ ESD}$	min.	45 V
Total radiant flux [3]	Φ_e	typ.	660 mW
Total radiant flux [3] I_F = 1 A; t_p = 100 µs	Φ_e	typ.	750 mW
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [4]	R_{thJS}	max.	25 K / W

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

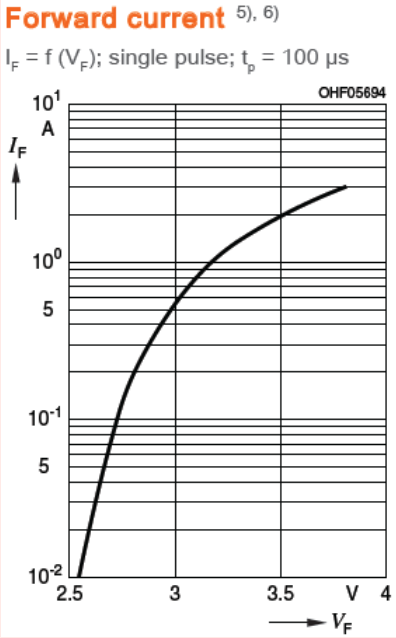
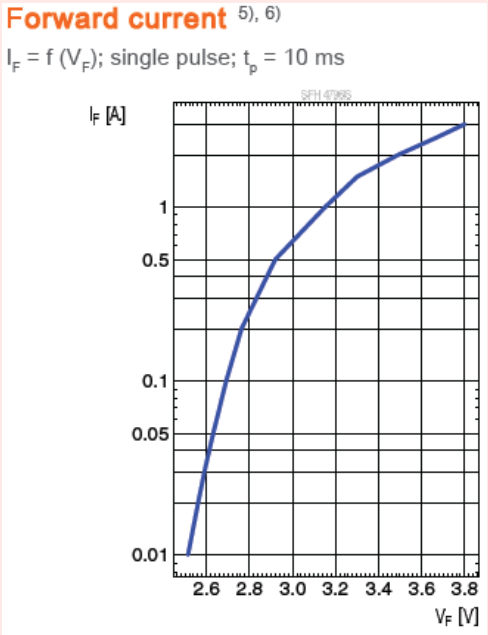
SFH 4780S Change item	Current status	New status
Forward current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4796S Change item	Current status	New status
Forward voltage	Typical: 3.2V Maximum: 3.6	Typical: 3.15V Maximum: 3.5V
Forward current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet SFH 4770S

Current status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	60 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	11 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	3.2 V 3.6 V
Forward voltage I_F = 1.5 A; t_p = 100 µs	V_F	typ. max.	3.35 V 3.85 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	3.8 V 4.7 V
Reverse current [2] V_R = 5 V	I_R	max. typ.	10 µA 0.01 µA
Radiant intensity	I_e	typ.	370 mW/sr
Radiant intensity I_F = 1.5 A; t_p = 100 µs	I_e	typ.	560 mW/sr
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [3]	R_{thJS}	max.	9.0 K / W

New status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

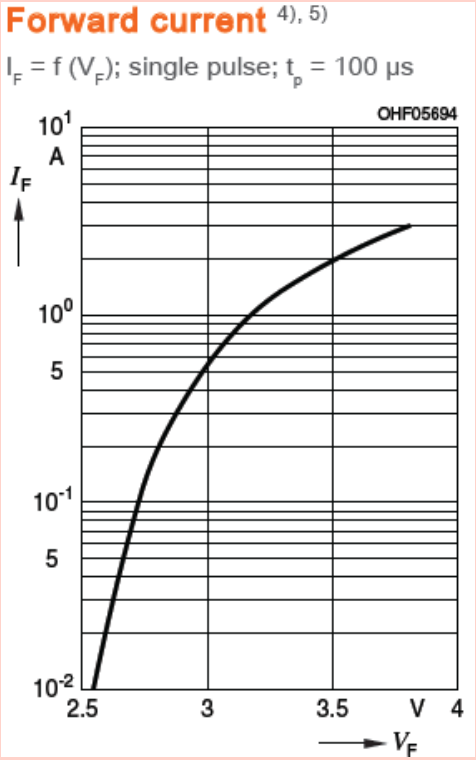
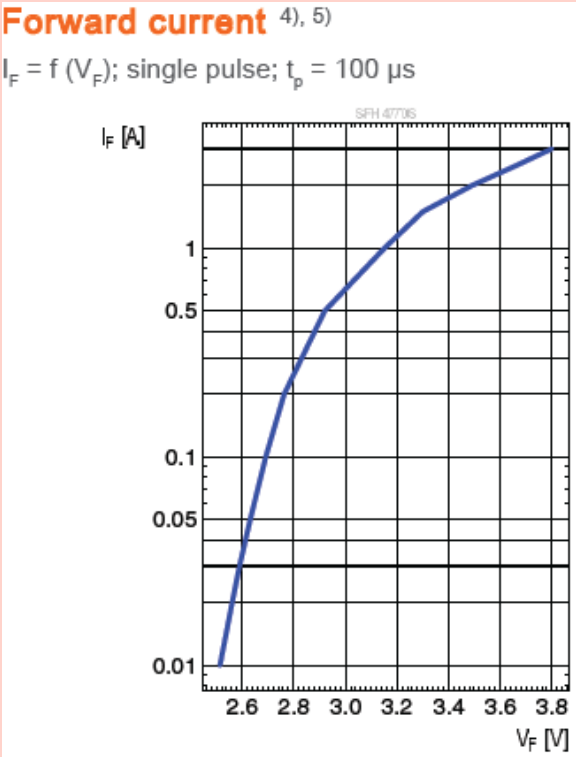
Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	60 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	12 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	15 ns
Forward voltage	V_F	typ. max.	3.15 V 3.5 V
Forward voltage I_F = 1.5 A; t_p = 100 µs	V_F	typ. max.	3.3 V 3.85 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	3.8 V 4.7 V
Reverse current [2] V_R = 5 V	I_R	typ. max.	0.01 µA 10 µA
Radiant intensity	I_e	typ.	420 mW/sr
Radiant intensity I_F = 1.5 A; t_p = 100 µs	I_e	typ.	620 mW/sr
Total radiant flux [1] I_F = 1.5 A; t_p = 100 µs	Φ_e	typ.	2000 mW
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [3]	R_{thJS}	max.	9.0 K / W

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

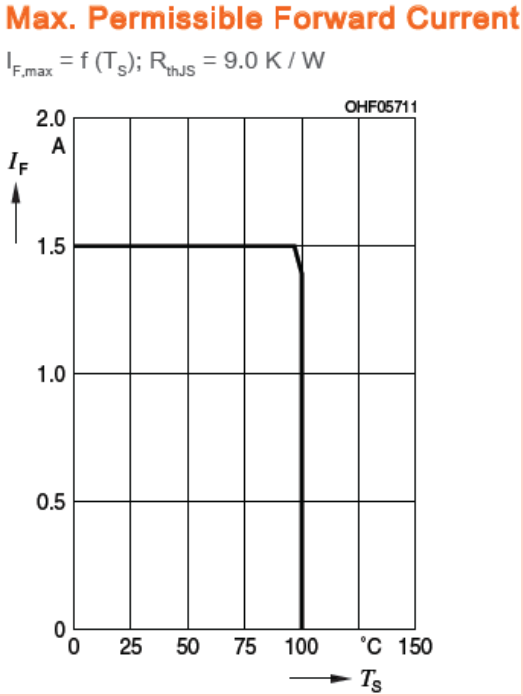
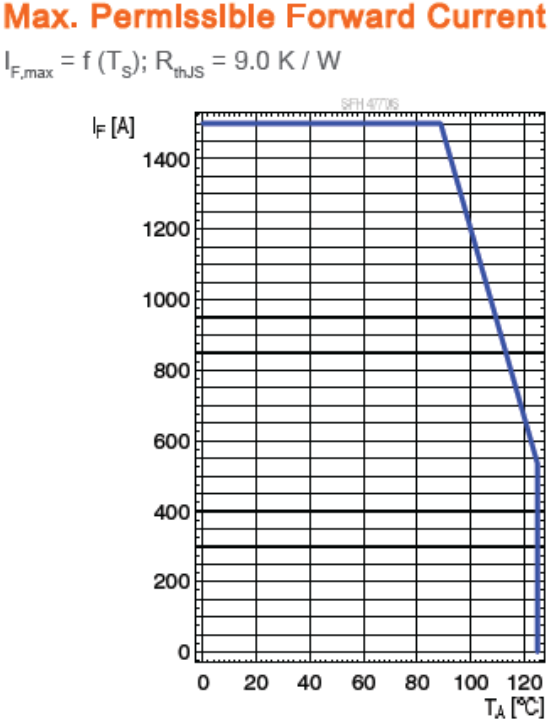
SFH 4770S Change item	Current status	New status
Forward current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

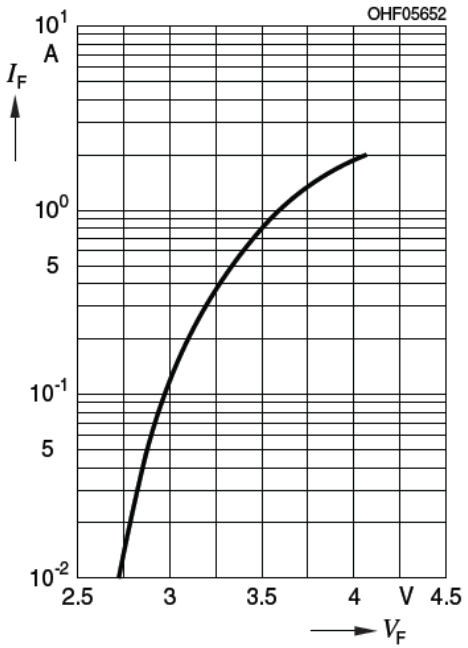
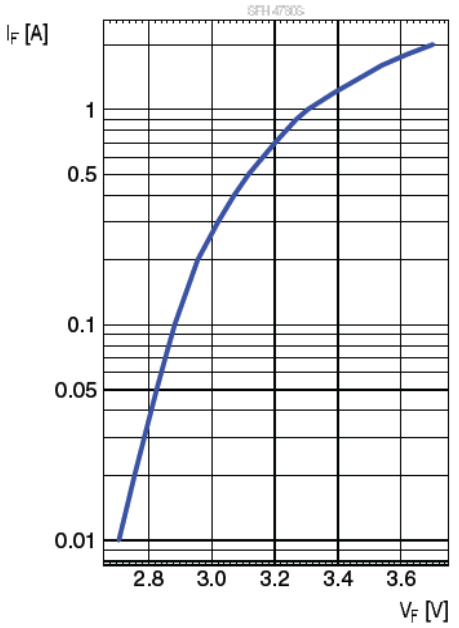
SFH 4770S Change item	Current status	New status
Max. Permissible Forward Current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4770S A01 Change item	Current status	New status
Forward current	**Forward current** 5), 6) $I_F = f(V_F)$; single pulse; t_p = 100 µs 	**Forward current** 5), 6) $I_F = f(V_F)$; single pulse; t_p = 10 ms 

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet SFH 4770S A01

Current status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	60 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_r	typ.	11 ns
Fall time (10% / 90%) I_F = 3 A; R_L = 50 Ω	t_f	typ.	14 ns
Forward voltage	V_F	typ. max.	3.2 V 3.6 V
Forward voltage I_F = 1.5 A; t_p = 100 µs	V_F	typ. max.	3.35 V 3.85 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	3.8 V 4.7 V
Reverse current [2] V_R = 5 V	I_R	max. typ.	10 µA 0.01 µA
Radiant intensity	I_e	typ.	350 mW/sr
Radiant intensity I_F = 1.5 A; t_p = 100 µs	I_e	typ.	530 mW/sr
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [3]	R_{thJS}	max.	9.0 K / W

New status

Characteristics

I_F = 1000 mA; t_p = 10 ms; T_A = 25 °C

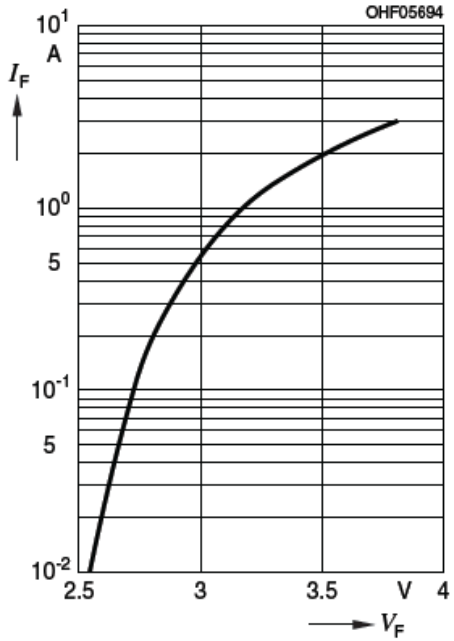
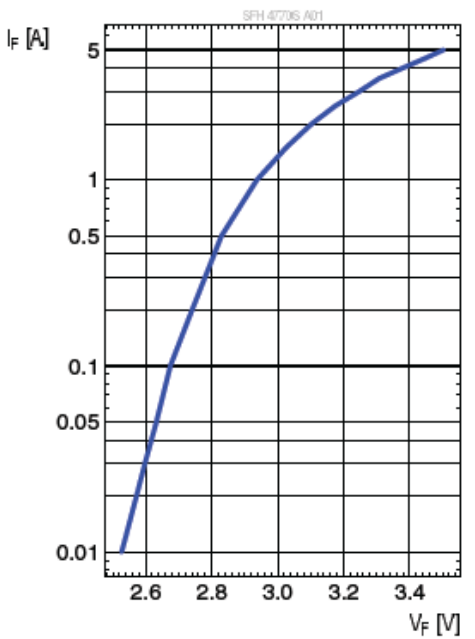
Parameter	Symbol		Values
Peak wavelength	λ_{peak}	typ.	860 nm
Centroid wavelength	$\lambda_{centroid}$	typ.	850 nm
Spectral bandwidth at 50% $I_{rel,max}$	$\Delta\lambda$	typ.	30 nm
Half angle	φ	typ.	60 °
Dimensions of active chip area	L x W	typ.	1 x 1 mm x mm
Rise time (10% / 90%) I_F = 5 A; R_L = 50 Ω	t_r	typ.	10 ns
Fall time (10% / 90%) I_F = 5 A; R_L = 50 Ω	t_f	typ.	15 ns
Forward voltage	V_F	typ. max.	2.95 V 3.4 V
Forward voltage I_F = 1.5 A; t_p = 100 µs	V_F	typ. max.	3.05 V 3.65 V
Forward voltage I_F = 3 A; t_p = 100 µs	V_F	typ. max.	3.5 V 4.5 V
Reverse current [2] V_R = 5 V	I_R	typ. max.	0.01 µA 10 µA
Radiant intensity	I_e	typ.	350 mW/sr
Radiant intensity I_F = 1.5 A; t_p = 100 µs	I_e	typ.	530 mW/sr
Total radiant flux [1] I_F = 1.5 A; t_p = 100 µs	Φ_e	typ.	1700 mW
Temperature coefficient of voltage	TC_V	typ.	-2 mV / K
Temperature coefficient of brightness	TC_I	typ.	-0.3 % / K
Temperature coefficient of wavelength	TC_λ	typ.	0.3 nm / K
Thermal resistance junction solder point real [3]	R_{thJS}	typ. max.	6.0 K / W 9.0 K / W

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

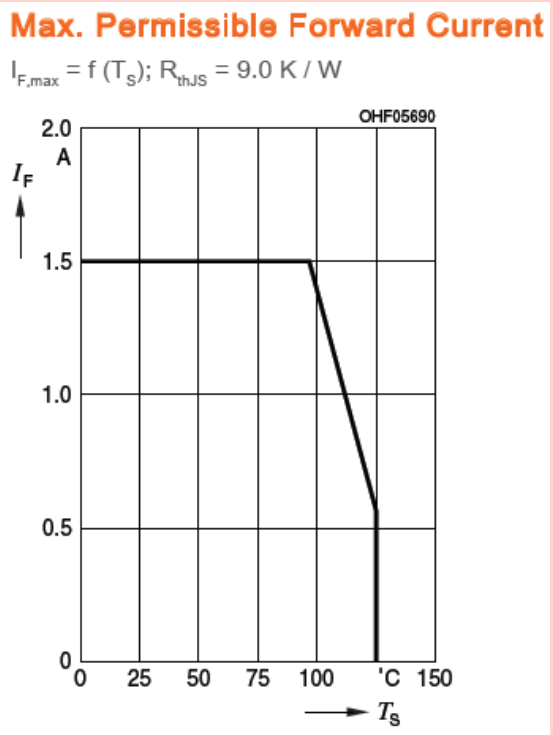
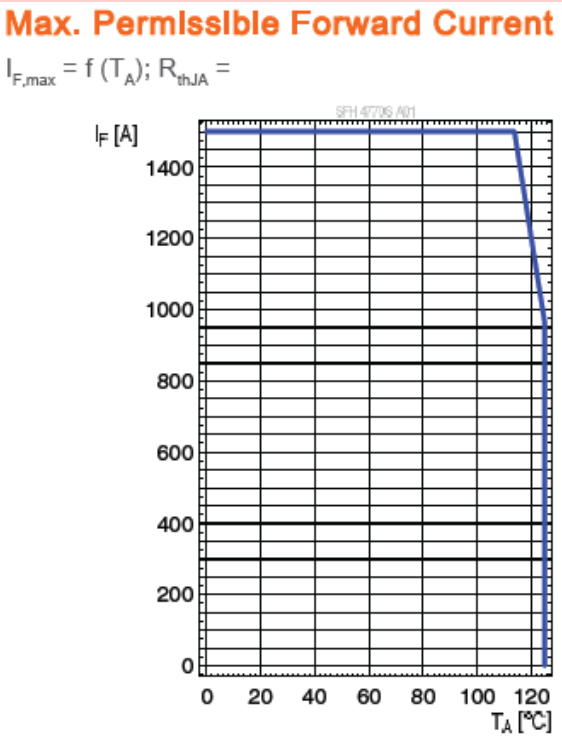
SFH 4770S A01 Change item	Current status	New status
Forward current	**Forward current** 4), 5) $I_F = f(V_F)$; single pulse; t_p = 100 µs 	**Forward current** 4), 5) $I_F = f(V_F)$; single pulse; t_p = 100 µs 

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

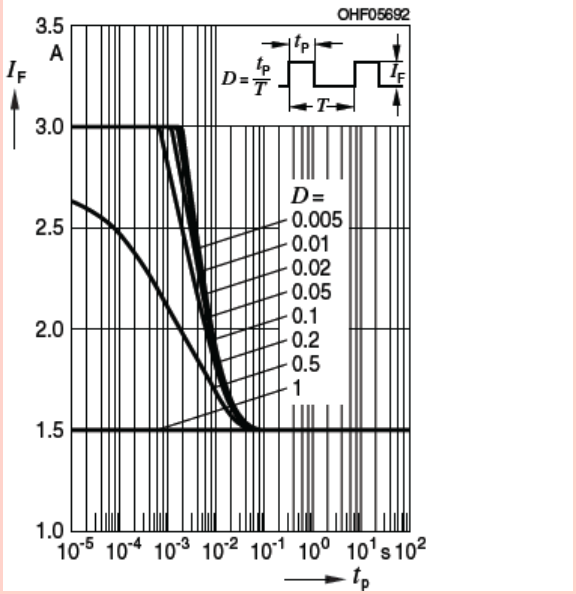
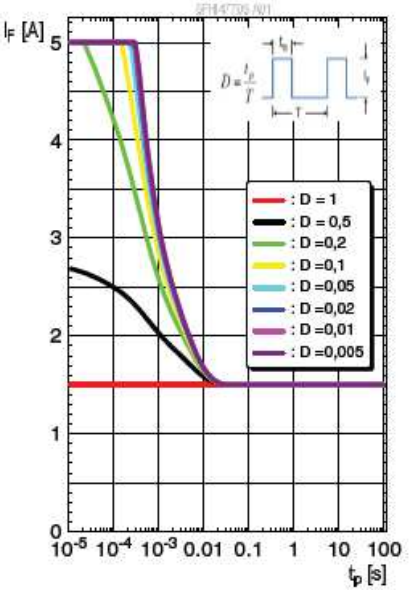
SFH 4770S A01 Change item	Current status	New status
Max. Permissible Forward Current		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in datasheet

SFH 4770S A01 Change item	Current status	New status
Permissible Pulse Handling Capability	**Permissible Pulse Handling Capability** $I_F = f(t_p)$; duty cycle D = parameter; T_S = 85°C 	**Permissible Pulse Handling Capability** $I_F = f(t_p)$; duty cycle D = parameter; T_S = 85°C 

OSRAM Opto Semiconductors

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Changes in the datasheets: Up-dated Datasheet Version

Product type	Datasheet version before PCN	Datasheet version after PCN
SFH 4703AS	0.1	0.2
SFH 4716A	1.3	1.4
SFH 4716AS	1.6	1.7
SFH 4715A	1.5	1.6
SFH 4715AS	1.4	1.5
SFH 4780S	1.1	1.2
SFH 4796S	1.0	1.1
SFH 4770S	1.3	1.4
SFH 4770S A01	1.0	1.1

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.

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

List of affected products

OSLON Black	OSLUX	Synios
SFH 4703 AS	SFH 4780S	SFH 4770S
SFH 4716A	SFH 4796S	SFH 4770S A01
SFH 4716AS		
SFH 4715A		
SFH 4715AS		

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

PCN Samples

OSLON Black	OSLUX	Synios
SFH 4703 AS	SFH 4780S	SFH 4770S
SFH 4716A	SFH 4796S	SFH 4770S A01
SFH 4716AS		
SFH 4715A		
SFH 4715AS		

available

on request

OS-PCN-2019-015-A

Brightness improvement for IR high power devices

QUALITY FIRST

Time schedule

for <u>PCN material</u> (after implementation of change):	Final qualification report	15.05.2019
	Samples available	available
	Intended Start of delivery	01.08.2019 *)

*) or earlier if released by customer and upon mutual agreement

for <u>Pre-PCN material</u> (prior to implementation of change):	Last time order date (LTO)	31.12.2019 **)
	Last time delivery date (LTD)	30.06.2020 ***)

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

***) planned last date for delivery of products of current status

<u>Note:</u>

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.

OSRAM
Opto Semiconductors

Products Affected by Product Change Notification

Number: *OS-PCN-2019-015-A*
Name: *Brightness Improvements for IR High Power Devices*
Release Date: *4/8/2019*
Response Due Date: *5/15/2019*
Implementation Date: *8/1/2019*

Product	*QNumber*	*QNumber Description*	*Part Number*
SFH 4703AS	Q65112A1370	SFH 4703AS	SFH 4703AS
SFH 4715A	Q65111A6159	SFH 4715A	SFH 4715A
	Q65111A8096	SFH 4715A-CBDA	SFH 4715A-CBDA
SFH 4715AS	Q65111A6857	SFH 4715AS	SFH 4715AS
	Q65111A9722	SFH 4715AS-FR	SFH 4715AS-FR
	Q65112A0262	SFH 4715AS-EA	SFH 4715AS-EA
SFH 4716A	Q65111A6158	SFH 4716A	SFH 4716A
SFH 4716AS	Q65111A6856	SFH 4716AS	SFH 4716AS
	Q65111A8237	SFH 4716AS-BBCA	SFH 4716AS-BBCA
	Q65111A9721	SFH 4716AS-FR	SFH 4716AS-FR
SFH 4770S	Q65111A9246	SFH 4770S	SFH 4770S
SFH 4770S A01	Q65112A0523	SFH 4770S A01	SFH 4770S A01
SFH 4780S	Q65111A6054	SFH 4780S	SFH 4780S
SFH 4796S	Q65112A0372	SFH 4796S	SFH 4796S