Product Change Notification

PCN26-11-Rev A_AP & APB series – Blue LED change

C&K
2 rue Berthollet - B.P. 359 F-39105 Dole Cedex - France
Tel :+33 (0)3 84 72 81 12 www.ckswitches.com

Document subject to change without prior notice

Document revision

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1. Purpose

C&K has been notified by its supplier, the end of production of several LEDs.
This discontinuation from KINGBRIGHT (supplier A), without direct replacement proposal, is leading C&K to modify its AP & APB lighted series by using the closest replacement from the market.
C&K switches selected ORMSEN (supplier B) to replace the Blue LED in its products.
The impact for our customers will be some differences in the lighting characteristics.

2. Overview

2.1 Change definition

Supplier A: KINGBRIGHT manufacturer of the Blue LED, reference **WP964-CKC32.**

Selection Guide

Part No.	Dice	Lens Type	Iv (mcd) [2] @ 20mA		Viewing Angle [1]
			Min.	Typ.	2θ1/2
WP964-CKC32	Blue (InGaN)	Water Clear	700	1500	30°

Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity/ luminous Flux: +/-15%.
3. Luminous intensity value is traceable to the CIE127-2007 compliant national standards.

Electrical / Optical Characteristics at TA=25°C

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
λpeak	Peak Wavelength	Blue	460		nm	IF=20mA
λD [1]	Dominant Wavelength	Blue	465		nm	IF=20mA
Δλ1/2	Spectral Line Half-width	Blue	25		nm	IF=20mA
C	Capacitance	Blue	100		pF	VF=0V;f=1MHz
VF [2]	Forward Voltage	Blue	3.3	4	V	IF=20mA
IR	Reverse Current	Blue		50	uA	VR = 5V

Absolute Maximum Ratings at TA=25°C

Parameter	Blue	Units
Power dissipation	120	mW
DC Forward Current	30	mA
Peak Forward Current [1]	150	mA
Reverse Voltage	5	V
Operating/Storage Temperature	-40°C To +85°C	
Lead Solder Temperature [2]	260°C For 3 Seconds	
Lead Solder Temperature [3]	260°C For 5 Seconds	

Supplier B: ORMSEN manufacturer of the Blue LED, reference **OS-RSUB234C-TR1(CK)**.
The color, luminous intensity, the viewing angle and ratings of new Blue LED are very close to the existing one.

Device Selection Guide

Chip Materials	Emitted Color	Resin Color
InGaN	Blue	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	IF	30	mA
Peak Forward Current (Duty 1/10 @ 1KHZ)	IFP	100	mA
Reverse Voltage	VR	5	V
Power Dissipation	Pd	100	mW
Operating Temperature	Topr	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +85	℃
Soldering Temperature	Tsol	260 ℃ for 5 sec.	

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	700	1500	-----	mcd	IF=20mA
Viewing Angle	2θ1/2	-----	30	-----	deg	IF=20mA
Peak Wavelength	λp	-----	465	-----	nm	IF=20mA
Dominant Wavelength	λd	-----	470	-----	nm	IF=20mA
Spectrum Radiation Bandwidth	Δλ	-----	28	-----	nm	IF=20mA
Forward Voltage	VF	2.6	3.0	3.6	V	IF=20mA
Reverse Current	IR	-----	-----	10	μA	VR=5V

3. Impact of Change and Qualification

3.1 Impact of Change:

There is no change to the form, fit and function of the switch.

3.2 Qualification method:

As the modification only affects the LED and its integration in the switch, the qualification focuses solely on the LED performance:

- Luminosity, Chromaticity Coordinates
- Endurance test
- Climatic tests
- Salt spray test
- Soldering test

The qualification has been completed in C&K, test report is available upon request.

Samples for qualification are already available upon request.

4. Part numbers affected

All item featuring **Blue LED** are affected by this notification.

Material N°	Material Description
AP0031	SWITCH AP4N007TZBE SS-FORM
AP2C207TWBE	SWITCH AP2C207TWBE
AP2D207SZBE	SWITCH AP2D207SZBE
AP2D207TZBE	SWITCH AP2D207TZBE
AP2E207SWBE	SWITCH AP2E207SWBE
AP2E207SZBE	SWITCH AP2E207SZBE
AP2E207TZBE	SWITCH AP2E207TZBE
AP2N007SZBE	SWITCH AP2N007SZBE
AP2N007TWBE	SWITCH AP2N007TWBE
AP2N007TZBE	SWITCH AP2N007TZBE
AP4C207TZBE	SWITCH AP4C207TZBE
AP4D207SWBE	SWITCH AP4D207SWBE
AP4D207SZBE	SWITCH AP4D207SZBE
AP4D207TZBE	SWITCH AP4D207TZBE
AP4D307TWBE	SWITCH AP4D307TWBE
AP4E207SZBE	SWITCH AP4E207SZBE
AP4E207TWBE	SWITCH AP4E207TWBE
AP4E207TZBE	SWITCH AP4E207TZBE
AP4E307TZBE	SWITCH AP4E307TZBE
AP4E407TZBE	SWITCH AP4E407TZBE
AP4E607TZBE	SWITCH AP4E607TZBE
AP4E707SZBE	SWITCH AP4E707SZBE
AP4E707TZBE	SWITCH AP4E707TZBE
AP4E907TZBE	SWITCH AP4E907TZBE
AP4N007SWBE	SWITCH AP4N007SWBE
AP4N007SZBE	SWITCH AP4N007SZBE
AP4N007TWBE	SWITCH AP4N007TWBE
AP4N007TZBE	SWITCH AP4N007TZBE

Material N°	Material Description
APB0001	SWITCH APB4E07SWBE000 SS-FORM
APB2E07SZBE000	SWITCH APB2E07SZBE000
APB2E07SZBE001	SWITCH APB2E07SZBE001
APB2E07SZBE002	SWITCH APB2E07SZBE002
APB2E07SZBE003	SWITCH APB2E07SZBE003
APB2E07SZBE004	SWITCH APB2E07SZBE004
APB2E07SZBE005	SWITCH APB2E07SZBE005
APB2E07SZBE006	SWITCH APB2E07SZBE006
APB2E07SZBE007	SWITCH APB2E07SZBE007
APB2E07SZBE008	SWITCH APB2E07SZBE008
APB2E07SZBE009	SWITCH APB2E07SZBE009
APB2E07SZBE010	SWITCH APB2E07SZBE010
APB2E07TWBE000	SWITCH APB2E07TWBE000
APB2E07TZBE000	SWITCH APB2E07TZBE000
APB2E07TZBE001	SWITCH APB2E07TZBE001
APB2E07TZBE002	SWITCH APB2E07TZBE002
APB2E07TZBE003	SWITCH APB2E07TZBE003
APB2E07TZBE004	SWITCH APB2E07TZBE004
APB2E07TZBE005	SWITCH APB2E07TZBE005
APB2E07TZBE006	SWITCH APB2E07TZBE006
APB2E07TZBE007	SWITCH APB2E07TZBE007
APB2E07TZBE008	SWITCH APB2E07TZBE008
APB2E07TZBE009	SWITCH APB2E07TZBE009
APB2E07TZBE010	SWITCH APB2E07TZBE010
APB4E07SWBE000	SWITCH APB4E07SWBE000
APB4E07SWBE009	SWITCH APB4E07SWBE009
APB4E07SZBE000	SWITCH APB4E07SZBE000
APB4E07SZBE001	SWITCH APB4E07SZBE001
APB4E07SZBE002	SWITCH APB4E07SZBE002
APB4E07SZBE003	SWITCH APB4E07SZBE003
APB4E07SZBE004	SWITCH APB4E07SZBE004
APB4E07SZBE005	SWITCH APB4E07SZBE005
APB4E07SZBE006	SWITCH APB4E07SZBE006
APB4E07SZBE007	SWITCH APB4E07SZBE007
APB4E07SZBE008	SWITCH APB4E07SZBE008
APB4E07SZBE009	SWITCH APB4E07SZBE009
APB4E07SZBE010	SWITCH APB4E07SZBE010
APB4E07TWBE008	SWITCH APB4E07TWBE008
APB4E07TZBE000	SWITCH APB4E07TZBE000
APB4E07TZBE001	SWITCH APB4E07TZBE001
APB4E07TZBE002	SWITCH APB4E07TZBE002
APB4E07TZBE003	SWITCH APB4E07TZBE003
APB4E07TZBE004	SWITCH APB4E07TZBE004
APB4E07TZBE005	SWITCH APB4E07TZBE005
APB4E07TZBE006	SWITCH APB4E07TZBE006
APB4E07TZBE007	SWITCH APB4E07TZBE007
APB4E07TZBE008	SWITCH APB4E07TZBE008
APB4E07TZBE009	SWITCH APB4E07TZBE009
APB4E07TZBE010	SWITCH APB4E07TZBE010

5. Date of application

Effective immediately. There is no remaining stock of LEDs WP964-CKC32 from Supplier A).
All finished products are now manufactured using LEDs OS-RSUB234C-TR1(CK) from Supplier B.

6. Conditions of application

Pricing and stock handling policy:

- Pricing: Any pricing and other sales conditions remain valid.
- Stock handling: no obsolescence and no specification modification are applied on any P/N. No return or scrap for obsolescence will be accepted

7. Customer qualification

C&K recommends its customers to carry on the lighting compatibility check and qualifications they feel necessary to make sure that they will be ready at the date of application. Switching characteristics are not modified in order to minimize the customer impact and make easier the modification acceptation.

8. Acknowledgement

We kindly ask you to acknowledge receipt of this information to your sales representative so C&K can start planning the phase in – out process accordingly.

Please forward your requirements in terms of samples & qualification files at the following email address: lguan@Littelfuse.com

9. Support

For any question, please contact your sales representative