

Product change notification

PCN10-6-K6 & K12

Document revision

Revision	Date	Description	Author
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1. Purpose

C&K Components has been notified by its LED supplier, OSRAM, the end of production of several LEDs used in K6 and K12 switches.

This discontinuation from OSRAM, without direct replacement proposal, is leading C&K Components to modify its K6 and K12 lighted series by using some other LEDs from the market with the closest characteristics. The impact for our customers will be some slight differences in the backlight characteristics (colour, luminous intensity, power supply...).

2. Change definition

2.1 Overview

Most of the LEDs used by C&K in the K6 and K12 key switches are impacted by this discontinuation from OSRAM. Please find hereafter the list of impacted LEDs:

- (C&K LED code → corresponding OSRAM PN)
- L302 → OSRAM LW 3333-S1T2-6K7L
- L303 → OSRAM LW 3333-S1T2-8K8L
- L306 → OSRAM LG 3360-K
- L315 → OSRAM LO 3340-N
- L316 → OSRAM LP 3340-L
- L327 → OSRAM LY 3360-K
- L328 → OSRAM LB 3356-FH
- L347 → OSRAM LY 3336-S
- L352 → OSRAM LS 3360-K
- L354 → OSRAM LS K376-S

For each of these LEDs, C&K is proposing some replacement LED reference by selecting some other standard LED from the market with the closest characteristics: dimensions, colour, luminous intensity, power supply...

The LED is the only part that will be change in the switches. All the other parts will remain unchanged.

2.2 Affected Part numbers

The table in annex 1 is showing the impacted K6 and K12 part numbers as well as the current LED reference and the replacement LED proposed by C&K.

3. Change impact and qualification method

3.1 *Impact of changes*

The LED is the only spare part to be changed and apart from this the internal construction is not modified. Therefore, all environmental and switching (electrical and mechanical) characteristics remain unchanged.

The manufacturing & quality processes, location and procedures remain also unchanged.

C&K Components has identified some LED, from other suppliers, similar to the OSRAM ones however they are not 100% identical. The consequence is some differences regarding the backlight parameters (color, luminous intensity, power supply) and the outer dimensions.

The tables in annex 2 show a direct comparison between the OSRAM LED and the replacement proposed by C&K. The detailed datasheet of these LED are attached to this PCN.

3.2 *Qualification method*

As the modification is only impacting the LED and its integration to the switch, the qualification proceeds as follows:

- Soldering test
- Climate tests (cold and hot storage, cyclic humidity, thermal shocks...)
- Mechanical resistance (vibrations, shocks...)

(Detailed qualification plan is available upon demand)

4. Application

4.1 *Overview*

In its Discontinuation notification, OSRAM offers the possibility of a last time buy. The last order must be placed by C&K no later than December 31st 2010.

This allows C&K to propose a last buy on those K6 and K12 switches in their current configuration. However, last switches orders must be received by C&K no later than December 1st 2010. After that, C&K will be able to provide those K6 and K12 switches in their current definition till end of 2011.

4.2 *Date of application*

- Date of last order: December 03rd 2010
- Date of last delivery: December 31st 2011
- This modification will be implemented in production on January 1st 2012

4.3 *Ordering, pricing and stock handling policy*

- Ordering: Some new P/N should be issued for the products with the new LEDs in order to avoid any mix
- Pricing: any pricing and other sales conditions will have to be updated according to the new LED choice
- Stock handling: no obsolescence and no specification modification are applied on any P/N.
- No return or scrap for obsolescence will be accepted.

4.4 *Customer qualification*

We recommend to our customers to carry on the necessary backlight compatibility check and qualifications they feel necessary to make sure that they will be ready at the date of application. We haven't modified the switching characteristics in order to minimize the customer impact and make easier the modification acceptance.

For any reason, if you evaluate that your acceptance will be released after the date of application, you have to notify C&K components before the last order date. Without this notification, the C&K will not be able to ensure to cover needs after 2011.

5. Acknowledgement

We recommend acknowledging this PCN as well as 2010 forecast to your sales representative no later than November 19th 2010.

Please forward your requirements in terms of samples & qualification files at the following email address: rodolphe.gje@coactive-tech.com.

6. Support

For any question, please contact your sales representative

Annex 1: Affected K6 & K12 part numbers
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List of affected K6 & K12 Part numbers

C&K LED code	Affected part number	Color	Current LED reference	Replacement LED proposal
L302	7G5005C0008_K6SL WH 1.5 5N L302 TRS SD	White	OSRAM LW 3333-S1T2 6K7L (rank S1T2 - 6K7L)	Kingbright L-934QWC-D
	833093-1205_K6SL WH 1.5 5N L302 SD			
	833093-1215_K6SL WH 1.5 5N L302 TR SD			
	7G5006C0002_K12PL WH 1 5N L302			
	7G5006C0008_K12GOL WH 1.5 6/12N L302			
L303	844032-1200_K12PL WH 1.5 5N L302	White	OSRAM LW 3333-S1T2 8K8L (rank S1T2 - 8K8L)	Kingbright L-934QWC-D
	833063-1300_K6FL WH 1.5 4N L303			
	844032-0400_K12PL WH 1.1 3.5N L303			
	844032-1400_K12PL WH 1.5 3.5N L303			
	844032-4200_K12PL WH 1.3 5N.5 L303			
L306	844432-1500_K12GOL WH 1.5 4/8.5N L303	Green	OSRAM LG 3360-K (rank K1L2)	Kingbright L-7104GD
	7G5006C0009_K12GOL GN 1.5 6/12N L306			
	833033-1102_K6BL GN 1.5 2N L306 OD			
	833033-1209_K6BL GN 1.5 5N L306			
	833033-1401_K6BL GN 1.5 3N L306			
	833093-1401_K6SL GN 1.5 3N L306 PAL SD			
	833093-1405_K6SL GN 1.5 3N L306 SD			
	844-0360-201_K12PL GN 1 5N L306			
	844036-0201_K12PL GN 1 5N L306			
	844036-1201_K12PL GN 1.5 5N L306			
	844236-0201_K12AL GN 1 5N L306			
L315	833033-1202_K6BL OG 1.5 5N L315	Orange	OSRAM LO 3340-N (rank M1N2)	Kingbright L-7104NT
	833033-1210_K6BL OG 1.5 5N L315 PAL			
	833033-1400_K6BL OG 1.5 3N L315 PAL			
	833033-1407_K6BL OG 1.5 3N L315			
	833093-0202_K6SL OG 1 5N L315 KARTON SD			
	833093-1101_K6SL OG 1.5 2N L315 OD PAL SD			
	844034-0001_K12PL OG 1 1.5N OD L315			
	844034-1200_K12PL OG 1.5 5N L315			
L316	833033-1108_K6BL PG 1.5 2N L316 OD	Green	OSRAM LP 3340-L (rank K1L2)	Kingbright L-7104PGT
	833033-1208_K6BL PG 1.5 5N L316 PAL			
	833033-1404_K6BL PG 1.5 3N L316			
	833153-1204_K6FN PG 1.5 5N L316			
L327	7G5005C0005_K6SL YE 1 5N L327 TR SD	Yellow	OSRAM LY 3360-K (rank K1L2)	Kingbright L-7104YD
	833033-0201_K6BL YE 1 5N L327			
	833033-0203_K6BL YE 1 5N L327 PAL-BD			
	833033-1104_K6BL YE 1.5 2N L327 OD PAL			
	833033-1105_K6BL YE 1.5 2N L327 OD			
	833033-1203_K6BL YE 1.5 5N L327			
	833033-1406_K6BL YE 1.5 3N L327			
	833063-1202_K6FL YE 1.5 5N L327			
	833093-0201_K6SL YE 1 5N L327 PAL SD			
	833093-1203_K6SL YE 1.5 5N L327 TR SD			
	833113-1301_K6BN YE 1.5 4N L327 PAL			
	833153-1202_K6FN YE 1.5 5N L327			
	844037-0201_K12PL YE 1 5N L327			
	844037-1201_K12PL YE 1.5 5N L327			
	844237-0202_K12AL YE 1 5N L327			
	844437-1341_K12GOL YE 1.5 6/12N L327 PAL			
844437-1344_K12GOL YE 1.5 6/12N L327				
844637-0202_K12DL YE 1 5N L327				
L328	833033-1109_K6BL OG 1.5 2N L335 OD	Blue	OSRAM LB 3356-FH (rank K2M1)	Kingbright L-7104QBW-D
	833033-1408_K6BL OG 1.5 3N L335			
L347	7G5005C0009_K6SL YE 1.5 5N L347 TRS SD	Yellow	OSRAM LY 3336-S (rank S1T2)	Kingbright L-7104SYCK
	833093-1208_K6SL YE 1.5 5N L347 SD			
	833093-1402_K6SL YE 1.5 3N L347 PAL SD			
L352	833033-1101_K6BL RD 1.5 2N L352 OD	Red	OSRAM LS 3360-K (rank K1L2)	Kingbright L-7104ID
	833033-1206_K6BL RD 1.5 5N L352			
	833033-1405_K6BL RD 1.5 3N L352			
	833033-1409_K6BL RD 1.5 3N L352 PAL			
	833103-1201_K6BM RD 1.5 5N L352			
	833103-1402_V10_K6BM RD 1.5 3N L352 PAL			
844035-0200_K12PL RD 1 5N L352				
L354	833065-1200_K6FL RD 1.5 5N L354	Red	OSRAM LS K376-S (rank S1U2)	Kingbright L-1334SURK-DP
	833065-1200_K6FL SR 1.5 5N L354			

<h2>Annex 2: Impact of changes</h2>



Replacement reference proposal for obsolete OSRAM LED

C&K LED code	Color	LED supplier	Reference	Wave length	Luminous intensity (mcd)	Luminous Flux Min (lm)	LED diameters	LED height	Forward Voltage (V)
L328	Blue	OSRAM	LB 3356-FH	465 (DOM) 428 (PEAK) 10 mA	9-22.4 mcd 10 mA	32-80 typ 10 mA	2.8+/-0.1 3.24+/-0.15	5.9+/-0.2	3.5 (TYP) 4.1 (MAX) 10mA
		Kingbright	L-7104QBW-D	468 (Peak) 470 (Dom) 20 mA	480 (Min) 1100 (Typ) 20 mA	32 (Min) 80 (Max)	2.9 +/- 0.25 3.2 +/- 0.25	5.4 +/- 0.5	3.5 (Typ) 4 (Max) 20 mA
L306	Green	OSRAM	LG 3360-K	572 (PEAK) 570 (DOM TYP) 10 mA	7.1 - 18mcd 10 mA	22-45 (TYP) 10 mA	2.8+/-0.1 3.25+/-0.15	5.9+/-0.2	2 (TYP) 2.5 (MAX) 10mA
		Kingbright	L-7104GD	565 (Peak) 568 (Dom) 20 mA	8 (Min) 20 (Typ) 10 mA	20 (Min) 50 (Max)	2.9 +/- 0.25 3.2 +/- 0.25	5.4 +/- 0.5	2.2 (Typ) 2.5 (Max) 20 mA
L315	Orange	OSRAM	LO 3340-N	610 (PEAK) 606 (DOM TYP) 10 mA	18 - 45mcd 10 mA	27-55 (TYP) 10 mA	2.8+/-0.1 3.25+/-0.15	5.9+/-0.2	2 (TYP) 2.5 (MAX) 10mA
		Kingbright	L-7104NT	608 (Peak) 610 (Dom) 20 mA	19 (Min) 50 (Typ) 10 mA	20 (Min) 50 (Max)	2.9 +/- 0.25 3.2 +/- 0.26	5.4 +/- 0.5	2.05 (Typ) 2.5 (Max) 20 mA
L327	Yellow	OSRAM	LY 3360-K.E9423	586 (PEAK) 587 (DOM TYP) 10 mA	7.1 - 18mcd 10 mA	22-45 (TYP) 10 mA	3.25+/-0.15	5.9+/-0.2	2 (TYP) 2.5 (MAX) 10mA
		Kingbright	L-7104YD	591 (Peak) 588 (Dom) 20 mA	6 (Min) 15 (Typ) 10 mA	20 (Min) 50 (Max)	2.9 +/- 0.25 3.2 +/- 0.26	5.4 +/- 0.5	2.1 (Typ) 2.5 (Max) 20 mA
L352	Red	OSRAM	LS 3360-K	635 (PEAK) 628 (DOM TYP) 10 mA	7.1 - 18mcd 10 mA	22-45 (TYP) 10 mA	3.25+/-0.15	5.9+/-0.2	2 (TYP) 2.5 (MAX) 10mA
		Kingbright	L-7104ID	627 (Peak) 625 (Dom) 20 mA	8 (Min) 20 (Typ) 10 mA	20 (Min) 50 (Max)	2.9 +/- 0.25 3.2 +/- 0.25	5.4 +/- 0.5	2 (Typ) 2.5 (Max) 20 mA
L302 L303	White	OSRAM	LW 3333 S1T2 6k7 LW 3333 S1T2 8K8L	x=y=0.33 10mA	180 - 450mcd 10 mA	240-475 (TYP) 10 mA	2.8+/- 0.13,25+/- 0.15	5.9+/-0.2	3.1 (TYP) 3.7 (MAX) 10mA
		Kingbright	L-934QWC-D	x=0.31 +/-0.02 y=0.31 +/- 0.02	280 (Min) 500 (Typ) 20 mA	200 (Min) 500 (Max)	2.9 +/- 0.25 3.2 +/- 0.25	5.4 +/- 0.5	3.3 (Typ) 4 (Max) 20 mA
L316	Green	OSRAM	LP 3340-L	557 (Peak) 560 (DOM TYP) 10 mA	7.1 (Min) 18 (Max) 10 mA	11-21 (TYP) 10 mA	2.8+/-0.1 3.25+/-0.15	5.9+/-0.2	2 (TYP) 2.5 (MAX) 10mA
		Kingbright	L7104 PGT	555 (PEAK) 555 (DOM) 20 mA	3 (Min) 15 (TYP) 10 mA	12.5 (Min) 32 (Max)	2.9+/-0.25 3.2+/-0.25	5.4+/-0.5	2.25 (TYP) 2.5 (MAX) 20 mA
L347	Yellow	OSRAM	LY 3336	591 (TYP) 587 (DOM TYP) 20 mA	180 (Min) 450 (Max) 20 mA	310-600 (TYP) 20 mA	2.8 +/- 0.1 3.25 +/-0.15	5.9+/-0.2	1.9 (MIN) 2 (TYP) 2.4 (MAX) 20mA
		Kingbright	L-7104 SYCK	590 (PEAK) 590 (DOM) 20 mA	110 (Min) 400 (Typ) 20 mA	320 (Min) 800 (Max)	2.9+/-0.25 3.2+/-0.25	5.4+/-0.5	2 (Typ) 2.5 (Max) 20 mA
L354	Red	OSRAM	LS K376	645 (TYP) 633 (DOM) 20 mA		180 - 710 20 mA	2.95 +/-0.15 3.4+/-0.2	4.6+/-0.2	1.8 (MIN) 2 (TYP) 2.3 (MAX) 20mA
		Kingbright	L-1334 SURCK-DP	650 (PEAK) 624 (DOM MIN) 638 (DOM MAX) 20 mA	80 (Min) 400 (Max) 20 mA	200 (Min) 800 (Max)	3+/-0.25 3.4+/-0.25	4.1+/-0.5	1.6 (MIN) 1.95 (TYP) 2.5 (MAX) 20mA

Chromatic Coordinates White LED

