High Brightness LED Power Module

FEATURES

- Cu based PCB, 2 mm thickness
- Shiny white surface
- 63 W multichip LED, minimum 4200 lm for cool white, 3950 lm for natural white, and 3000 lm for warm white at 3000 mA each
- ESD withstand voltage: Up to 1 kV according to JESD22-A114-B
- CRI: 80
- Color temperature binning
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free
RoHS COMPLIANT
HALOGEN FREE
GREEN (5-2008)

DESCRIPTION

VLPC0303C6, VLPN0303C6 and VLPW0303C6 are high brightness LED modules. Totally 9 pieces 63 W multichip power LEDs are soldered on a Cu plate. The Cu plate with a thickness of 2 mm guarantees best heat removal and distribution. VLPC0303C6 is the cool white version in a color temperature range of 5000 K to 7400 K. VLPN0303C6 is natural white with a typical color temperature of 4350 K and VLPW0303C6 is warm white in a color temperature range of 2670 K to 3120 K. Additional to the modules a suitable LED driver is available.

APPLICATIONS

- Internal lighting in buildings
- Tunnel lights
- Reading lamp, table lamp
- General lighting application

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: LED module
- Product series: power
- Angle of half intensity: ± 65°
- CRI: 80

PARTS TABLE

PART	COLOR	LUMINOUS FLUX (lm) (at I_F = 3000 mA typ.)			COLOR TEMPERATURE K	TECHNOLOGY
		MIN.	TYP.	MAX.		
VLPC0303C6	Cool white	4200	4550	-	5000 to 6650	InGaN
VLPN0303C6	Natural white	3950	4300	-	3680 to 4350	InGaN
VLPW0303C6	Warm white	3000	3430	-	2670 to 3120	InGaN

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)
VLPC0303C6, VLPN0303C6, VLPW0303C6

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Forward current	T_{amb} < 80 °C	I_F	3000	mA
Power dissipation	T_{amb} < 80 °C	P_{tot}	63	W
Junction temperature		T_j	115	°C
Operating temperature range		T_{amb}	- 40 to + 80	°C
Storage temperature range		T_{stg}	- 40 to + 100	°C
Thermal resistance		R_{thJS}	0.15	K/W
Pad soldering temperature	10 s	T_{SD}	260	°C

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
VLPC0303C6, COOL WHITE

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous flux	I_F = 2100 mA	Φ_V	3250	3500	-	lm
	I_F = 3000 mA	Φ_V	4200	4550	-	lm
Color temperature	I_F = 3000 mA	CCT	5000	5700	6650	K
Chromaticity coordinates	I_F = 3000 mA	x	-	0.3287	-	
	I_F = 3000 mA	y	-	0.3417	-	
Full angle of half intensity	I_F = 3000 mA	2ϕ½	-	130	-	°
Forward voltage	I_F = 3000 mA	V_F	18.0	21.0	24.0	V
Temperature coefficient of V_F	I_F = 3000 mA	TCV_F	-	3.0	-	mV/K
Temperature coefficient of Φ_V	I_F = 3000 mA	$TC\Phi_V$	-	0.22	-	%/K

Notes

- Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ± 0.1 V. Luminous flux is measured at a current pulse duration of 25 ms and an accuracy of ± 11 %.
- CRI: 80

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
VLPN0303C6, NATURAL WHITE

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous flux	I_F = 2100 mA	Φ_V	3000	3300	-	lm
	I_F = 3000 mA	Φ_V	3950	4350	-	lm
Color temperature	I_F = 3000 mA	CCT	3680	4000	4350	K
Chromaticity coordinates	I_F = 3000 mA	x	-	0.3818	-	
	I_F = 3000 mA	y	-	0.3797	-	
Full angle of half intensity	I_F = 3000 mA	2ϕ½	-	130	-	°
Forward voltage	I_F = 3000 mA	V_F	18.0	21.0	24.0	V
Temperature coefficient of V_F	I_F = 3000 mA	TCV_F	-	3.0	-	mV/K
Temperature coefficient of Φ_V	I_F = 3000 mA	$TC\Phi_V$	-	0.22	-	%/K

Notes

- Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ± 0.1 V. Luminous flux is measured at a current pulse duration of 25 ms and an accuracy of ± 11 %.
- CRI: 80

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
VLPW0303C6, WARM WHITE

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous flux	I_F = 2100 mA	Φ_V	2340	2580	-	lm
	I_F = 3000 mA	Φ_V	3000	3430	-	lm
Color temperature	I_F = 3000 mA	CCT	2670	3000	3120	K
Chromaticity coordinates	I_F = 3000 mA	x	-	0.4450	-	
	I_F = 3000 mA	y	-	0.4060	-	
Full angle of half intensity	I_F = 3000 mA	2ϕ½	-	130	-	°
Forward voltage	I_F = 3000 mA	V_F	18.0	21.0	24.0	V
Temperature coefficient of V_F	I_F = 3000 mA	TCV_F	-	3.0	-	mV/K
Temperature coefficient of Φ_V	I_F = 3000 mA	$TC\Phi_V$	-	0.22	-	%/K

Notes

- Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of ± 0.1 V. Luminous flux is measured at a current pulse duration of 25 ms and an accuracy of ± 11 %.
- CRI: 80

COLOR BINNING (I_F at 2100 mA)		
PART	**BIN CODE**	**CCT (K)**
VLPC0303C6	A	5000 to 5450
	B	5450 to 6000
	C	6000 to 6650
	D	6650 to 7400
VLPN0303C6	N	3860 to 4000
	M	4000 to 4350
VLPW0303C6	J	2670 to 2870
	K	2870 to 3120

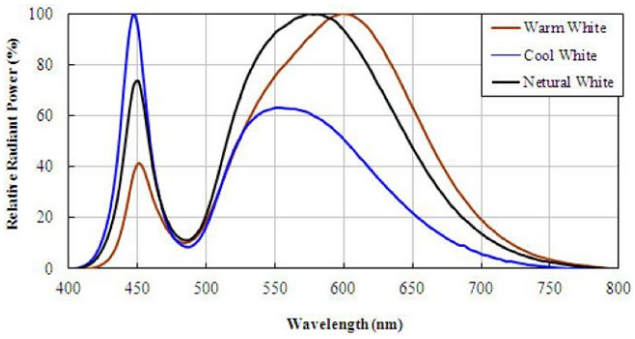


Fig. 1 - Relative Spectrale Emission

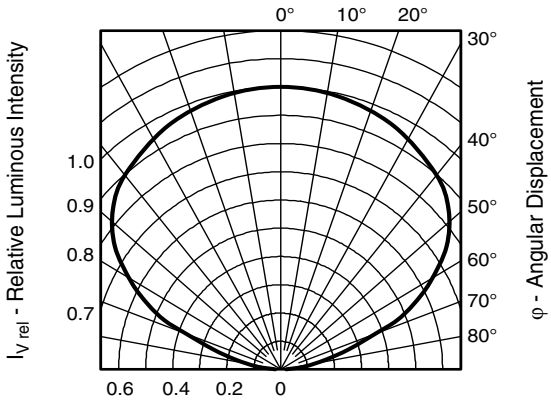


Fig. 2 - Relative Intensity vs. Angular Displacement

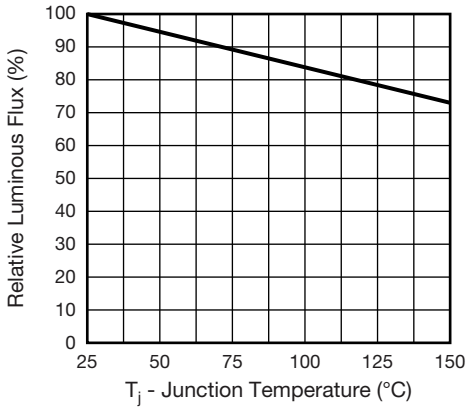


Fig. 3 - Relative Luminous Flux vs. Junction Temperature (I_F = 3200 mA)

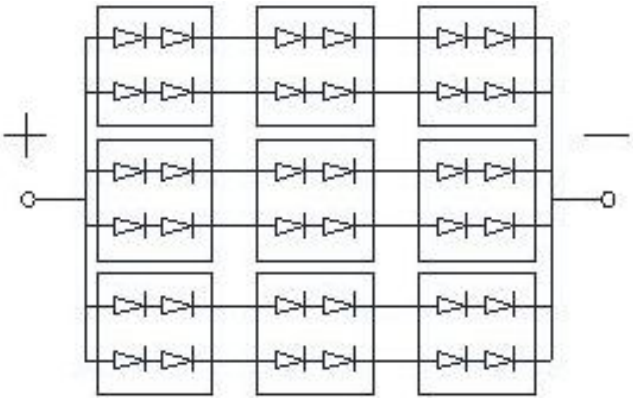
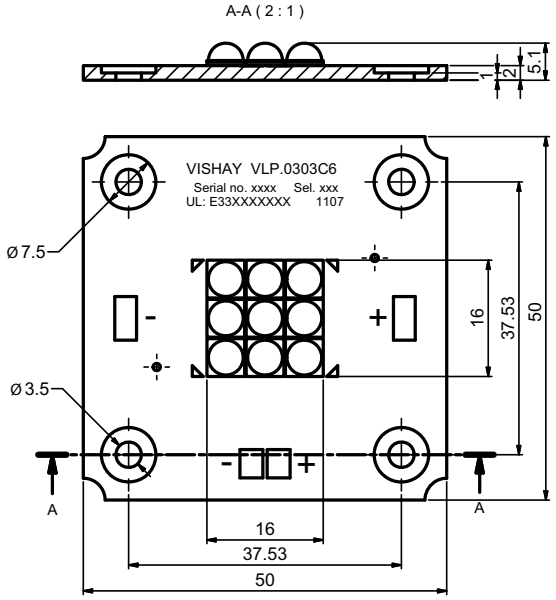


Fig. 4 - Array Circuit Type

PACKAGE DIMENSIONS in millimeters



Not indicated tolerances ± 0.2
All dimensions in mm
Drawing refers to following types: VLP.0303C6
Drawing-No.: 9.920-6809.02-4
Issue: prel; 18.07.2012

Technical drawings according to DIN specification.

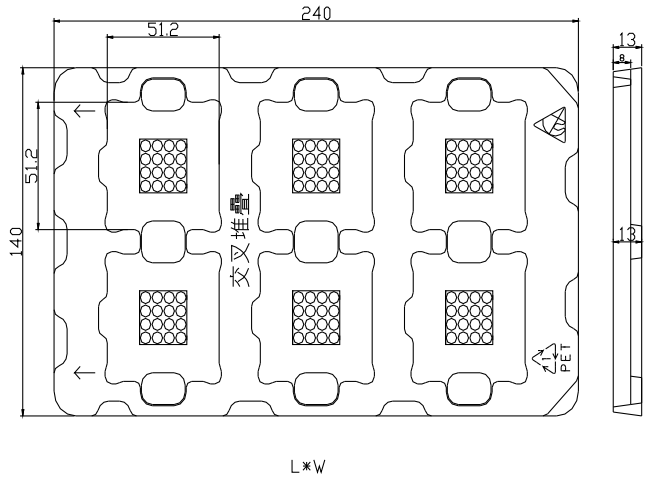
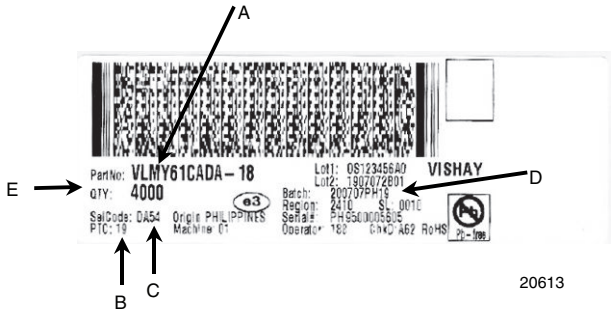


Fig. 5 - 6 Pieces LED Array in One Tray

Fig. 6 - Tray and Box
5 Trays in One Anti-Static Bag, 2 Bags in One Carton, Contains 60 Pieces LED

BAR CODE PRODUCT LABEL



A. Type of component

B. Manufacturing plant

C. SEL - selection code (bin):
X = color group

D. Batch:
200707 = year 2007, week 07
PH19 = plant code

E. Total quantity

Note

- 3 trays in one box contains 18 pieces LED array. Minimum order quantity: 18

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