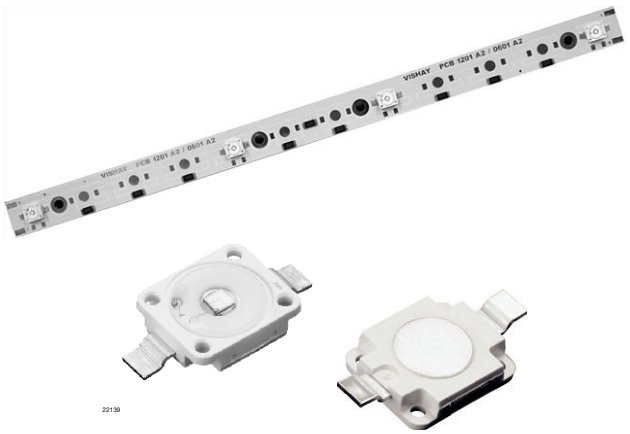
High Brightness LED Power Module



FEATURES

- Metal core PCB: Al > 1 mm thickness
- Single side/single layer PCB
- Shiny white surface
- 4 LED's in a row
- Conductive top layer: Cu (min. 18 µm)
- Isolation layer prepreg (100 µm)
- ESD withstand voltage: up to 2 kV according to JESD22-A114-B
- Color binning
- LM80 certified LEDs
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

GREEN (5-2008)

DESCRIPTION

VLPC0401A2J is a metal core based high brightness LED power modules assembled with 4 white LED's. Color temperature range of 5000 K to 7000 K.

PRODUCT GROUP AND PACKAGE DATA

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

APPLICATIONS

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

PARTS TABLE

PART	COLOR	LUMINOUS FLUX (at I_F = 700 mA typ.)	COLOR TEMPERATURE K	TECHNOLOGY
VLPC0401A2J	Cool white	Φ_V = typ. 580 lm	5000 to 7000	InGaN

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified) **VLPC0401A2J**

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Forward current		I_F	700	mA
Power dissipation	Total	P_{tot}	10.8	W
Junction temperature		T_j	120	°C
Operating temperature range		T_{amb}	- 40 to + 85	°C
Storage temperature range		T_{stg}	- 40 to + 85	°C
Decomposition temperature of PCB (for cable assembly)	3 x 10 s	T_D	350	°C

OPTICAL AND ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)
VLPC0401A2J, COOL WHITE

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous flux total (1)	I_F = 700 mA	Φ_V	500	580	-	lm
Color temperature	I_F = 700 mA	TK	5000	-	7000	K
Forward voltage	I_F = 700 mA	V_F	12.5	14	15.5	V
Temperature coefficient of V_F	I_F = 350 mA	TC_{VF}	-	- 14	-	mV/K
Temperature coefficient of Φ_V	I_F = 350 mA	$TC\Phi_V$	-	- 0.4	-	%/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 %.

(1) Calculated based on single LED unit.

COLOR RANGE AND COLOR BINNING

VLPC0401A2J: 5000 K to 7000 K group 6P to 7R

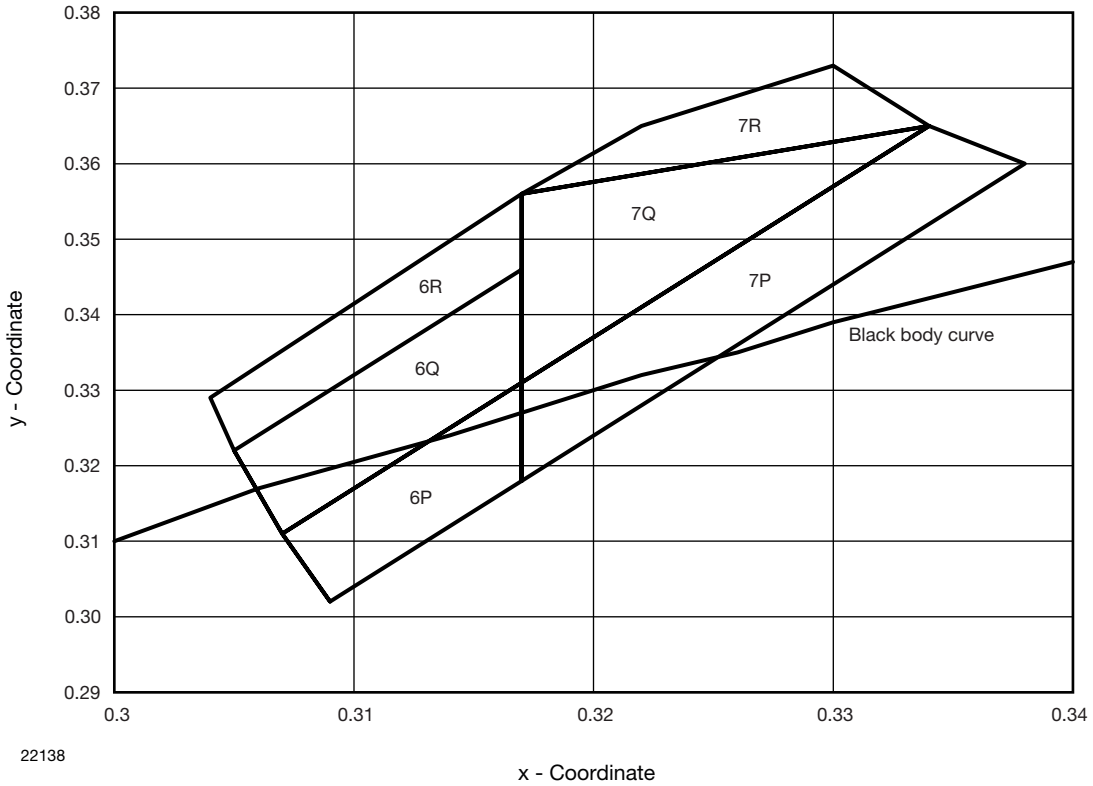
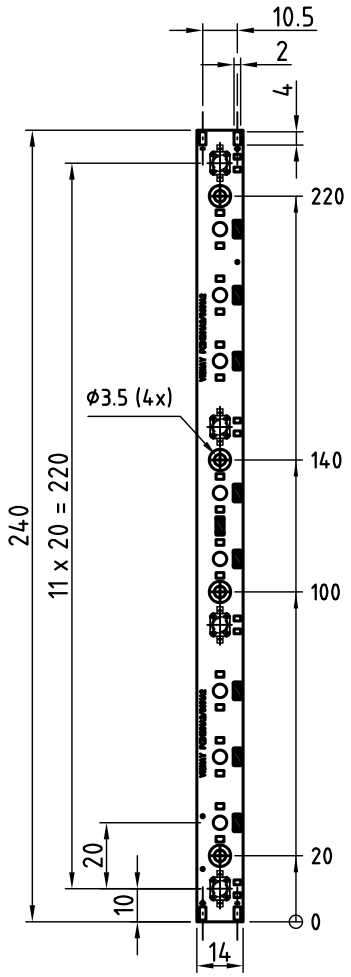
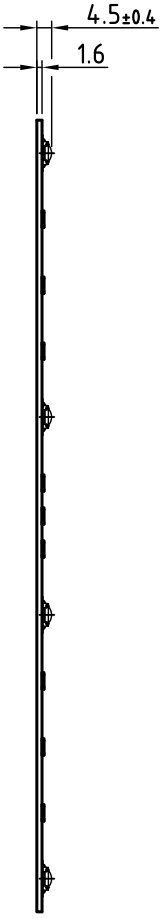


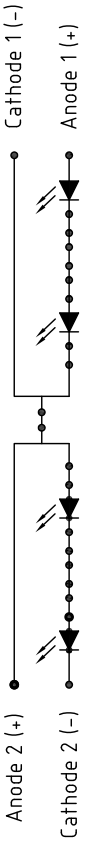
Fig. 1 - Chromaticity Coordinates of Colorgroups

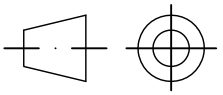
CHROMATICITY COORDINATED GROUPS FOR COOL WHITE SMD LED									
GROUP	X	Y		GROUP	X	Y		GROUP	X	Y
6P	0.309	0.302		6Q	0.307	0.311		6R	0.305	0.322
	0.307	0.311			0.305	0.322			0.304	0.329
	0.317	0.331			0.317	0.346			0.317	0.356
	0.317	0.318			0.317	0.331			0.317	0.346
7P	0.317	0.318		7Q	0.317	0.331		7R	0.317	0.356
	0.317	0.331			0.317	0.356			0.322	0.365
	0.334	0.365			0.334	0.365			0.330	0.373
	0.338	0.360			0.317	0.331			0.334	0.365

PCB BASIC DESIGN DIMENSIONS in millimeters









Drawing-No.: 9.920-6790.01-4
Issue: 1 ; 05.09.11
Not indicated tolerances ±0.2
Drawing refers to following types: VLP.0401A2J

technical drawings
according to DIN
specifications

PCB CHARACTERISTICS

- Metal core PCB: Al (minimum 1000 µm - thickness)
- Prepreg minimum 63 µm
- Conductive pattern Cu minimum 18 µm
- Free of burrs
- RoHS ccompliant
- Halogen-free
- Solder resist on top side
- Shiny white surface (glossy-white Taiyo-PSR 2000)
- Galvanic of solder pads and backside pure matte Sn (0.8 µm to 1.2 µm)
- Assembled with 4 high brightness power LEDs. LED position accuracy ± 0.3

EMISSION CHARACTERISTIC

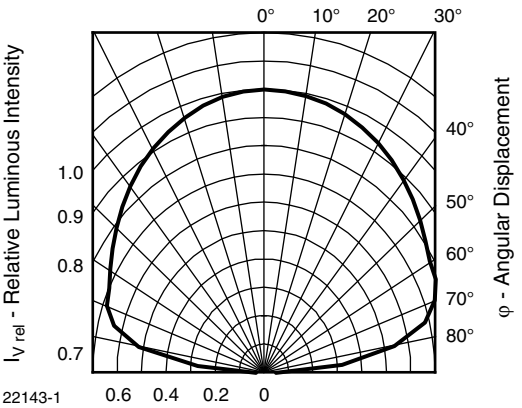
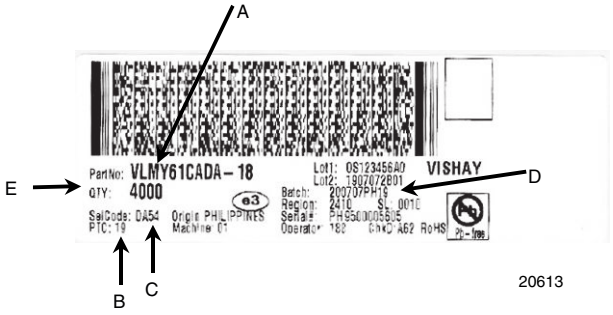


Fig. 2 - Relative Luminous Intensity vs. Angular Displacement

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

- 32 PCB's per box, minimum order quantity 32

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