



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

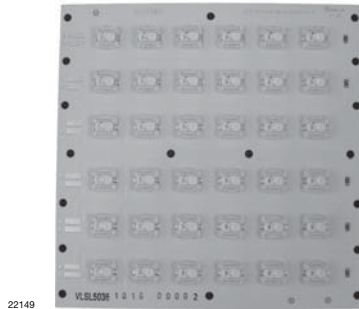
Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



High Brightness LED Power Module



DESCRIPTION

The VLSL50xxA are metal core based high brightness LED power modules, assembled with 12, 24 or 36 HB white LEDs. The colour temperature is cool white in the typical range of 5000 K to 7000 K. The LED's are designed with a clear silicone lens for a butterfly shaped radiation characteristic.

PRODUCT GROUP AND PACKAGE DATA

- Product group: LED
- Package: LED module
- Product series: power
- Angle of half intensity: vertical: $\pm 35^\circ$, horizontal: $\pm 60^\circ$

FEATURES

- Metal core PCB: Al > 0.75 thickness
- Single side/single layer PCB
- Shiny white surface
- 12, 24 or 36 LED's minimum 82 lm at 350 mA per LED. Max. current per LED 1 A
- Conductive top layer: Cu (min. 18 μm)
- Isolation layer prepreg > 63 μm
- Luminous flux and colour binning
- ESD withstand voltage: up to 2 kV according to JESD22-A114-B
- LM80 certified LEDs
- Compliant to RoHS Directive 2002/95/EC



RoHS
COMPLIANT
GREEN
(5-2008)**

APPLICATIONS

- Streetlight
- Internal lighting in buildings
- Tunnel lights
- General lighting application

PARTS TABLE

PART	COLOR	LUMINOUS FLUX (at $I_F = 700 \text{ mA typ.}$)	COLOR TEMPERATURE K	TECHNOLOGY
VLSL5012A	Cool white	$\Phi_V = 1740 \text{ lm}$	5000 to 7000	InGaN
VLSL5024A	Cool white	$\Phi_V = 3480 \text{ lm}$	5000 to 7000	InGaN
VLSL5036A	Cool white	$\Phi_V = 5220 \text{ lm}$	5000 to 7000	InGaN

ABSOLUTE MAXIMUM RATINGS ($T_{\text{amb}} = 25^\circ\text{C}$, unless otherwise specified) VLSL5012A, VLSL5024A, VLSL5036A

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Forward current	Per row	I_F	750	mA
Power dissipation VLSL5012A	Total (max.)	P_{tot}	35	W
Power dissipation VLSL5024A		P_{tot}	69	W
Power dissipation VLSL5036A		P_{tot}	104	W
Junction temperature		T_j	120	$^\circ\text{C}$
Operating temperature range		T_{amb}	- 40 to + 85	$^\circ\text{C}$
Storage temperature range		T_{stg}	- 40 to + 85	$^\circ\text{C}$

** Please see document "Vishay Material Category Policy": www.vishay.com/doc?99902

OPTICAL AND ELECTRICAL CHARACTERISTICS ⁽¹⁾ ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) VLSL5012A, COOL WHITE

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous flux per row ⁽²⁾	$I_F = 700\text{ mA}$	Φ_V	760	870	-	lm
Luminous flux total ⁽²⁾	$I_{board} = 2 \times 700\text{ mA}$	Φ_V	1520	1740	-	lm
Color temperature	$I_F = 700\text{ mA}$	TK	5000	-	7000	K
Forward voltage per row	$I_F = 700\text{ mA}$	V_F	19	20	23	V
Class A ($V_{Fmax.} - V_{Fmin.}$) all rows ⁽³⁾	$I_F = 700\text{ mA}$	ΔV_F	-	-	0.9	V
Temperature coefficient of V_F per row	$I_F = 350\text{ mA}$	TC_{V_F}	-	- 20	-	mV/K
Temperature coefficient of Φ_V	$I_F = 350\text{ mA}$ (per row)	TC_{Φ_V}	-	- 0.4	-	%/K

Notes

- ⁽¹⁾ Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of $\pm 0.1\text{ V}$. Luminous flux is measured at a current pulse duration of 25 ms and an accuracy of $\pm 11\%$.
- ⁽²⁾ Calculated based on single LED unit.
- ⁽³⁾ V_F classes are marked at the LED cluster and represent the technical classification only. The single groups cannot be specifically ordered.

OPTICAL AND ELECTRICAL CHARACTERISTICS ⁽¹⁾ ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) VLSL5024A, COOL WHITE

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous flux per row ⁽²⁾	$I_F = 700\text{ mA}$	Φ_V	760	870	-	lm
Luminous flux total ⁽²⁾	$I_{board} = 4 \times 700\text{ mA}$	Φ_V	3040	3480	-	lm
Color temperature	$I_F = 700\text{ mA}$	TK	5000	-	7000	K
Forward voltage per row	$I_F = 700\text{ mA}$	V_F	19	20	23	V
Class A ($V_{Fmax.} - V_{Fmin.}$) all rows ⁽³⁾	$I_F = 700\text{ mA}$	ΔV_F	-	-	0.9	V
Temperature coefficient of V_F per row	$I_F = 350\text{ mA}$	TC_{V_F}	-	- 20	-	mV/K
Temperature coefficient of Φ_V	$I_F = 350\text{ mA}$ (per row)	TC_{Φ_V}	-	- 0.4	-	%/K

Notes

- ⁽¹⁾ Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of $\pm 0.1\text{ V}$. Luminous flux is measured at a current pulse duration of 25 ms and an accuracy of $\pm 11\%$.
- ⁽²⁾ Calculated based on single LED unit.
- ⁽³⁾ V_F classes are marked at the LED cluster and represent the technical classification only. The single groups cannot be specifically ordered.

OPTICAL AND ELECTRICAL CHARACTERISTICS ⁽¹⁾ ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified) VLSL5036A, COOL WHITE

PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Luminous flux per row ⁽²⁾	$I_F = 700\text{ mA}$	Φ_V	760	870	-	lm
Luminous flux total ⁽²⁾	$I_{board} = 6 \times 700\text{ mA}$	Φ_V	4560	5220	-	lm
Color temperature	$I_F = 700\text{ mA}$	TK	5000	-	7000	K
Forward voltage per row	$I_F = 700\text{ mA}$	V_F	19	20	23	V
Class A ($V_{Fmax.} - V_{Fmin.}$) all rows ⁽³⁾	$I_F = 700\text{ mA}$	ΔV_F	-	-	0.9	V
Temperature coefficient of V_F per row	$I_F = 350\text{ mA}$	TC_{V_F}	-	- 20	-	mV/K
Temperature coefficient of Φ_V	$I_F = 350\text{ mA}$ (per row)	TC_{Φ_V}	-	- 0.4	-	%/K

Notes

- ⁽¹⁾ Forward voltages are tested at a current pulse duration of 1 ms and a tolerance of $\pm 0.1\text{ V}$. Luminous flux is measured at a current pulse duration of 25 ms and an accuracy of $\pm 11\%$.
- ⁽²⁾ Calculated based on single LED unit.
- ⁽³⁾ V_F classes are marked at the LED cluster and represent the technical classification only. The single groups cannot be specifically ordered.



SPECIFICATION OF SINGLE LEDs USED FOR THE MODULES

- VLSL5012A, VLSL5024A, VLSL5036A: LED: VLMW92KYKZ6P7R

LUMINOUS FLUX CLASSIFICATION FOR THE SINGLE LED		
GROUP STANDARD	LUMINOUS FLUX Φ_v (lm) CORRELATION TABLE	
	MIN.	MAX.
KY	82 000	97 000
KZ	97 000	112 000

COLOR RANGE AND COLOR BINNING

VLSL5012A, VLSL5024A, VLSL5036A: 5000 K to 7000 K group 6P to7R

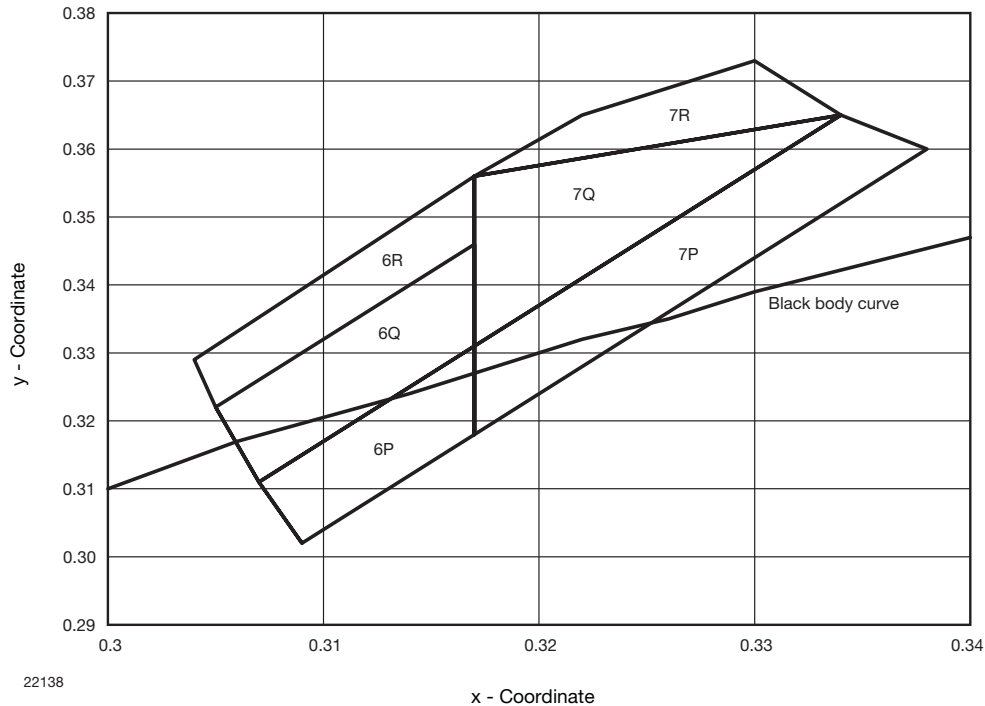


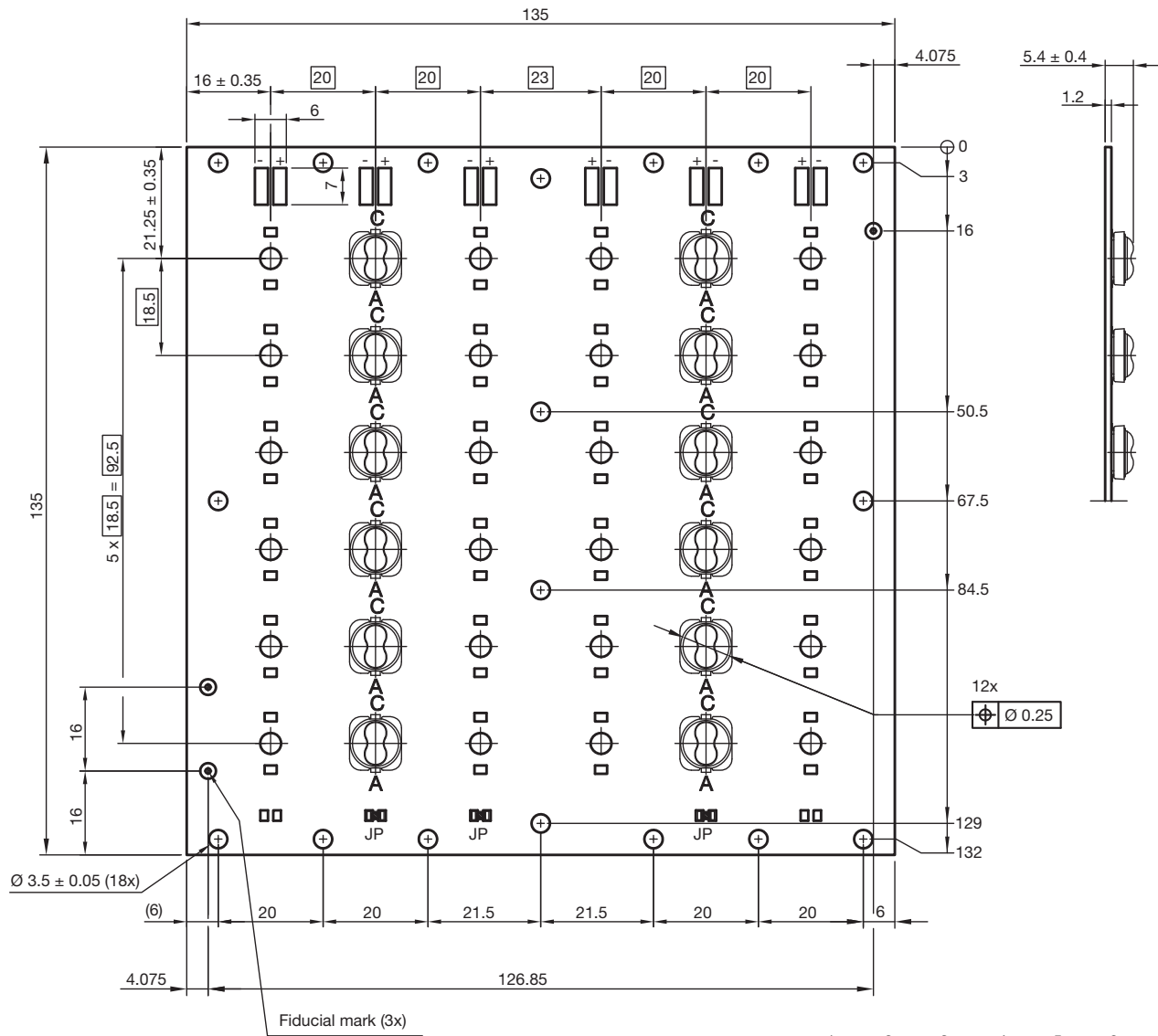
Fig. 1 - Chromaticity Coordinates of Colorgroups

VLSL5012A, VLSL5024A, VLSL5036A

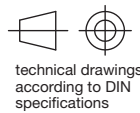
Vishay Semiconductors High Brightness LED Power Module



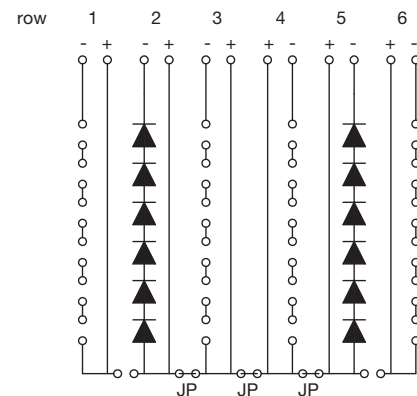
PCB BASIC DESIGN VLSL5012A Dimensions in millimeters



Not indicated tolerances ± 0.15



Drawing-No.: 9.920-6727.03-4
Issue:1; 11.05.10
22150



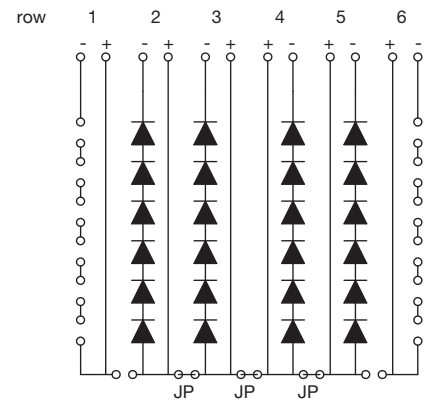
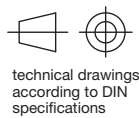
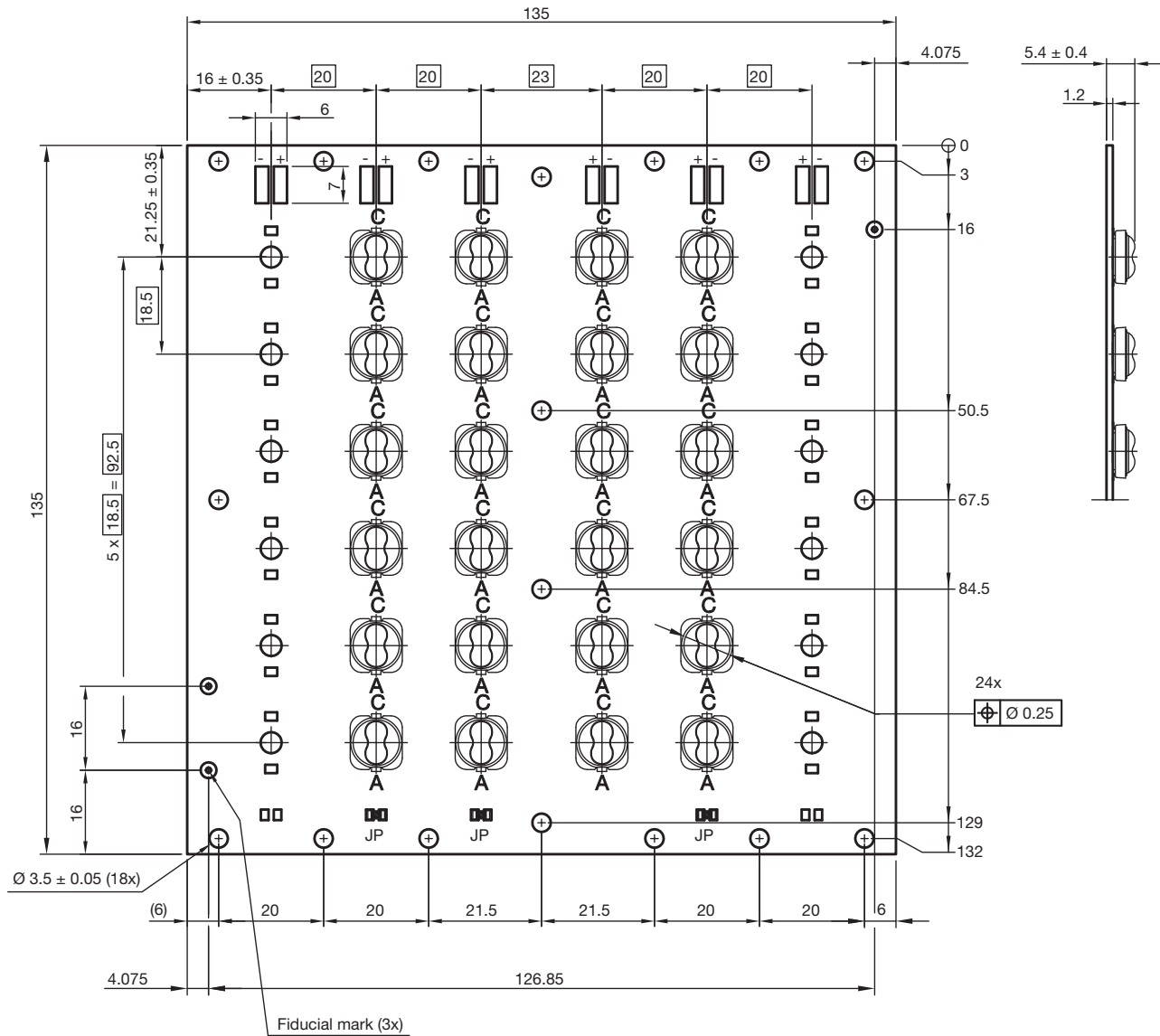
Assembled with all jumpers. Jumpers can be removed according driver design



VLSL5012A, VLSL5024A, VLSL5036A

High Brightness LED Power Module Vishay Semiconductors

PCB BASIC DESIGN VLSL5024A Dimensions in millimeters



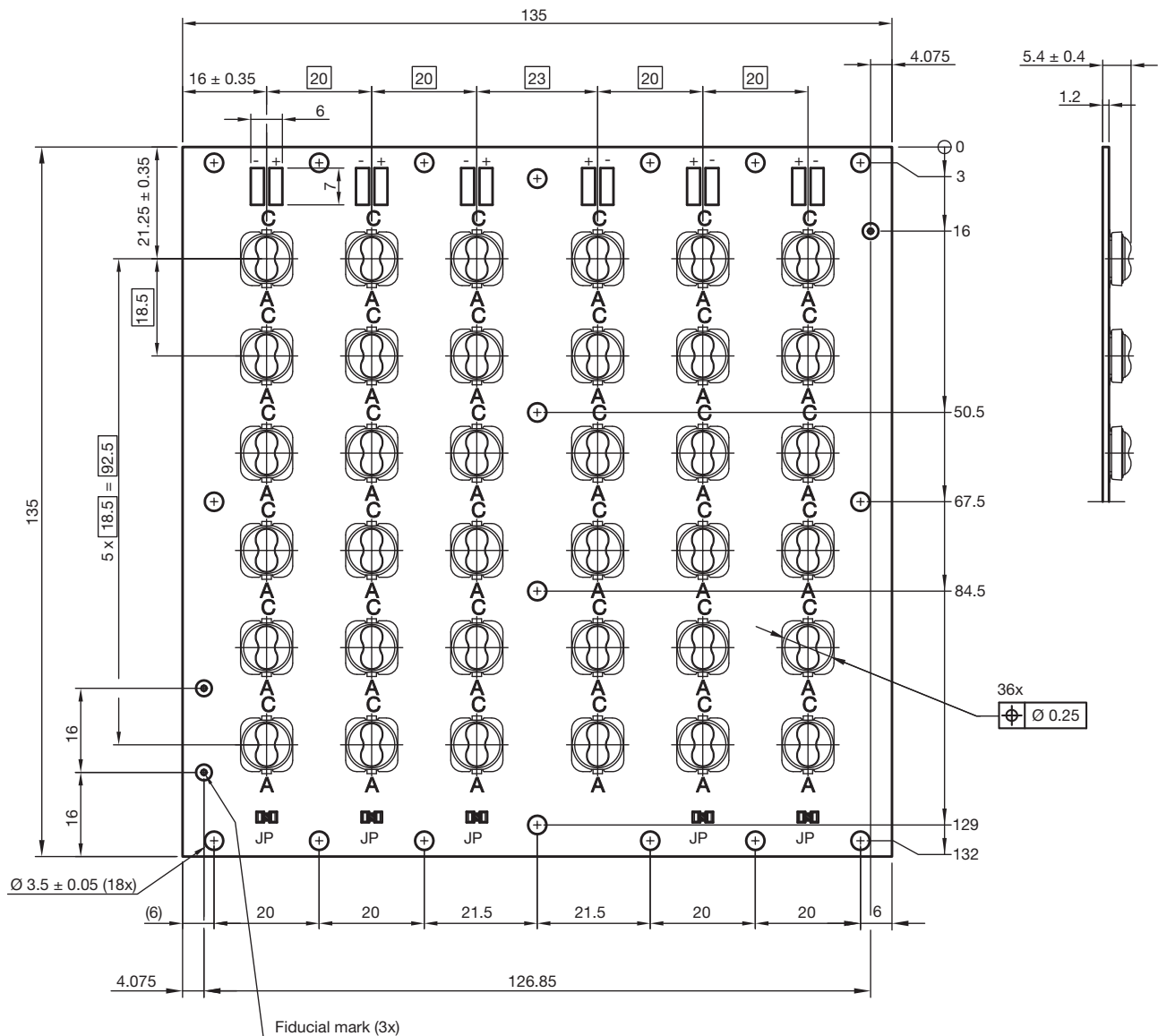
Assembled with all jumpers. Jumpers can be removed according driver design

VLSL5012A, VLSL5024A, VLSL5036A

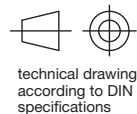
Vishay Semiconductors High Brightness LED Power Module



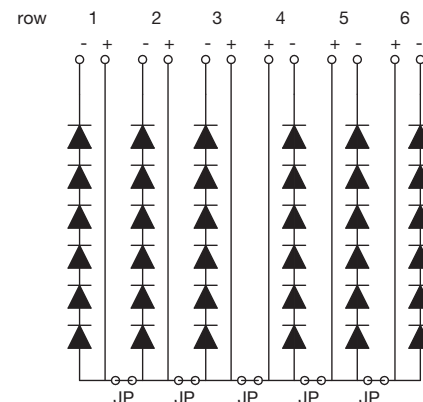
PCB BASIC DESIGN VLSL5036A Dimensions in millimeters



Not indicated tolerances ±0.15



Drawing-No.: 9.920-6727.01-4
 Issue: 1; 11.05.10
 22152

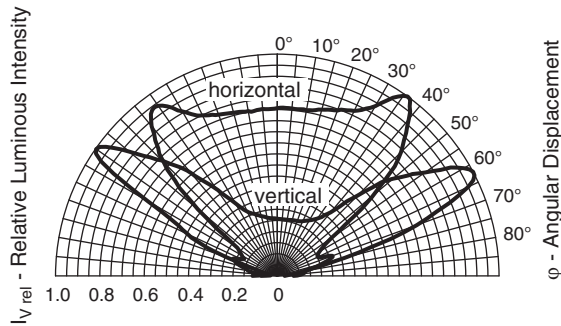


Assembled with all jumpers. Jumpers can be removed according driver design

PCB CHARACTERISTICS

- Metal core PCB with typical Al thickness of 800 μm
- Prepreg thickness typical 127 μm
- Conductive pattern Cu typical 25 μm
- Total board thickness: 1 mm \pm 15 %
- Warpage max. 0.75 % of board dimension
- Solder resist on top side
- Shiny white surface
- Galvanic of solder pads pure matte Sn (\geq 0.8 μm), immersion plated
- Assembled with 12, 24 or 36 VLMW92xxx LED's. LED position accuracy \pm 0.125 mm from middle axis, horizontal tilt max. 2°

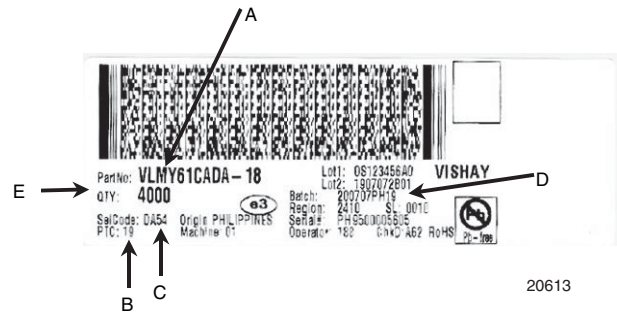
EMISSION CHARACTERISTIC



22153

Fig. 2 - Rel. Luminous Intensity vs. Angular Displacement

BAR CODE PRODUCT LABEL



20613

- A. Type of component
- B. Manufacturing plant
- C. SEL - selection code (bin):
e.g.: code for V_F class (A, B, C)
- D. Batch:
200707 = year 2007, week 07
PH19 = plant code
- E. Total quantity



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.