LED Backlight Driver

For High Brightness TFT-LCD module

Customer:

Customer model name:

Customer part number:

AGL model name: KE-24LED-2L5340B

AGL part number：

Date: Jul. 15th, 2019

Version: 01

Note: This specification is subject to change without notice

Customer：
Approved by ：
Date：

Approved **Date:**	**Prepared** **Date:**

Table of Content

0. Revision History

ITEM NO.	DATE	DESCRIPTION
01	2016,09,13	Initial Issue
02	2016,11,05	PCB drawing updated
03	2019.07.15	EN voltage: 3.3~5.0V, PWM voltage: 3.3~5.0V

1. Product Purpose and General Description

The KE-24LED-2L5340B is designed to drive 2 strings LEDs of LED backlight Module. This LED driver board is provided high LED's VF voltage about 53V.

The KE-24LED-2L5340B multi-protect functions is able to protect LED module. When input 24/12 voltage is ready and the enable pin voltage a high signal, soft-start function is worked.

The brightness can be adjusted from 10%~100% through the dimming pin by analog dimming signal or PWM dimming signal.

It has been optimized for LED backlight as the following LIST:

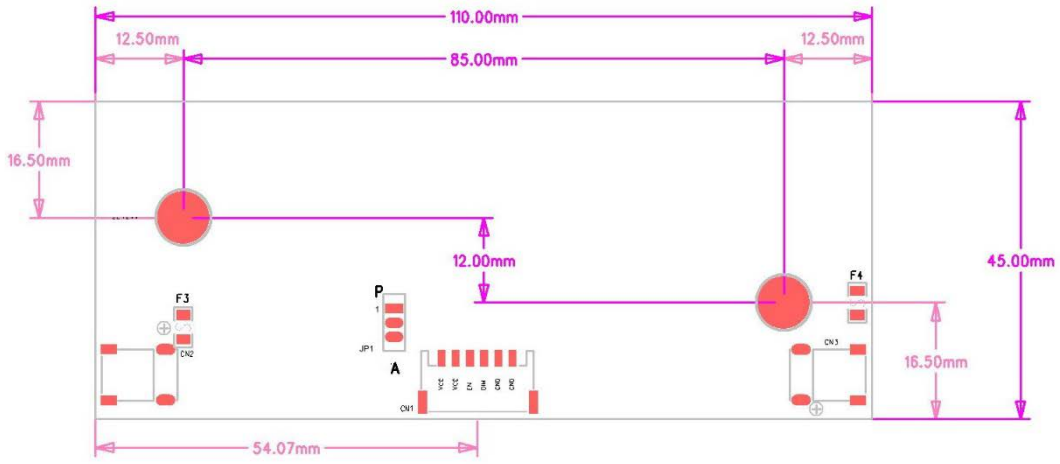
LED SIZE	LCM Model	Brand	Remark
LCD backlight	Multi-models	Applied Green Light	

This product has the following features:

- ☑ Open LED protection.
- ☑ Constant LED current.
- ☑ LED short protection.
- ☑ 100% Full-Load Tested.
- ☑ Designed, Manufactured in Taiwan and Supported Worldwide.

2. Physical Dimension, Pin & Connector Assignment

Physical Dimension:



Note:

1. UNIT: mm
2. SIZE: 110 mm × 45 mm × 13 mm
3. PCB Thickness 1.6 mm
4. The Height of Top-side is 10 mm (Max)
5. The Height of Bottom-side is 1.4 mm

Pin & Connector Assignment:

CN1: CviLux CI0106M1HR0-LF or Equivalent

Pin No	Symbol	**Description**
1	VIN	DC +24V / +12V
2	VIN	DC +24V / +12V
3	ON/OFF	OFF=0V
		ON=+3.3V
4	DIM	Dimming Control
5	GND	GROUND
6		GROUND

CN2/CN3 : CviLux CP05-2-P1MRO or Equivalent

Pin No	Symbol	Description
1	LED +	Positive
2	LED -	Negative

JP1 :

Pin No	Symbol	Description
1-2	PWM	200Hz ~ 500Hz
2-3	Analog	0V ~ 3V

3. Absolute Maximum Ratings (Note 1)

Rating	**Symbol**	**Value**	**Units**
Input Voltage	$V_{in,man}$	+26.4	V_{DC}
Output Power	$P_{out,max}$	42.24	W
Operating Temperature	$T_{a,max}$	-20 -- +70	℃
Storage Temperature	$T_{s,max}$	-30 -- +80	℃
Operating Humidity (without dewdrop)	$H_{a,max}$	80 %	R.H
(without dewdrop)	$H_{s,max}$	95 %	R.H

(Note 1):
Reliable and predictable operation of the device is not guaranteed with applied stresses at or beyond those listed in “Absolute Maximum Ratings”. Operation at these limits may reduce device reliability and is therefore not recommended. Please refer to “Recommended Operating Conditions” for reliable operation of the device.

4. Recommended Operating Conditions (Note 2)

Rating	Symbol	**Value**	Units
Input Voltage (24 V_{DC})	V_{in}	22.8 ~ 25.2	V_{DC}
Input Voltage (12 V_{DC})	V_{in}	11.4~13.2	V_{DC}
Operating Temperature	T_a	20 ~ 40	℃
Operating Humidity	$H_{a,max}$	40 ~ 60 %	R.H

(Note 2):

Reliable operation above 50℃ is possible if airflow is provided.

5. Electrical Characteristics and Specifications

Unless otherwise noted T_a=25℃ and unit has been running for over 30 minutes.

Parameter	**Symbol**	**Min.**	**Typ.**	**Max.**	**Unit**	**Remarks (Test Condition)**
Input Specification						
Input Voltage	**V_{in}**	21.6	24.0	26.4	V_{DC}	Input voltage: 24 V_{DC}
Input Current	**I_{in}**		2.03		A_{DC}	
Input Voltage	**V_{in}**	11.4	12.0	13.2	V_{DC}	Input voltage: 12 V_{DC}
Input Current	**I_{in}**		4.06		A_{DC}	
On/Off control	**ON/OFF**	3.3	-	5.0	V_{DC}	ON STATE
		-	0	0.8		OFF STATE
Dimming (Analog)	**DIM**		3		V_{DC}	Min. Brightness
			0			Max. Brightness
Dimming (PWM)	**DIM**	3.3	-	5.0	V_{DC}	Dimming voltage
		10		100	%	Dimming range
		200	300	500	Hz	Dimming frequency

Output Specification						
LED Forward Voltage (Refer to the specification of light bar)	**V_f**	-	-	53	V_{DC}	For reference Only
LED Forward Current at each LED channel	**I_f**	-	**400**	-	mA_{DC}	Vin=24 / 12V, Dim=Max Measured at Steady State

Note:

1. Manufactured by from Applied Green Light, Inc. has been applied for all the measurements.
2. The dimming mode (analog / PWM) is controlled by jump-key.
3. The LED forward voltage is determinate by LED die selection and LED bar layout. The value is for reference only. **Be sure the $V_f \times I_f \times 2 < P_{out,max}$.**