

SPECIFICATION

Product : LED Backlight Driver

Model Name : GH524A(P3)

GCCT Name : GCCT524PC

Dimming Type : **PWM (standard) & Analog (option)**

Mating LCD model : **Mitsubishi 15", AA150PD13**

April 2015

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Version	Date	Revision	Page
1.0	Feb 17, 2015	Initial version	
	Apr 24, 2015	Update - elec' parameters	

Rev.	0	0	0	0	0	0	0	0			
Page	1	2	3	4	5	6	7	8			

1. Design concept of Product

This is a DC-DC converter which is developed for driving 5 channels LED Lamp panel backlight system

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2. Feature

- **Very Trustworthy MTBF : 188,061 Hrs.**
- **Wide adjusted Brightness by PWM / Analog (option) dimming** -
- Compact size : refer to mechanical drawing**

3. Suitable Load

Applicable Model : AA150PD13, Mitsubishi 15" LCD Module

4. Electrical Characteristics

4.1 Absolute Maximum Ratings

Item	Symbol	Spec	Unit	Remarks
Input Voltage 1	Vin	10.8 ~ 13.2	V	
Input Voltage 2	On / Off	5.25	V	
Operating Temperature	Top	-30 ~ 85	°C	
Storage Temperature	Tstg	-30 ~ 85	°C	
Relative Humidity	RH	80	%	

4.2 Control Signal

Pin No.	Symbol	Status	Action	Remarks
CN1 #9	On / Off	High	Lamp - On	2.4 ~ 5.25V
		Low	Lamp - Off	0.8V Max

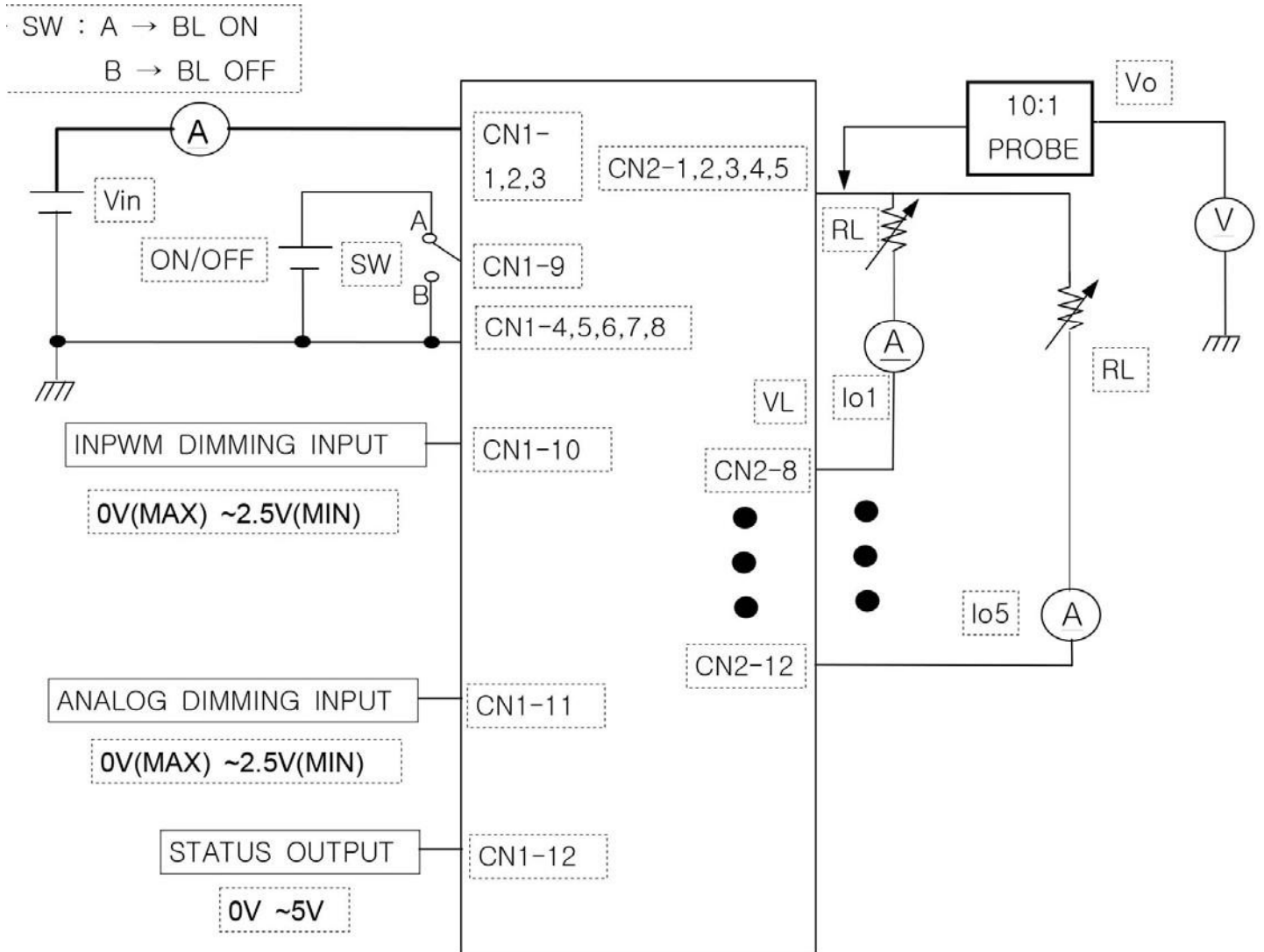
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4.3 Output Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Input Voltage	V in	-	10.8	12	13.2	Vdc
Input Current	I in	Vin=12V,DIM=100%	-	-	4.0	A
Output Voltage	V out	Vin=12V,DIM=100%	-	24	30	Vdc
Output Current	I out	Vin=12V,DIM=100%	140	150	160	mAmean
Backlight ON/OFF	On		2.4		5.25	Vdc
	Off		-0.3		0.8	
Frequency	F	Vin=12V,DIM=100%	270	300	330	kHz
PWM Signal	Fpwm			180		Hz
	Duty	Active High	20		100	%

4.4 Test Circuit

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5. Interface

5.1 CN1 Connector : 12505WR-12 (Yeon-Ho) or equivalent

Pin No	Symbol	Remarks	TDK CN1 pin No.
1,2,3	Vin	Voltage Input : 12V (typ)	1,2,3,4,5
4,5,6,7,8	GND	Ground	6,7,8,9,10
9	On/Off	LED drive On/Off Signal (Active HIGH)	11
10	VBR	External PWM Dimming (0 ~ 100%, 180Hz)	12
11	A - Dim	Having not been adopted	13

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12	Status	No Connection	14
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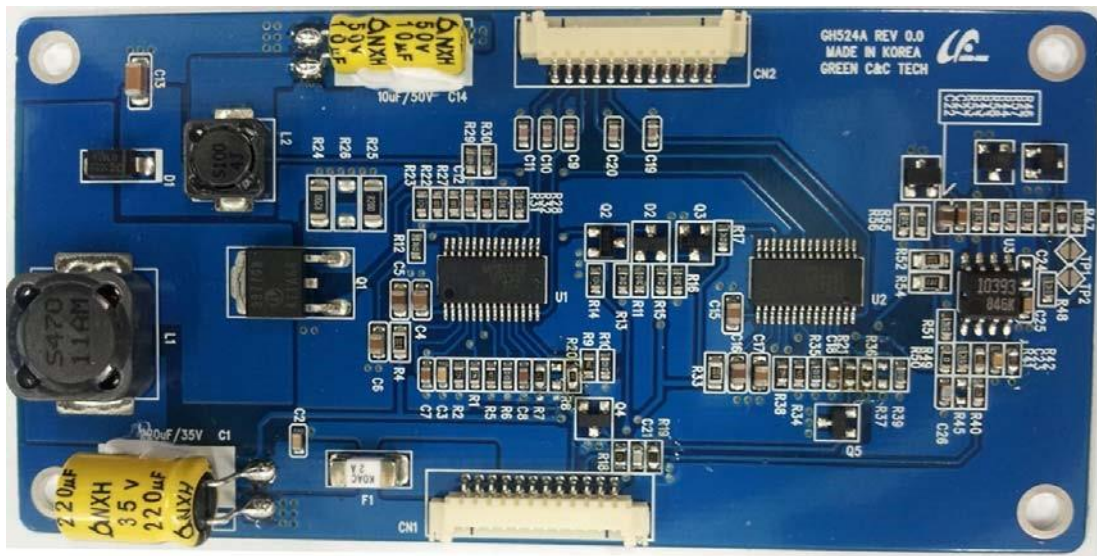
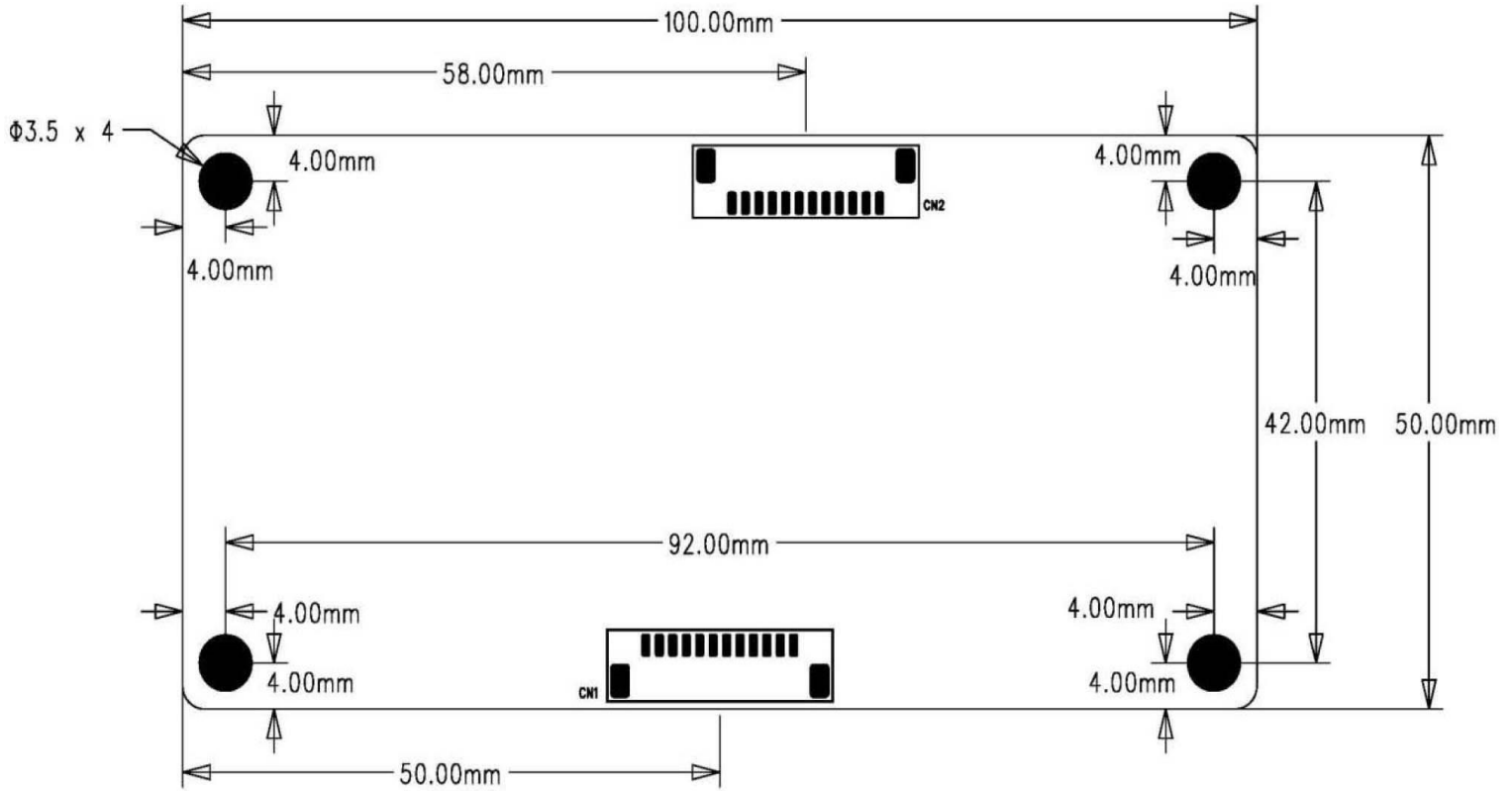
Note :

The manufacturer, Green C&C Tech decided not to adopt the analog dimming for this target LCD panel, Mitsubishi 15", when user selects the PWM dimming, the Analog dimming has to be connected with GND, in the same manner, when user selects the Analog dimming, the PWM has to be connected with GND

5.2 CN2 Connector : 12505WR-12 (Yeon-Ho) or equivalent

Pin No.	Symbol	Remarks
1,2,3,4,5	VLED	System Output (Anode)
6, 7	N.C	No Connection
8	RTN1	Cathode 1 (Return 1)
9	RTN2	Cathode 2 (Return 2)
10	RTN3	Cathode 3 (Return 3)
11	RTN4	Cathode 4 (Return 4)
12	RTN5	Cathode 4 (Return 5)

6. Dimension (100 x 50 mm, Tolerance -0.2mm, +0.8mm) and Pictures



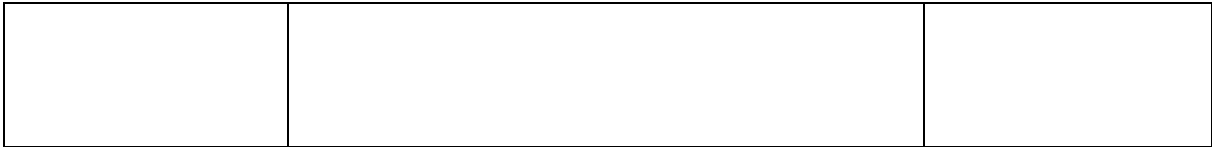
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7. The Criteria of Reliability Test

No.	ITEM	Conditions and Method
1	High Temperature, Storage Test	Temp : 60°C, Duration 500hrs
2	Low Temperature, Storage Test	Temp : -20°C Duration 500hrs
3	High Temperature, High Humidity Storage	Temp : 40°C Humid 95%RH, Duration 500hrs
4	High Temperature, High Humidity Operation test	Temp : 40°C Humid 95%RH, Duration 1000hrs
5	Thermal Shock Test	Temp -30°C↔ 70°C250cycle, (30min) (30min)
6	Vibration test	Amplitude :1.5mm, Frequency :10~55Hz Position : three perpendicular planes, Duration 1000hrs
7	High Temperature Operation test	Temp : 50°C Duration 72hrs
8	Low Temperature Operation test	Temp : 0°C Duration 72hrs

8. The applied norms for Safety of each component

Symbol	Name	Type No.	Manufacturer	Description
F1	FUSE	CCF1N7	KOA	UL FILE NO : E171861
		6123FF07-R	COOPER BUSSMAN	UL FILE NO : E19180
PCB	PRINTED WIRING BOARD	FR-4	WONKYUNG	UL FILE NO : E202541
			SEOKANG	UL FILE NO : E150774
			SONGDO	UL FILE NO : E250018
			BACKSONG	UL FILE NO : E205233
CN1	CONNECTOR	12505WR-12A00	YEONHO	UL:E108706
CN2,,CN3	CONNECTOR	12505WR-8A00	YEONHO	UL:E108706

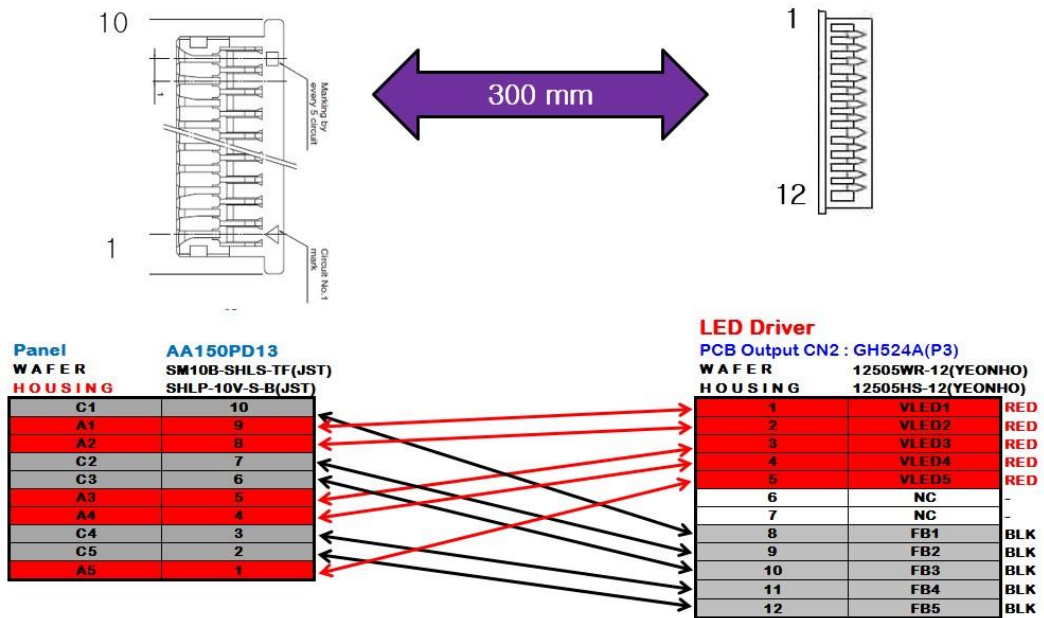


9. Connection cable (optional accessory)

9.1 Connection between LED driver and mating LCD panel

[MITSUBISHI 15" AA150PD13]

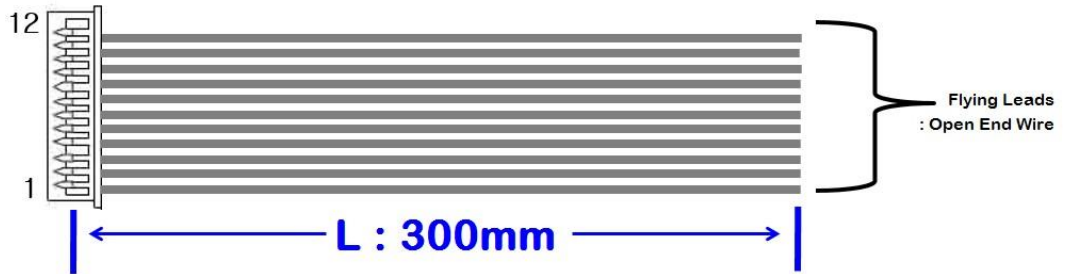
PN : CBL301-LED5CH-GH524A-STD



9.2 Connection between LED driver and customer's mating driver board



PN : CBL301-LED12V-GH524A-OPEN



W A F E R : 12505WR-12 (YEONHO)
 H O U S I N G : 12505HS-12 (YEONHO)

PIN	SPEC	COLOR	CONNECTION	CABLE LENGTH
1	LED INPUT 24V	WHT	FLYING LEAD	300mm
2	LED INPUT 24V	WHT	FLYING LEAD	300mm
3	LED INPUT 24V	WHT	FLYING LEAD	300mm
4	GND	WHT	FLYING LEAD	300mm
5	GND	WHT	FLYING LEAD	300mm
6	GND	WHT	FLYING LEAD	300mm
7	GND	WHT	FLYING LEAD	300mm
8	GND	WHT	FLYING LEAD	300mm
9	ON OFF	WHT	FLYING LEAD	300mm
10	P-DIM	WHT	FLYING LEAD	300mm
11	A-DIM	WHT	FLYING LEAD	300mm
12	NC	-	-	-

Standard Reliability Prediction Report

Part Number System
 Reference Des
 Date 3월 6, 2012
 Environment GB, GC - Ground Benign, Controlled
 Temperature 40.00



Description Top-level assembly
 File Name GH524A MTBF DATA.RPJ
 Time 1:57 오후
 Failure Rate 5.317422
 MTBF 188,061

Assembly Name	Part Number	Ref Des	Qty	Failure Rate	MTBF
System	System		1.00	5.317422	188,061