



# **Specifications and Applications**

## **LED Driving Board**

### **LED-21610**

Product Version: V1.0S



**RoHS Compliance**

**Issue Date:3rd-Nov-2009**

**Document Version: 1.3**



### 1. General

The LED-21610 driving board is designed to drive 6 strings of LED backlight module. LED-21610 is able to drive upto 10 white LEDs in series per string with constnat current. Onboard high quality converter drives LED strings and control the dimming of LED strings independently. It is a high efficiency and low profile driving board. Wide diming control allows users to set LED brightness smoothly. Additional power protection feature is able to protect LED module from damage by overcurrent or overvoltage.

### 2. Features

- Applicable to 6 LED Strings
- Low Profile and Compact Design
- Costant LED Current (10mA)
- PWM Dimming Control
- Short Circuit and Overload Protection
- External Power On/Off Control

### 3. Mechanical Characteristics

	L	W	H
Dimension	100mm	30mm	7.5mm
Weight	MAX. 24g		

### 4. Connectors

Conn. No.	Brand	Parts No
CN1	JST	S7B-PH-K
CN2	Molex	53261-15

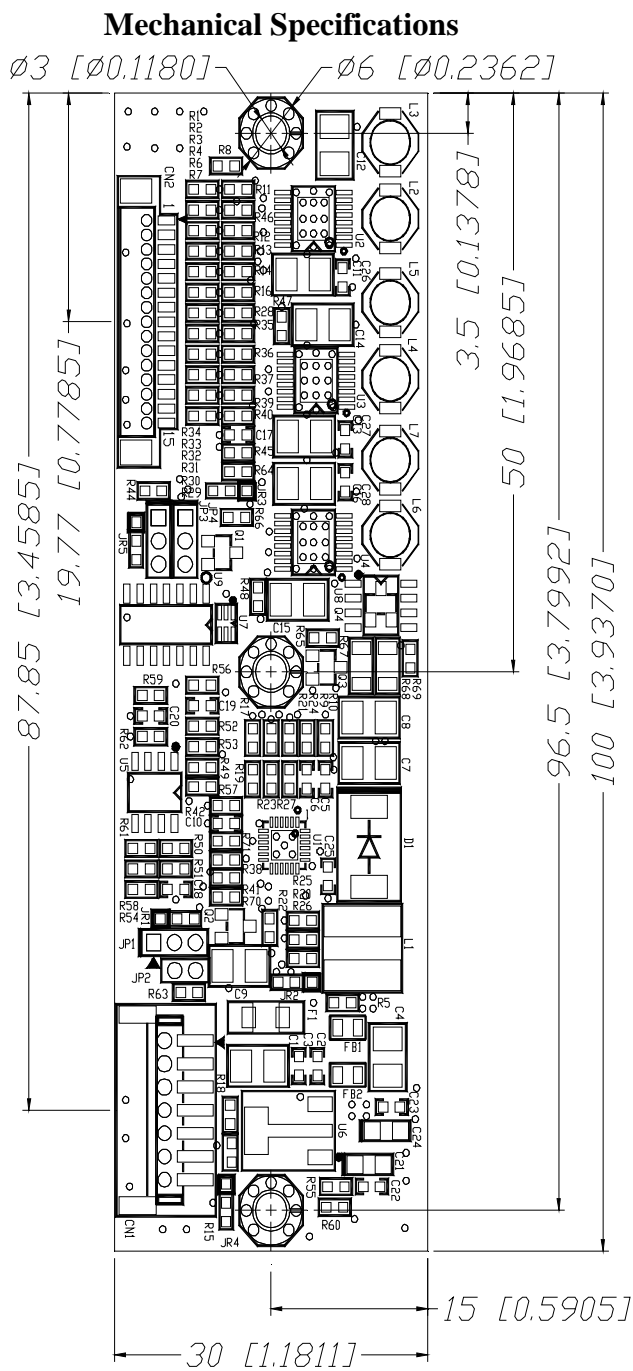
### 5. Pin Number



CN1 (pin1)



CN2 (pin1)



Max.Height:7.50mm

## 6. LCD Application

LCD Model	LCD Model	Remark
NEC-NL6448BC20-21C		

## 7. Operating Conditions

Item	Symbol	Conditions	MIN	MAX	Unit	Remark
Input Voltage	Vin		3.3	15	V	
Operating Temperature	Top	Ha ≤ 90%RH	-20	85	°C	
Storage Temperature	Tstg	Ha ≤ 95%RH	-30	100	°C	
Operating Humidity	Hop	Ta=0~55°C	20	90	%RH	
Storage Humidity	Hstg	Ta=20~80°C	-	95	%RH	

## 8. Operating Characteristics

Unless otherwise noted Vin=12 Volts DC and T=25°C

Item	Symbol	MIN	TYP	MAX	Unit	Remark
Input Voltage	Vin	3.3	12.0	15	V	
Input Current	I-in	310	320	340	mA	
LED String Voltage	V-led	-	26.82	31.5	V	
Efficiency	H	78	80	82	%	
PWM Control Duty Ratio		10	-	100	%	
PWM Control Frequency		180	-	25K	HZ	
PWM Swing Voltage		2.0	-	5.5	V	
Output Current (per String)	I-out	8	10	12	mA	
Brightness Control		5		0	V	

## 9. Connector Pin Description

9-1. (CN1) Input Connector			
Pin No.	Symbol	Description	Remark
1	BKLT	DC+12V	
2	BKLT	DC+12V	
3	GND	Ground	
4	GND	Ground	
5	ENA	Enable (ON=+5V ; OFF=0V)	
6	PWM	Brightness Control (0V-MAX, +5V-MIN)	
7	AR	NC	

9-2. (CN2) Output Connector			
Pin No.	Symbol	Description	Remark
1	LEDIN1	Anode1	
2	LEDIN2	Anode2	
3	LEDIN3	Anode3	
4	LEDIN4	Anode4	
5	LEDIN5	Anode5	
6	LEDIN6	Anode6	
7	LEDO1	Cathod1	
8	LEDO2	Cathod2	
9	LEDO3	Cathod3	
10	LEDO4	Cathod4	
11	LEDO5	Cathod5	
12	LEDO6	Cathod6	
13	ENA	Enable	
14	PWM	NC	
15	VCC	NC	

