LED DRIVER BOARD SPEC.

ZD3315-XXX

CUSTOMER:

CUSTOMER PART NO:

PART NO: **ZD3315-XXX**

REV: 0.1

Date: 2009.06.06

Doc No:	
CC	

Approval by :	Check by :	Design by :

Reversion History

Version	Date	Description	Note
Ver 0.1	2009.06.06	Initial spec is released	

GENERAL DESCRIPTION

The ZD3315 LED Driver Board contains 4 Channels of linear regulated ,low drop out current source, specially designed to drive up the LED's with 150mA source current each channel. The LED currents are set by external resistor. The Enable pin provide on-off function. Dimming can also be achieved by applying a DC voltage to the LED board.

Features

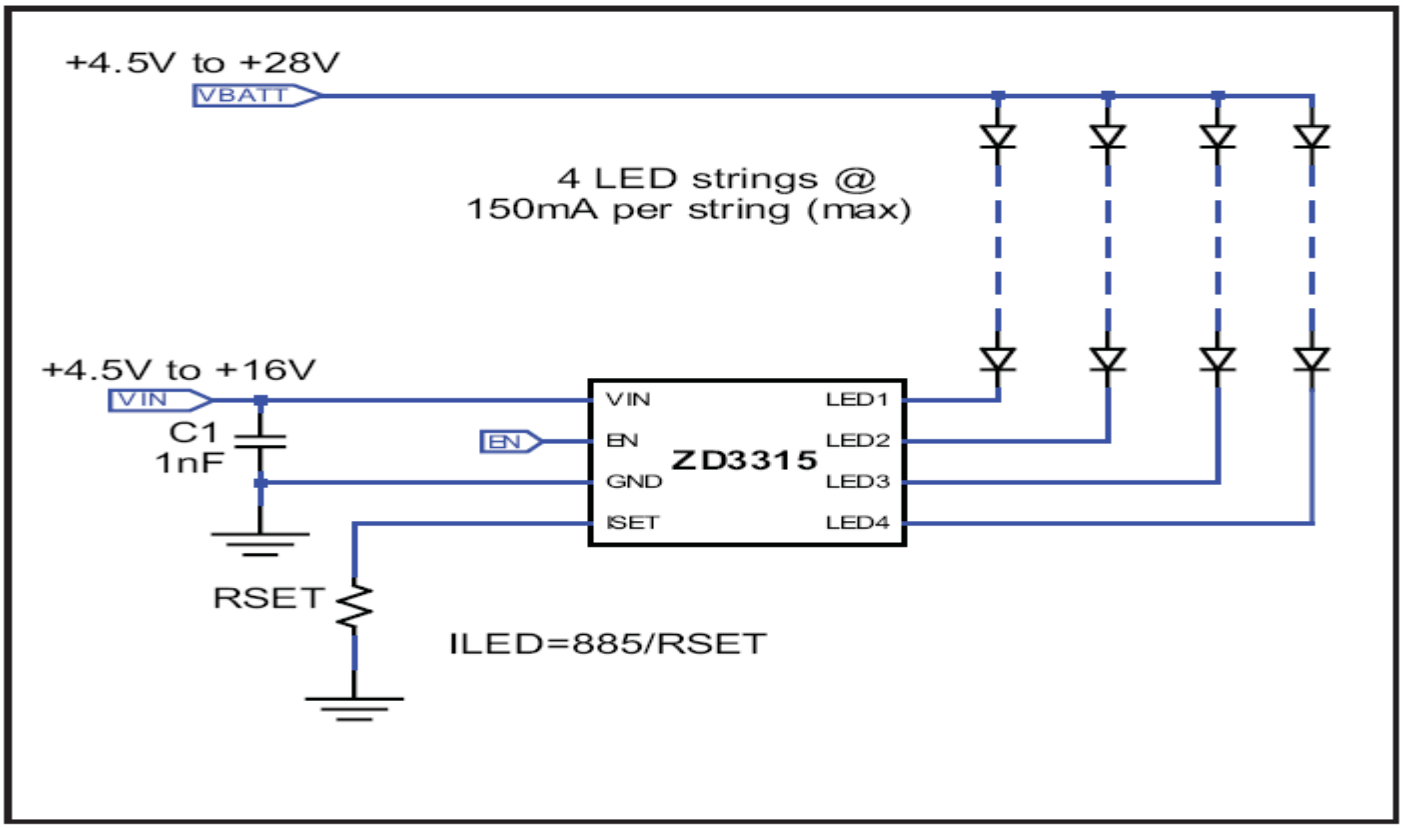
- **Small and compact size with low profile**
- **Drives 4 Channel of LED strings with Matched,Regulated Current Sources**
- **Low Drop out current Source provide Excellent current regulation over wide supply operation**
- **PWM Dimming can be achieved by applying a external DC voltage to control**
- **Thermal Protection is activated on 150 degree C**
- **RoHs compliance**

Operation Temperature: -40C ~ +85C
Storage Temperature : -40C~+85C

Application

- **LCD Panel LED backlight Driving**
- **LED Light-bar Driving**

Block Diagram



Ordering Information:

Part No: **ZD3315-XXX**

LED Board Output Current

LED Board Main code

Ex: **ZD3315-150** → LED board with 150mA

ZD3315-220 → LED Board with 220mA

Dimension Detail:

Board Dimension: 35mm X 15 mm X 5mm
Tolerance=0.2mm

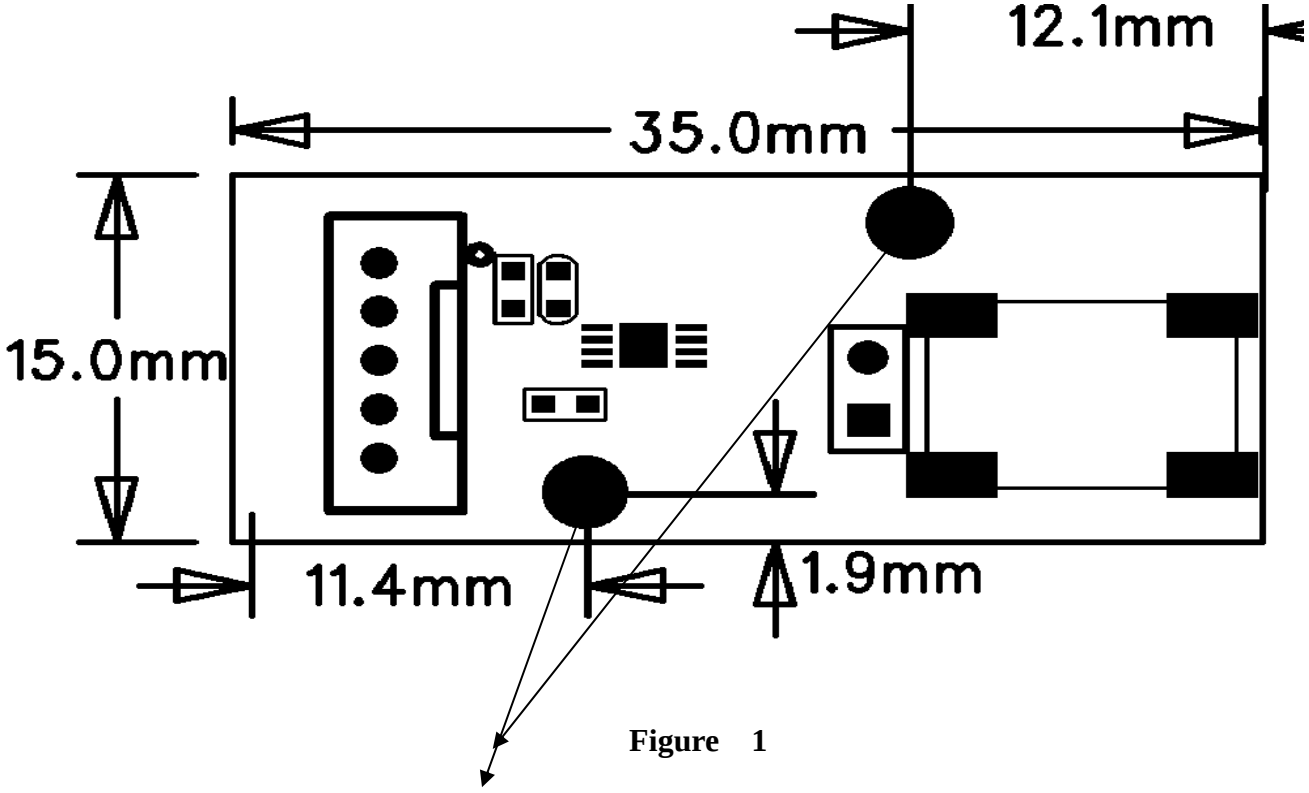
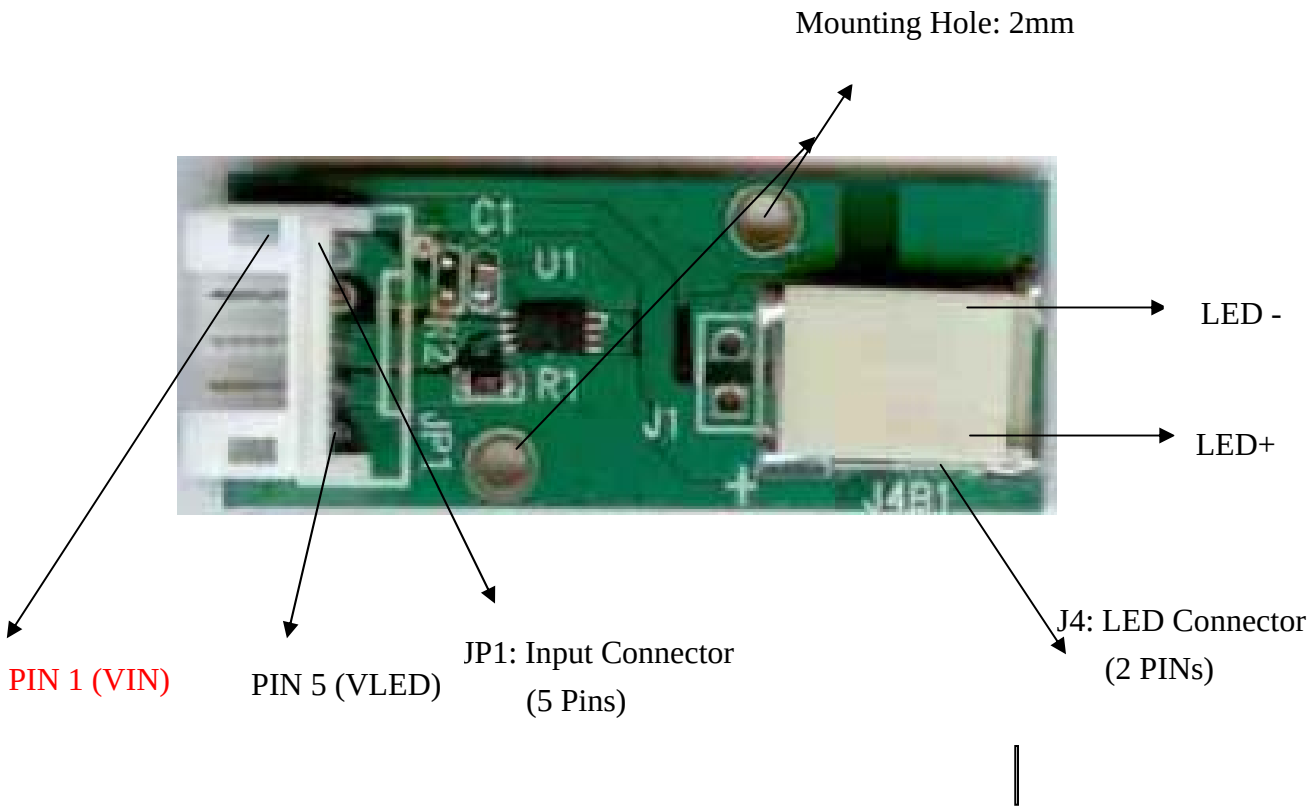


Figure 1

Fixation hole: Φ=2mm

Board Pin Detail:



Connector reference and Pin assignment

JP1: Input Connector –JST_PHR-5(Male, 5 Pin, Pitch=2.0mm)

NO	PIN NAME	Description
1	VIN	VCC IN (+4.5 ~ +16V)
2	GND	GROUND
3	ON-OFF	BACKLIGHT ON-OFF, Active High(on)
4	DIMMING	Dimming by applying Analog DC Voltage from 0 to 1.5V , Ground level make Max Brightness.
5	VLED	LED Input Voltage(VIN ~ +28V) or not connected(using R2)

J4: LED Output Connector –JST_BHSR-02VS-1

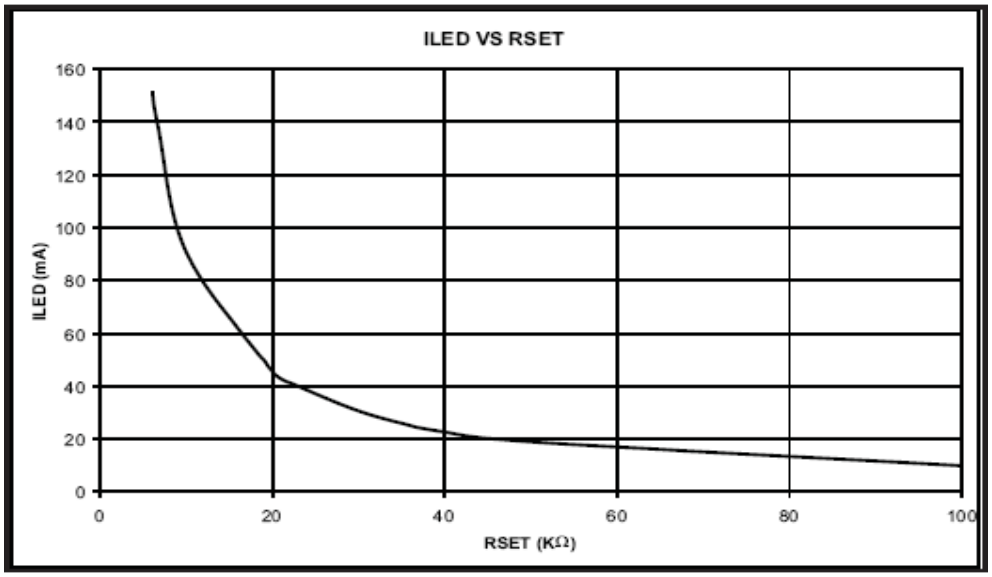
NO	SIGNAL NAME	
1	LED +	
2	LED -	

Electrical Characteristics

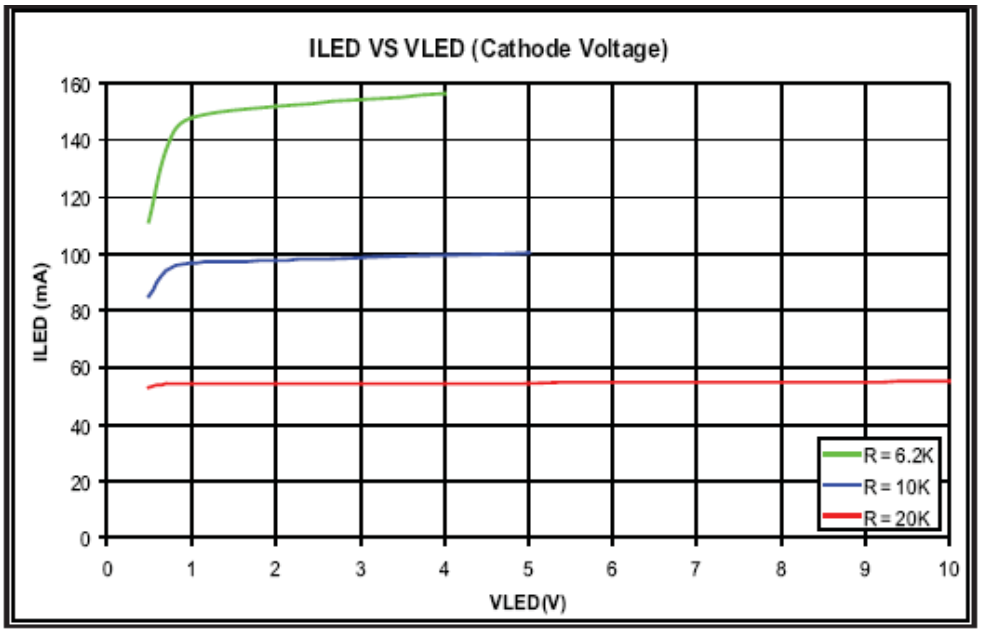
T_A = +25°C, VIN = EN = +5V, $VLED_{1~4}$=1V, RSET = 10kΩ; unless otherwise noted.

Parameter	Condition	Min	Typ	Max	Units
Operating Voltage (VIN)		4.5		16	V
ILED Current Scale Factor, K	ILED=[(Scale Factor)/(RSET)]	796	885	973	
LED Current (per channel)	RSET=6.2KΩ, VLED=1.5V, Average of $ILED_{1~4}$			150	mA
Supply Current (ICC)	$ILED_{1~4}$=100mA		3		mA
ILED in OFF Mode	EN=0V, VLED < 10V		1		μA
LED Current Line Voltage Regulation	ILED change per VIN volt change		0.2		%/V
LED Current Load Voltage Regulation	ILED=100mA, VLED=0.4V~5V		2		%/V
LED Current Matching	10mA to 150mA,		± 1.5	± 3	%
ISET Pin Voltage			1.5		V
EN Voltage High, V_{IH}		2		VIN	V
EN Voltage Low, V_{IL}		0		0.6	V
EN Pin Bias Current			10		μA
PWM Dimming Frequency				50	kHZ
Thermal Shutdown Temperature			150		°C

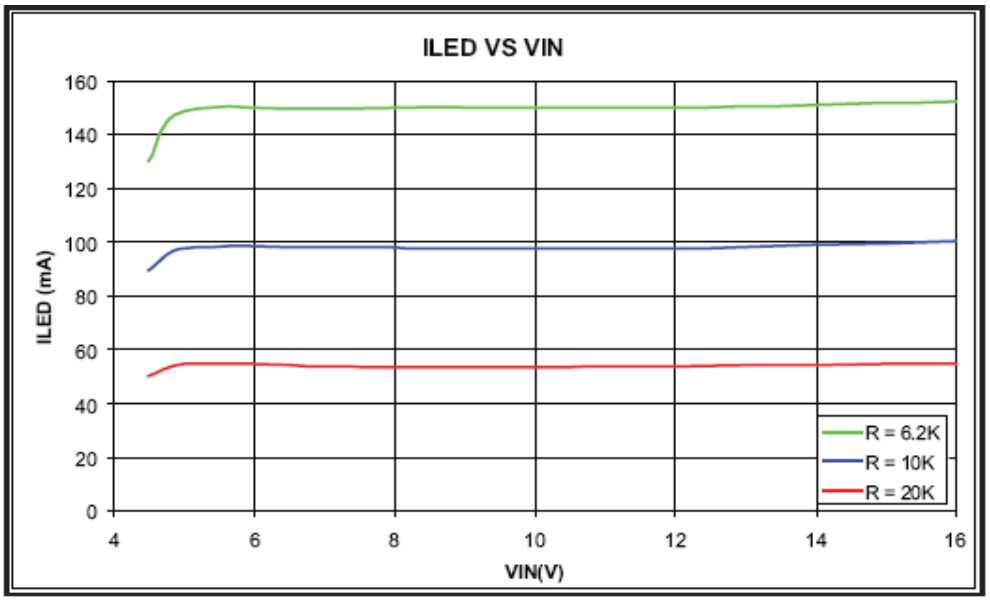
Typical Performance Test



LED(ILED) vs Rset (Per Channel)



Load Voltage Regulation ; LED current(ILED)vs VLED(per channel) with respect to Rset Setting



Load Voltage Regulation ; LED current(ILED)vs VIN (per channel) with respect to Rset Setting

Cross reference for Panel type & LED Board driver

Display Manufacturer	display part number	# LED string	# LEDs in series	total current needed (mA)	LED driver Part No.	RSet (Kohm)	VLED Input
PVI	PA050XSH	5	3	100	ZD3315-100	35.4	+12V
PVI	PD050VL1	8	3	160	ZD3315-160	22.1	+12V
PVI	PD050VX6	8	3	160	ZD3315-160	22.1	+12V
PVI	PD057VT1/4	12	3	240	ZD3315-240	14.8	+12V
PVI	PD057VU5/7	12	3	240	ZD3315-240	14.8	+12V
PVI	PD064VT7	2	4	300	ZD3315-300	11.8	+14V
PVI	PD080SL3	14	3	280	ZD3315-280	12.6	+12V
PVI	PD104SLF	13	3	260	ZD3315-260	13.6	+12V
PVI	PD121XL4/6	18	3	360	ZD3315-360	9.8	+12V
PVI	PM070WL3/4	11	3	220	ZD3315-220	16.1	+12V
PVI	PM070WT2/3	11	3	220	ZD3315-220	16.1	+12V
PVI	PM070WX5/7	11	3	220	ZD3315-220	16.1	+12V
TIANMA	TM104SDH03	6	6	120	ZD3315-120	29.5	+19.2