



FORENEX

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FI589W

(DC/DC) LED Driving Board

Reference Manual

(Preliminary)

Model Number:

FI589A-5S4P with LED connector W2

FI589B-5S4P with LED connector W1 & W4

Document No: doc-fi589W-V10

PCB Bare Board: PB58922-V11

Approved By	Checked By	Prepared By





Revision histories

Rev. No.	Date	Substantial Changes
1.0	2017/2	First issue.





General Description

The front-end of FI589W series is a highly efficient DC/DC to provide a wide input of voltage range. The back-end is a constant-current LED driver which can drive a number of LEDs in series & parallel configuration.

Features:

- Wide input rang : DC 12V
- Provide output Typ. 1.28W.
- Flexible digital(PWM) for dimming control.
- The Soft-start function minimize inrush current while powering up.
- Multiple LED Protections:
 - LED Open/ Short protection
 - Over-current Limit protection
 - Over-temperature protection
 - Over-voltage protection
 - Under voltage lockout (UVLO)
- Low profile and light weight: 88 mm(L) x 32 mm(W) x 9.2 mm(H).
- RoHS Compliant.

Item	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input Voltage	V _{in}	GND=0V	11.5	12	30	V
LED Output Voltage per string	V _{led}	V _{in} = TYP.	15.5	16	-	V
LED Total Output Current	I _{led}		-	80	-	mA
Backlight on/off	BL_EN	DC high	1.5	-	5	V
		DC low	-	-	0.8	V
Brightness Control	BL_PWM	Frequency	100	300	20k	Hz
		PWM of duty	1(dark)		100(bright)	%
		Amplitude	1.5	-	5	VIH
Operating Temperature	T _{op}	Ha=80%RH	-30		80	°C
Storage Temperature	T _{stg}	Ha=90%RH	-40		120	°C





Pin Assignment

Input Connector(W3)

Connector: (JST-S6B-2.0mm) or compatible, side entry			
Pin num	Description	I/O	Remark
Pin1	Vin	P	
Pin2	Vin	P	
Pin3	BL_EN	I	Note1
Pin4	BL_PWM	I	
Pin5	GND	P	
Pin6	GND	P	

Note1: It is recommended on the start-up sequence that the BL_EN signal comes after input voltage (Vin) and LED backlight connection established.

LED Backlight Connector (W1&W4) for FI589B series

Connector: (JST-S2B-2.0mm) or compatible, side entry			
Pin num	Description	I/O	Remark
Pin1	LED Cathode (-)	P	
Pin2	LED Anode (+)	P	Vled

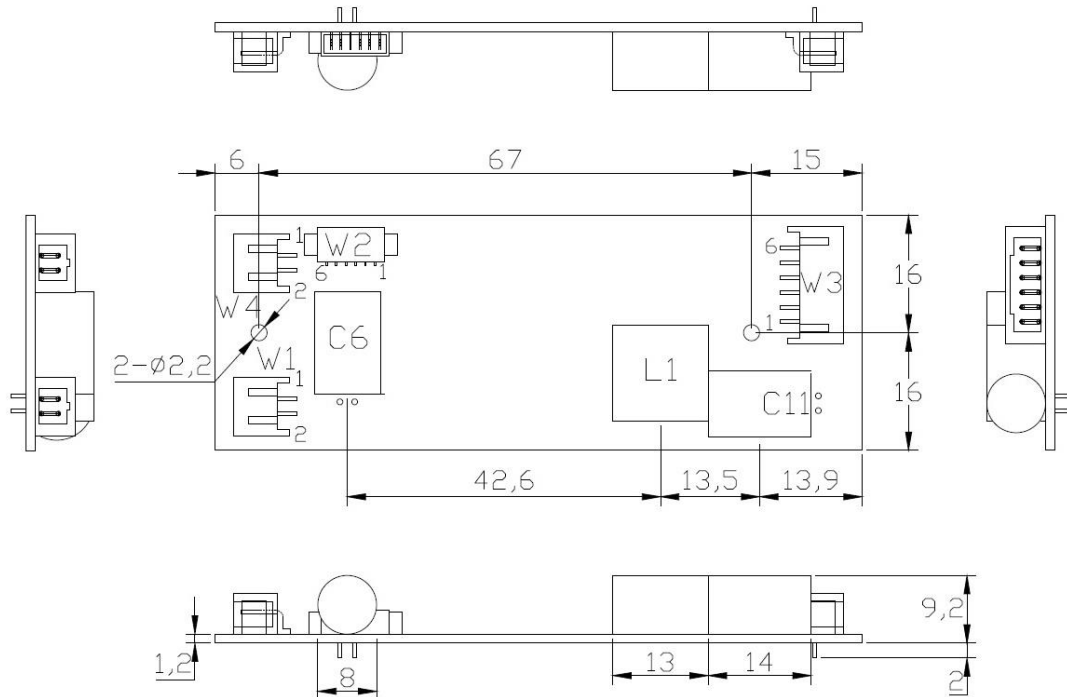
LED Backlight Connector (W2) for FI589A series

Connector: (JST-S6B-1.25mm) or compatible, side entry			
Pin num	Description	I/O	Remark
Pin1	LED Anode(+)	P	Vled
Pin2	LED Anode(+)	P	Vled
Pin3	LED Anode(+)	P	Vled
Pin4	LED Cathode(-)	P	
Pin5	LED Cathode(-)	P	
Pin6	LED Cathode(-)	P	





Mechanical specification



LED-DRIVER-FI589W

FI589A-xSxP



FI589B-xSxP

