

EPLED12 SERIES—Constant Current LED Driver

DC-DC Converter

Features

EFFICIENCY UP TO 90%
CONSTANT CURRENT LED DRIVER
WIDE INPUT AND OUTPUT VOLTAGE RANGE
INPUT VOLTAGE UP TO 36V
PWM DIMMING CONTROL
SHORT CIRCUIT AND OVERTEMPERATURE PROTECTED
INTERNAL SMD TECHNOLOGY
FULLY ISOLATED PLASTIC CASE WITH IP67 LEVEL
UL 94V-0 PACKAGE MATERIAL
RoHS COMPLIANT

Description

EPLED12 series is a high efficiency, constant current and Buck-Boost DC/DC converter. The LED DRIVER operates from an input voltage 9Vdc to 36Vdc and provides an externally adjustable output current of up to 600mA and output power up to 16 watts. It is able to include the function of Over temperature protection(OTP), Over Voltage protection(OVP), PWM Dimming and ON/OFF.

The device can extensively be used for General Industrial High Power LED Lighting, Desk Lights and Room Lighting, Building and Street Lighting, Industrial Display Backlight etc.

IP67

CE

FC

REACH
COMPLIANT

RoHS
COMPLIANT

Selection Guide

MODEL NUMBER	INPUT NOMINAL VOLTAGE (VDC)	INPUT VOLTAGE RANGE (VDC)	OUTPUT VOLTAGE RANGE (VDC)	OUTPUT CURRENT RANGE (mA)	DIMMING CONTROL	EFF (% Typ.)
EPLED120.30(D)(W)	12	9-36	2-40	0-300	PWM	90
EPLED120.35(D)(W)	12	9-36	2-40	0-350	PWM	90
EPLED120.50(D)(W)	12	9-30	2-32	0-500	PWM	90
EPLED120.60(D)(W)	12	9-28	2-30	0-600	PWM	90

Partnumbers Structure

Series

EPLED12 Series

Coding Scheme

EPLED-x1-x.x2-y1-zzz

CLE = Series Name

x1 = Input Voltage

x.x2 = Output Current

y1=Package Style(D=PINS)(W=WIRED)

Zzz = 0~9 , A~Z or blank for market purpose.

Specifications

<u>Project</u>	<u>Working Condition</u>	<u>Min.</u>	<u>Typ.</u>	<u>Max.</u>	<u>Unit</u>
Input Voltage(absolute maximum)				36	VDC
Recommended Input Voltage		9	12	36	VDC
Input Filter			Capacitor		
Output Voltage range	Vin=24V	2		40	VDC
Output Current Accuracy			±4	±6	%
Output Current Stability	Vin=24V, VOUT=2-40V		±4	±6	%
Operating Frequency			350		KHz
Short Circuit Protection			Continuous		
Temperature Coefficient	-40°C~+71°C ambient			±0.03	%°C
Operating Temperature	300mA/350mA	-40		71	°C
	500mA/600mA	-40		65	°C
Storage Temperature		-55		125	°C
Humidity(D) (W)				95	%
Over Temperature Shutdown	Internal IC Temperature		145		°C
	Temperature Hysteresis		10		°C
Maximum Case Temperature				110	°C
MTBF (using MIL-HDBK 217F)	Operating Temperature		350000		Hours
Case Material			Non Conductive plastic		
Potting Material			Epoxy (UL94V-0)		
Case Size(D)(W)			31.8*20.3*12.2		mm
Weight(D)			15.6		g
Weight(W)			18		g
EMI Radiated Emissions			EN55015		
Dust Test & Waterproof Test (D) (W)			IP67		

PWM Dimming and On/Off Control (Leave open if not use)

Project	Working Condition	Min.	Typ.	Max.	Unit
Input Voltage Range			5	10	VDC
ON/OFF Control	ON (DIM ~ -VIN)	2			VDC
	OFF (DIM ~ -VIN)			0.2	VDC
Quiescent Input Current in Shutdown Mode	Vin=24			1	mA
PWM Frequency	For Linear Operation (measured 1%~100% Dimming)	100		1K	Hz

PWM Dimming and ON/OFF Control (measured 1%~100% Dimming)

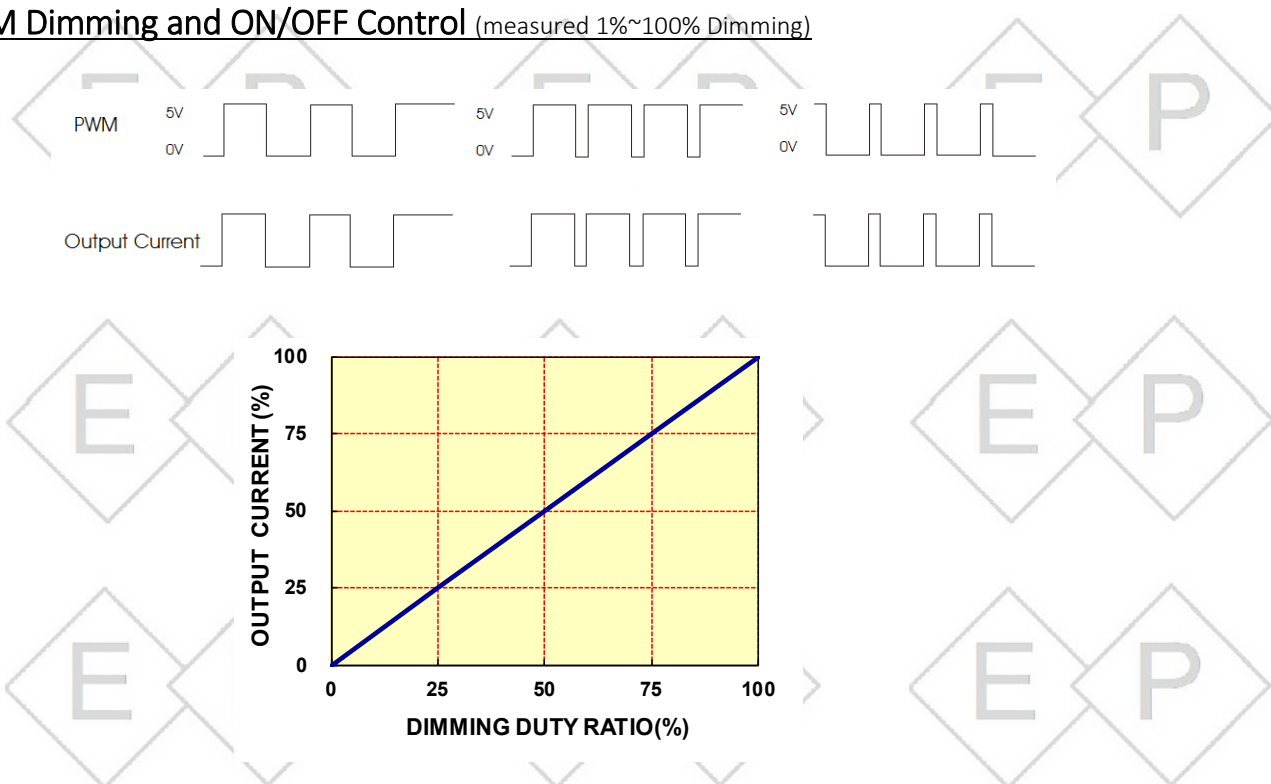


Fig. 1 Dimming Duty Cycle: 1%-100%

The dimming of LEDs can be performed by applying PWM signals to DIM pin.

The above Fig.1 show good linearity in dimming application of EPLED Series

A logic low (below 0.2) at DIM PIN will disable the device and shut off the current flow to the LED array

Typical Applications

PWM Dimming control circuit

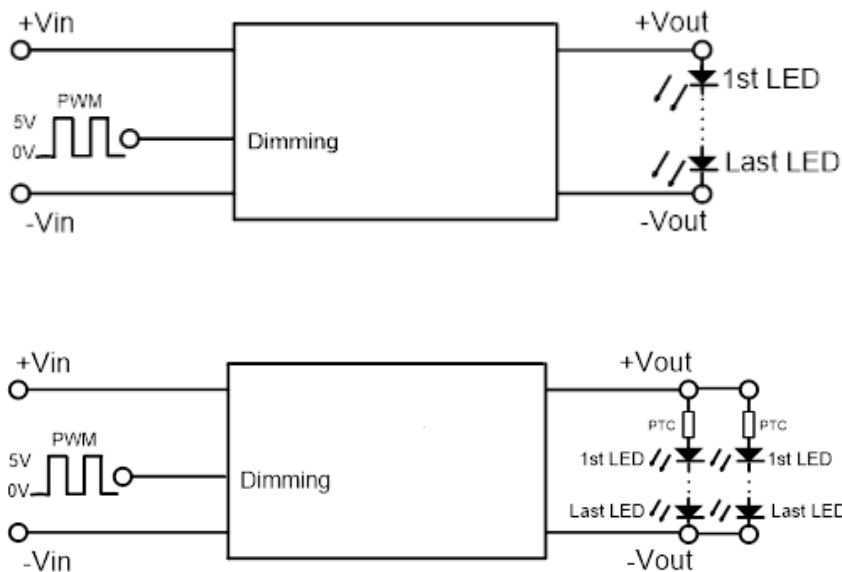
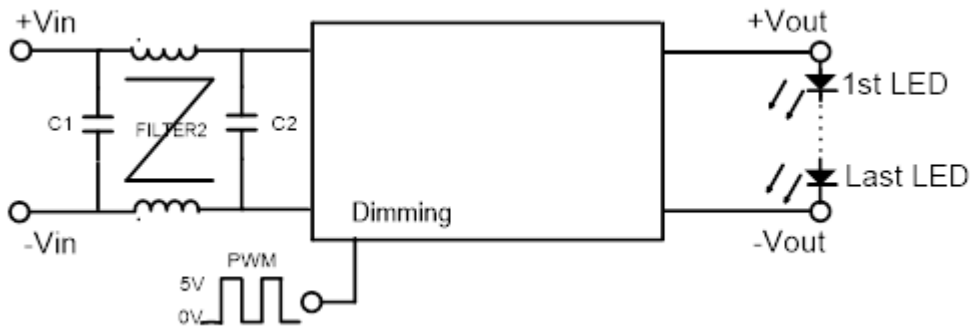


Fig.2

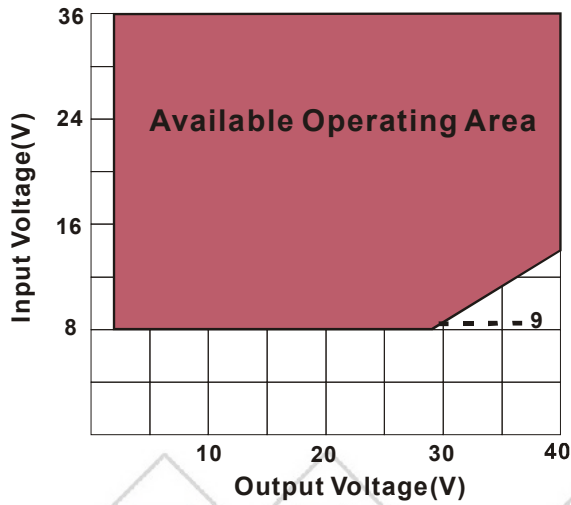
In actual use, if necessary to protect LED, a PTC of positive temperature coefficient may be connect to the input end of every channel or all channels, as shown in Fig.2.

EMI filter circuit



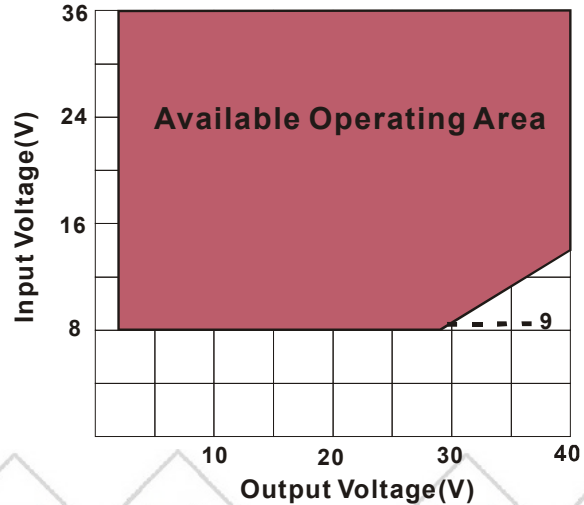
Safe Operating Area

OUTPUT CURRENT 0.30A



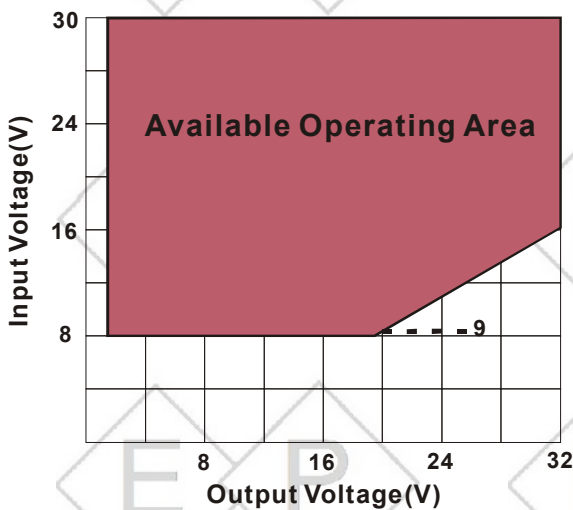
Vin9V up to Vout=27V
Vin12V up to Vout=36V

OUTPUT CURRENT 0.35A



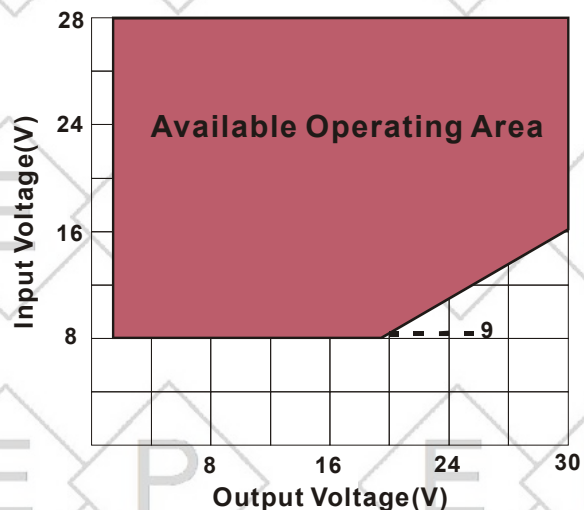
Vin9V up to Vout=27V
Vin12V up to Vout=36V

OUTPUT CURRENT 0.50A



Vin9V up to Vout=20V
Vin12V up to Vout=24V
Vin16V up to Vout=32V

OUTPUT CURRENT 0.60A



Vin9V up to Vout=18V
Vin12V up to Vout=24V

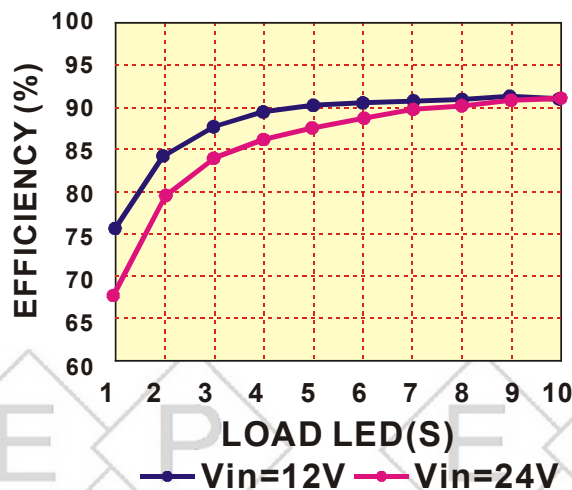
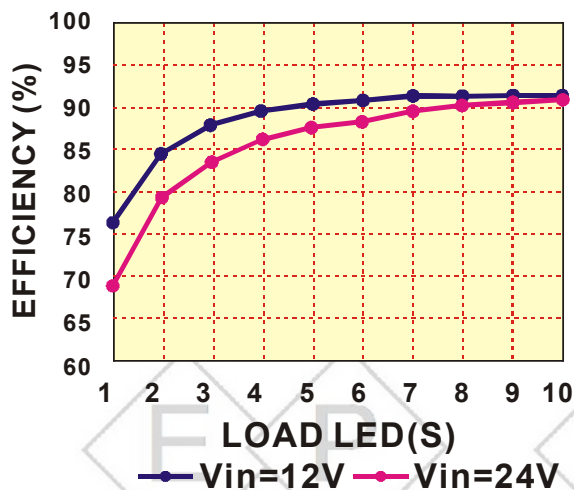
Efficiency vs. Load

TA=25°C

1-LED VF=3.6V; 2-LED VF=7.2V; 3-LED VF=10.8V; 4-LED VF=14.4V; 5-LED VF=18V;

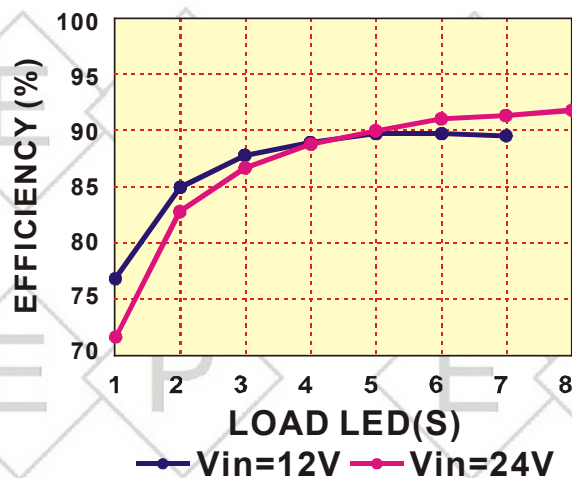
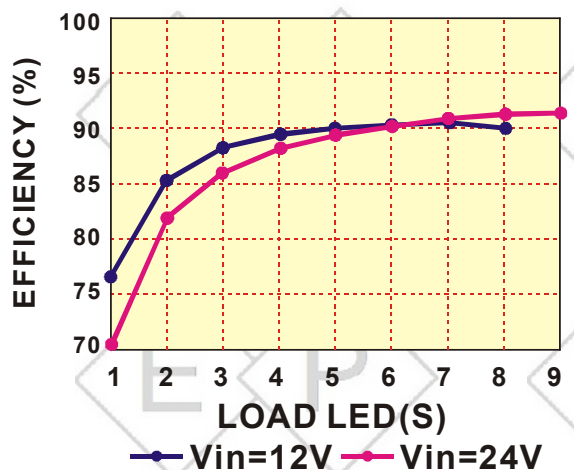
OUTPUT CURRENT 0.30A

OUTPUT CURRENT 0.35A

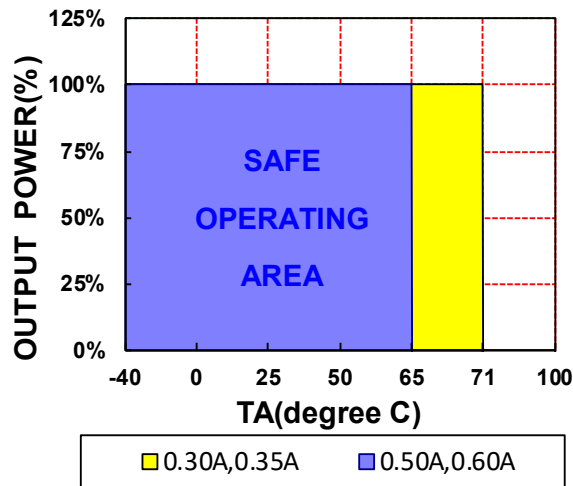


OUTPUT CURRENT 0.50A

OUTPUT CURRENT 0.60A

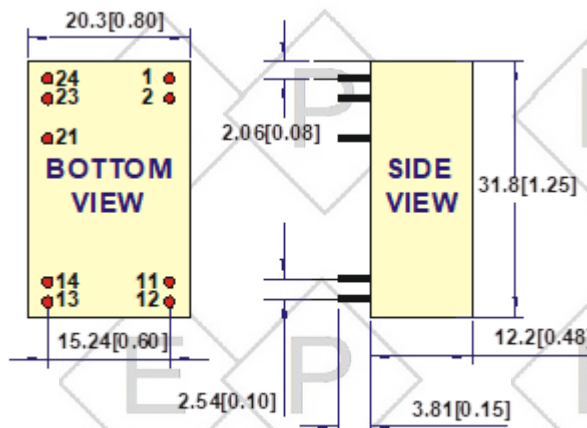


Derating Curve



Mechanical Dimensions & Recommended Footprint Details

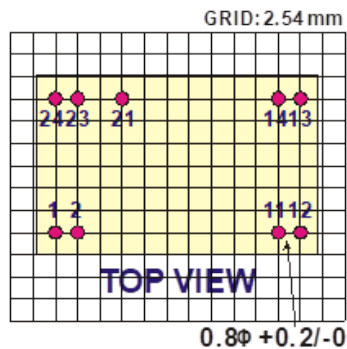
PACKAGE "D"



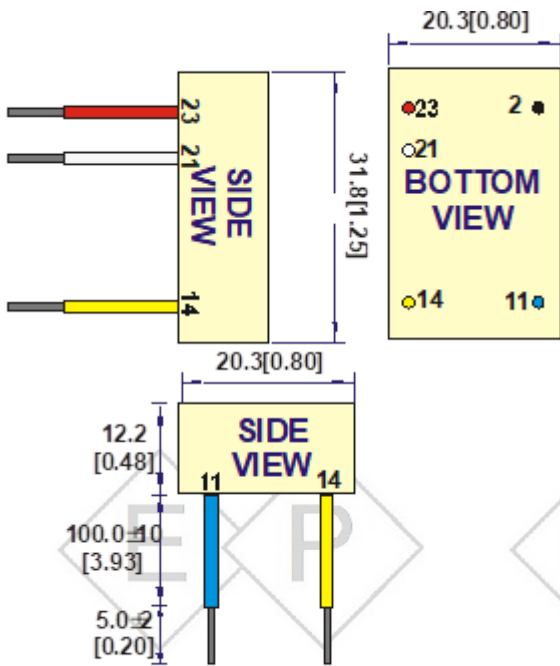
PINOUT	COMMENT
1 & 2	-Vin Don't connect to -Vout
11 & 12	-Vout LED - Connection
13 & 14	+Vout LED + Connection
21	ON/OFF/PWM Dimming Leave open if not used
23 & 24	+Vin DC Supply

All dimensions are in mm[inches]

NOTE:
Pin Size is Tolerance 0.60Φ ±0.05mm
All dimensions are in mm(Inches)
Tolerance .X or .XX= ±0.5mm



PACKAGE "W"



PINOUT	COMMENT
2 (Black) -Vin	Don't connect to -Vout
11 (Blue) -Vout	LED - Connection
14 (Yellow) +Vout	LED + Connection
21 (White) PWM DIM	ON/OFF/PWM Dimming Leave open if not used
23 (Red) +Vin	DC Supply

NOTE:

All dimensions are in mm(Inches)

1. Case Tolerance .x or .xx ±0.5mm

2. Wire outside diameter=1.6mm ±0.1

3. Wire core diameter =0.75mm ±0.1

4. Wire is UL 3385/CAS TEM listed #22AWG /300V /105°C Rated

All dimensions are in mm[inches]



Spezifikationen können sich ohne Vorankündigung ändern.

Für etwaige fehlerhafte Angaben oder unvollständige Bezeichnungen kann keine Haftung übernommen werden.