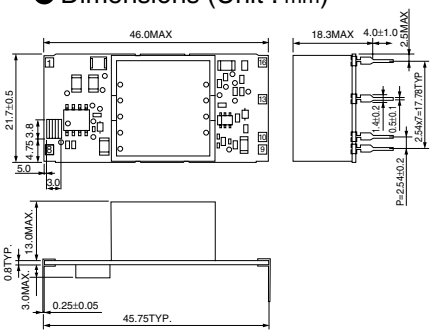
High-power LED Drivers for Illumination BP5845W

AC100V input, constant current

● Absolute Maximum Ratings

Parameter	Symbol	Limits	Units	Remarks
Input voltage	Vi	170	V	DC
Output voltage (limits)	Vo	36	V	Io=360mA
Output voltage (no loal)	Vo	39	V	Io=0mA
Output current	Io	378	mA	
Output control terminal voltage	VCTL	12.5	V	
Withstand voltage	BV	1.8	kV	1sec (between primary and secondary) While pin 1 and 8 are shorted and pins 9-16 a shorted, a voltage is applied between them.
Maximum surface temperature	Tcmax	105	°C	Ambient temperature + the module self-heating ≦ Tcmax
Operating temperature range	Topr	−20 to +80	°C	Refer to derating curve
Storage temperature range	Tstg	−25 to +85	°C	

● Dimensions (Unit : mm)

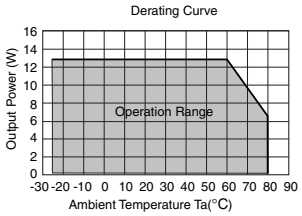


● Electrical Characteristics

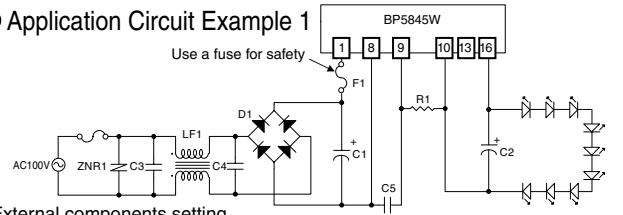
Parameter	Symbol	Spec			Units	measurement circuit	Remarks
		Min.	Typ.	Max.			
Input voltage range	Vi	113	141	170	V	-	
Output current	Io1	342	360	378	mA	Figure 1	Vi=141V,R1=0.78Ω
Output voltage range	Vo	15.0	-	36	V	Figure 1	Vi=141V,Io=360mA
Output ripple voltage	Vp	-	0.1	0.5	Vp-p	Figure 1	Vi=141V,Io=360mA
Conversion efficiency	η	83	88	-	%	Figure 1	Vi=141V,Vo=36V,Io=360mA

NOTE 1 Maximum output current varies depending on ambient temperature. Refer to the derating curve.
NOTE 2 Spike noise is not included in output ripple voltage.

● Derating Curve



● Application Circuit Example 1

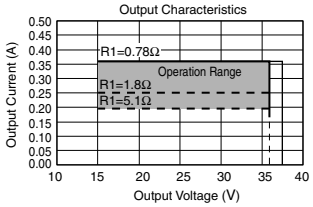


Pin No.	Terminal name
1	Input terminal (+)
2-7	Skip
8	Input terminal (−)
9	Output capacitor connection terminal (−)
10	LED connection terminal (cathode)
11-12	Skip
13	VCTL terminal
14-15	Skip
16	LED connection terminal (anode)

External components setting

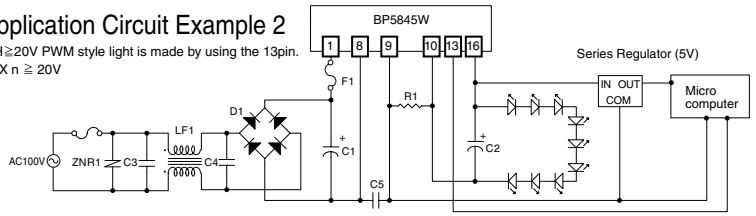
Symbol	Application	Characteristics	Recommended parts
C1	Input capacitor	22μF / 250V General purpose	Manufactured by RUBYCON 250YXA22M
C2	Output capacitor	100μF / 50V Low Impedance Iteam	Manufactured by NICHIKON UHD1H101M
R1	Output current setting resistor	0.78Ω 1/4W (Io=360mA)	Manufactured by ROHM MCR10EZHFLR820, MCR03EZHF15R0 A parallel connection
C3,C4	Noise reducsion capacitor	It should be installed when required. above 125V 0.1 to 0.22μF	Manufactured by MATUSHITA ECQE1A224KF
C5	Noise reducsion capacitor	2200pF (Products with basic isolation certification)	Manufactured by TDK CS11-E2GA222MYNS
D1	Diodebridge	400V/1A	Manufactured by SHINDENGEN D1UBA80
F1	Fuse	125V/1A	
LF1	Line filter	10mH	
ZNR1	Varistor	Use a varistor. Be sure to use it to protect this product from thunder surge and the static electricity.	

● Output Characteristics



● Application Circuit Example 2

VoH≧20V PWM style light is made by using the 13pin.
VF X n ≧ 20V

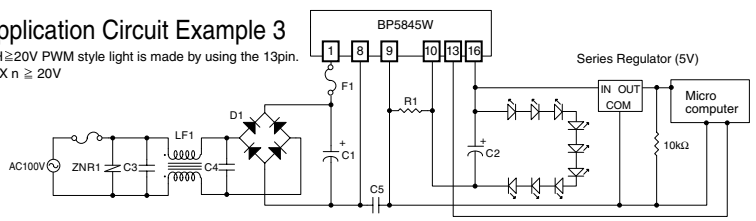


Use condition (Ta=25°C)

NO	Parameter	Symbol	Spec			Units	measurement circuit	Remarks
			Min.	Typ.	Max.			
1	LED OFF Voltage	VoL	12.7	13.4	14.1	V	Figure 1	VoH≧20V
2	CTL Terminal H Revel	VCTL(H)	3	5	10	V	-	Output OFF (VoL)
3	CTL Terminal L Revel	VCTL(L)	0	-	0.5 or OPEN	V	-	Output ON (VoH≧20V)

● Application Circuit Example 3

VoH≧20V PWM style light is made by using the 13pin.
VF X n ≧ 20V

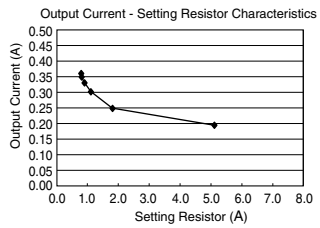


Use condition (Ta=25°C)

NO	Parameter	Symbol	Spec			Units	measurement circuit	Remarks
			Min.	Typ.	Max.			
1	LED OFF Voltage	VoL	12.7	13.4	14.1	V	Figure 1	VoH≧20V
2	PWM Signal H Revel	VCTL(H)	3	5	10	V	-	
3	PWM Signal L Revel	VCTL(L)	0	-	0.5	V	-	
4	PWM Signal cycle	fosc	1	10	20	kHz	-	Note 3

NOTE 3 Frequency is to be decided after you confirm it with the actual opportunity.

● Setting current



Setting resistor how to calculate R1
R1=0.1374/(0.91 x Io-0.151)
Io : Output current

NOTE) A maximum output current is set to 360mA.
Operations beyond this limit are prohibited.

Power Module Usage Precautions

Safety Precautions

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   [b] Incorporation of redundant circuits in the case of single-circuit failure
2) The products are designed for use under normal conditions. Application in special environments can cause a deterioration in product performance. Therefore, verification and confirmation of product performance, prior to use, is recommended. The following environments are considered to be 'special':
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   [b] In contact with liquids, such as water, oils, chemicals, or organic solvents
   [c] In areas where exposure to the sea air or corrosive gases (i.e. Cl_2, H_2S, NH_3, SO_2, NO_2) can occur
   [d] In places where the products may be in contact with static electricity or electromagnetic waves
   [e] In proximity to heat-producing items, plastic cords, or flammable materials
   [f] In contact with sealing or coating products, such as resin
   [g] In contact with unclean solder or exposed to water or water-soluble cleaning agents used after soldering
   [h] In areas where dew condensation occurs
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4) The Company is not responsible for any problems resulting from use of the products under conditions not recommended herein.
5) The Company should be notified of any product safety issues. Moreover, product safety issues should be periodically monitored by the customer.

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