High-power LED Drivers for Illumination BP5843

AC100V input, constant current

● Absolute Maximum Ratings

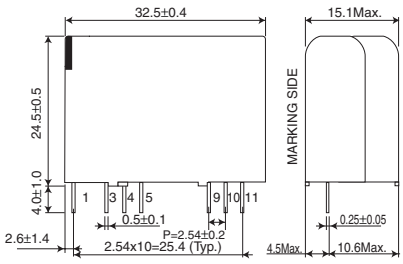
Parameter	Symbol	Limits	Unit	
Input voltage	Vi	170	V	DC
Output voltage	Vo	12	Vpk	
Withstand voltage	BV	1.8	kV	1s (between primary and secondary)
Maximum surface temperature	Tcmax	105	°C	Ambient temperature + module self-heating ≤ Tcmax
Operating temperature range	Topr	−20 to +80	°C	Refer to derating curve
Storage temperature range	Tstg	−25 to +85	°C	

● Electrical Characteristics

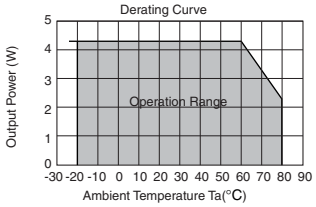
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage range	Vi	113	141	170	V	
Output current	Io	332	350	369	mA	Vi=141V, R1=0.82Ω (1%)
Output voltage range	Vo	2.5	–	12	V	Vi=141V, Io=350mA
Output ripple voltage	Vp	–	–	0.5	Vp-p	Vi=141V, Io=350mA
Power conversion efficiency	η	80	85	–	%	Vi=141V, Vo=12V, Io=350mA

∗1 Maximum output current varies depending on ambient temperature ; please refer to derating curve.
∗2 Spike noise is not included in output ripple voltage.

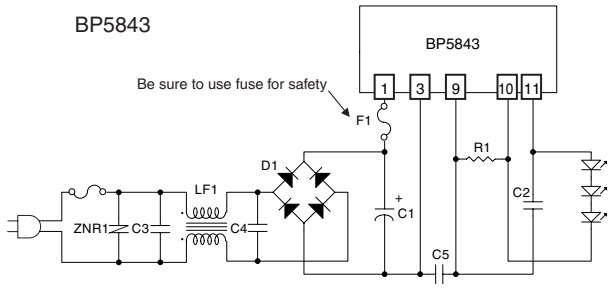
● Dimensions (Unit : mm)



● Derating Curve

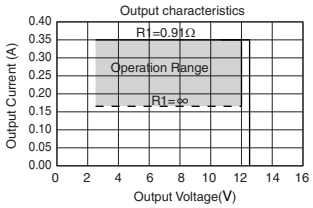


● Application circuit

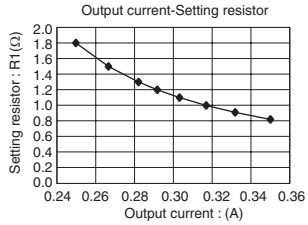


Pin No.	Function
1	Input terminal (+)
2	Skip
3	Input terminal (–)
4	NC
5	NC
6	Skip
7	Skip
8	Skip
9	Output capacitor connection terminal
10	LED connection terminal (cathode)
11	LED connection terminal (anode)

● Output Characteristics



● Setting current



How to calculate R1
R1=0.13741/(0.91 x Io-0.151)
Io : Output current

External components setting

C1 : Input Capacitor	10μF/250V
C2 : Output Capacitor	40μF/25V Ceramics capacitor
R1 : Output current setting resistor	0.82Ω ±1 % 1/4W (Io=350mA)
C3, C4: Noise Removal Capacitor	Please use the capacitor, if necessary. Capacitance : 0.1μF to 0.22μF Rated voltage : 250V or higher
C5 : Noise Removal Capacitor	2200pF (Basic insulation)
D1: Diode bridge	800V/1A
F1: Fuse	Fuse must be used for safety
LF1: Line Filter	10mH
ZNR1: Varistor	Varistor must be used. It protects this part from lighting surge and static electricity.