



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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### 3.3V/ 300mA Output

## Step-down DC/DC Converter(Non-isolated)

**BP5224-33**

### ●Absolute Maximum Ratings

| Parameter                   | Symbol             | Limits      | Unit |
|-----------------------------|--------------------|-------------|------|
| Input voltage               | V <sub>i</sub>     | 24          | V    |
| Operating temperature       | T <sub>opr</sub>   | −20 to +80  | °C   |
| Storage temperature         | T <sub>stg</sub>   | −25 to +105 | °C   |
| Maximum surface temperature | T <sub>cmax</sub>  | 105         | °C   |
| Maximum output current      | I <sub>opeak</sub> | 300         | mA   |

## ●Electrical Characteristics

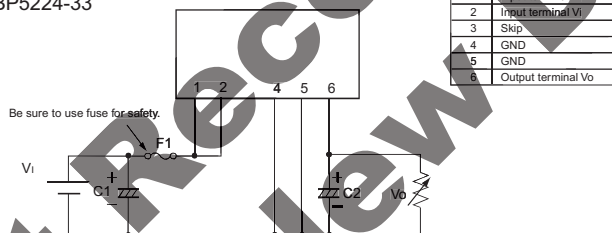
| Parameter                   | Symbol | Min. | Typ. | Max. | Unit | Conditions       |
|-----------------------------|--------|------|------|------|------|------------------|
| Input voltage               | $V_i$  | 7.0  | 16.0 | 18.0 | V    | DC               |
| Output voltage              | $V_o$  | 3.14 | 3.3  | 3.46 | V    |                  |
| Output current              | $I_o$  | —    | —    | 300  | mA   | <sup>*1</sup>    |
| Line regulation             | $V_r$  | —    | 0.03 | 0.10 | V    | $V_i=7$ to 18V   |
| Load regulation             | $V_l$  | —    | 0.07 | 0.15 | V    | $I_o=0$ to 300mA |
| Output ripple voltage       | $V_p$  | —    | 0.06 | 0.15 | Vp-p | <sup>*2</sup>    |
| Power conversion efficiency | $\eta$ | 68   | 71   | —    | %    |                  |

\*1 Maximum output current varies depending on ambient temperature : please refer to derating curve.

\*2 The output ripple voltage may vary depending on the capacitance, environment, and location of peripheral components. Especially, right attention has to be paid to aluminum electrolytic capacitor, because ESR changes greatly at the time of the low temperature and output ripple voltages increase.

## ●Application Circuit

BP5224-33



Please verify operation and characteristics in the customer's circuit before actual usage.  
Ensure that the load current does not exceed the maximum rating.

## External Component Specifications

► F1: FUSE

Be sure to use a fuse for safety.

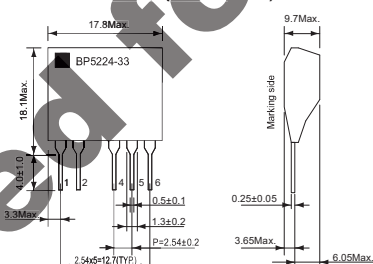
C1: Input capacitor

Rated voltage : More than 50V  
Capacitance : more than 100 $\mu$ F, low impedance type  
Rated ripple current : More than 0.2Arms

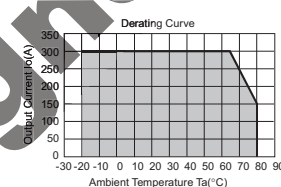
C2: Output capacitor

Rated voltage : More than 10V  
Capacitance : 220 to 680 $\mu$ F, low impedance type  
Rated ripple current : More than 0.2Arms  
Evaluate under actual operating conditions since it affects the output ripple voltage.

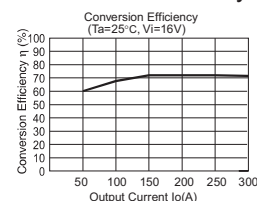
●Dimensions (Unit : mm)



## Derating Curve



### ● Conversion Efficiency



- Load Regulation

