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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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100VAC Input/-12VDC (300mA) Output

Non-Isolated AC/DC Converter

BP5061

● Absolute Maximum Ratings

| Parameter | Symbol | Limits | Unit |
|-----------------------------|--------------------|-------------|------------------|
| Input voltage | Vi | −170 | V |
| Output current | Io | 300 | mA _{pk} |
| ESD endurance | V _{surge} | 2 | kV |
| Operating temperature range | T _{opr} | −25 to +80 | °C |
| Storage temperature range | T _{sta} | −25 to +105 | °C |

● Electrical Characteristics

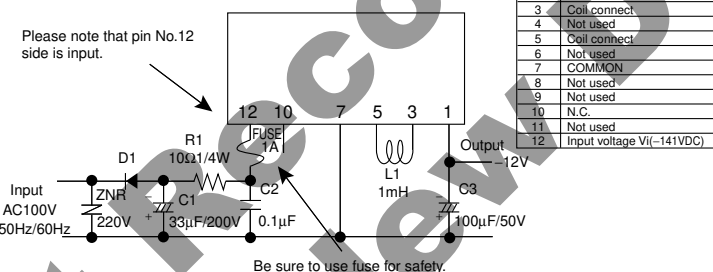
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Conditions |
|-----------------------------|--------|-------|-------|-------|-----------|--|
| Input voltage range | V_i | -113 | -141 | -170 | V | DC (80 to 120VAC) |
| Output voltage | V_o | -11.0 | -12.0 | -13.0 | V | $V_i = -141V$, $I_o = 200mA$ |
| Output current | I_o | 0 | - | 300 | mA | $V_i = -141V$ *1 |
| Line regulation | V_r | - | 0.04 | 0.15 | V | $V_i = -113V$ to $-170V$, $I_o = 200mA$ |
| Load regulation | V_l | - | 0.05 | 0.15 | V | $V_i = -141V$, $I_o = 0$ to $200mA$ |
| Output ripple voltage | V_p | - | 0.07 | 0.15 | V_{p-p} | $V_i = -141V$, $I_o = 200mA$ *2 |
| Power conversion efficiency | η | 70 | 78 | - | % | $V_i = -141V$, $I_o = 300mA$ |

*1 Maximum output current varies depending on ambient temperature ; please refer to derating curve

*2 Spike noise is not included in output ripple voltage.

● Application Circuit

BP5061



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

FUSE: Fuse

Use a quick-acting fuse of 1 A

► C1: Input smoothing capacitor

Capacitance : 22 to 100 μ F Rated voltage : 200V or higher
Ripple current is 0.13Arms or greater.

C2: Noise reduction capacitor

Capacitance : 0.1 to 0.22 μ F Rated voltage : 200V or higher
Use a film or ceramic capacitor. Evaluate under actual conditions.

C3: Output smoothing capacitor

Capacitance : 100 to 470 μ F Rated voltage : 25V or higher,
ECR is 0.4 Ω max. Ripple current is 0.25Arms or higher.
Evaluate under actual operating conditions.

D1: Rectifier diode

In the absolute maximum ratings, the reverse peak voltage should be 400V or higher, the average rectifying current should be 1A or higher, and the peak surge current should be 20A or higher.
(Full-wave rectification can be used.)

L1: Choke coil

Coil for switching regulator. The inductance should be 1mH, the rated direct current should be 0.6A or greater in order to prevent overheating or abnormal oscillation.

R1: Noise reduction resistor

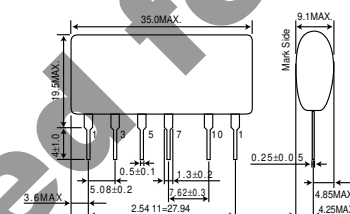
10 to 22Ω 1/4W

ZNR: Varistor

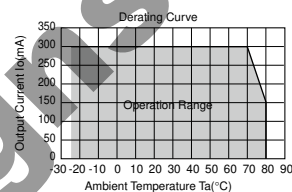
Determine the ideal value through actual testing.

A varistor is required to protect against lightning surges and static electricity.

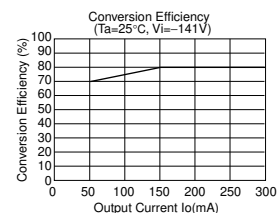
● Dimensions (Unit : mm)



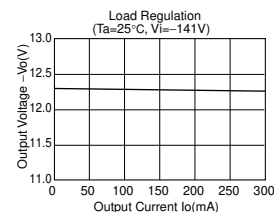
- Derating Curve



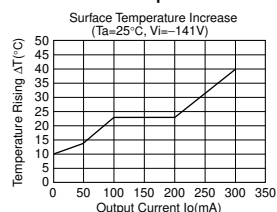
● Conversion Efficiency



- Load Regulation



● Surface Temperature Increase



Power Module Usage Precautions

Safety Precautions

- 1) The products are designed and manufactured for use in ordinary electronic equipment (i.e. AV/OA/telecommunication/amusement equipment, home appliances). Please consult with the Company's (ROHM) sales staff if intended for use in devices requiring high reliability (e.g. medical/transport/aircraft/spacecraft equipment, nuclear power/fuel controllers, automotive/safety devices) and whose malfunction may result in injury or death. In this case, failsafe measures must be taken, including the following:
 - [a] Installation of protection circuits in order to improve system safety
 - [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':
 - [a] Outdoors, exposed to direct sunlight or dust
 - [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
- 3) The products are not designed to be radiation resistant
- 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.

Application Notes

- 1) A sufficient margin must be allowed if changes are made to the peripheral circuit due to variations in the inherent tolerances of the external components as well as transient and static characteristics. In addition, please be aware that the Company has not conducted investigations on whether or not particular changes in the example application circuits would result in patent infringement.
- 2) The application examples, their constants, and other types of information contained herein are applicable only when the products are used in accordance with standard methods.
Therefore, if mass production is intended, sufficient consideration to external conditions must be made.

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 - [b] Problems arising from the use of the products listed herein
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BP5061 - Web Page

[Distribution Inventory](#)

| | |
|-----------------------------|---------|
| Part Number | BP5061 |
| Package | SIP12 |
| Unit Quantity | 200 |
| Minimum Package Quantity | |
| Packing Type | Tray |
| Constitution Materials List | inquiry |
| RoHS | Yes |