

100-220VAC Input/5VDC (500mA) Output

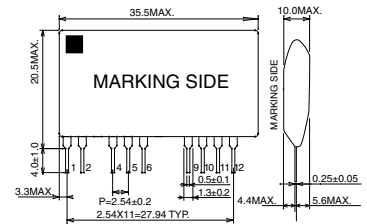
# Isolated AC/DC Converter

**BP5720-5**

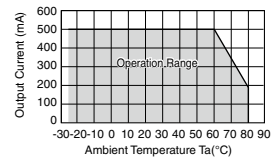
## ● Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit	Conditions
1-pin input voltage	V <sub>D</sub>	500	V	
4-pin input voltage	V <sub>ND</sub>	+30 / -5	V	
1-pin input current	I <sub>D</sub>	250	mA	
Maximum power	P <sub>o</sub>	2.5	W	Refer to the derating curve
Withstanding voltage	V <sub>I</sub>	2.5	kVrms	1 sec (primary - secondary : 1 - 6Pin, 9 - 12Pin short)
Allowable maximum surface temperature	T <sub>cmax</sub>	105	°C	Ambient temperature + The module self-heating ≤ T <sub>cmax</sub>
Operating temperature range	T <sub>opr</sub>	-25 to +80	°C	
Storage temperature range	T <sub>stg</sub>	-25 to +105	°C	

## ● Dimensions (Unit : mm)



## ● Derating Curve



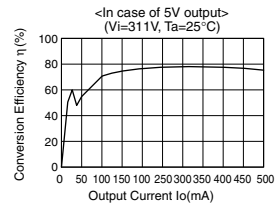
## ● Electrical Characteristics

(Unless otherwise noted, V<sub>i</sub>=141V, I<sub>o</sub>=500mA, T<sub>a</sub>=25°C) (V<sub>o</sub>=5V, R<sub>3</sub>/R<sub>4</sub>=open)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V <sub>i</sub>	113	141	374	V	I <sub>o</sub> =500mA
Output voltage	V <sub>o</sub>	4.75	5.0	5.25	V	
Output current	I <sub>o</sub>	0	-	500	mA	
Line regulation	ΔV <sub>r</sub>	-	10	100	mV	V <sub>i</sub> =113V to 374V
Load regulation	ΔV <sub>L</sub>	-	15	100	mV	I <sub>o</sub> =0mA to 500mA
Output ripple voltage	Δγ	-	100	250	mVp-p	V <sub>i</sub> =141V *1
Power conversion efficiency	η	70	78	-	%	

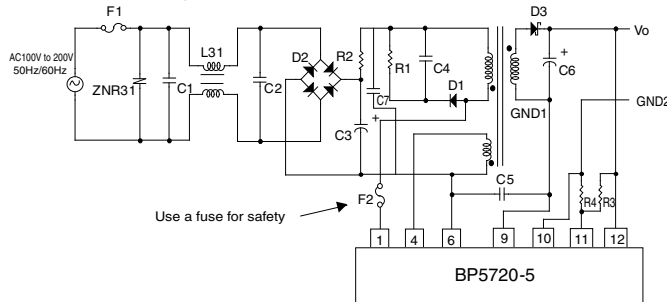
\*1: Measured peak-to-peak, ripple current bandwidth (spike noise not included).

## ● Conversion Efficiency



## ● Application Circuit

External Component Layout



# 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<sub>2</sub>, H<sub>2</sub>S, NH<sub>3</sub>, SO<sub>2</sub>, NO<sub>2</sub>) 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.

## Notes Regarding Industrial Property

- 1) The specifications included herein contain information related to the Company's industrial property. Their use other than pertaining to the relevant products is forbidden. Duplication and/or disclosure to a third party without express written permission is strictly prohibited.
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  - [b] Problems arising from the use of the products listed herein
- 3) The Company prohibits the purchaser from exercising or using the intellectual/industrial property rights or any rights belonging to or are controlled by the Company, other than the right to use, sell, or dispose of the products.

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