

12V/250mA Output

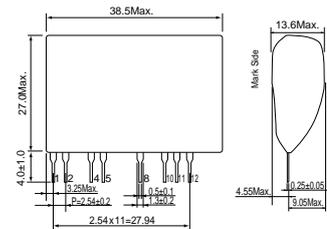
Isolated DC/DC Converter

BP5324A

● Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit
Input voltage	V_i	7	V
Maximum output current	I_{opeak}	250	mA
Operating temperature range	T_{opr}	-25 to +80	°C
Storage temperature range	T_{stg}	-25 to +85	°C
Isolation voltage	V_{iso}	500	Vrms

● Dimensions (Unit : mm)



● Electrical Characteristics

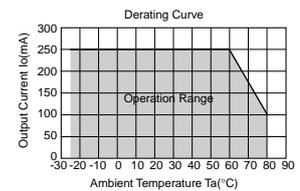
($T_a=25^\circ\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage range	V_i	4.5	5.0	5.5	V	
Output voltage	V_o	11.4	12.0	12.6	V	$V_i=5\text{V}$, $I_o=250\text{mA}$
Output current	I_o	0	–	250	mA	$V_i=5\text{V}$ *1
Line regulation	V_L	–	0.01	0.05	V	$V_i=4.5$ to 5.5V , $I_o=200\text{mA}$
Load regulation	V_R	–	0.23	0.5	V	$V_i=5\text{V}$, $I_o=0$ to 250mA *2
Output ripple voltage	V_p	–	0.03	0.15	Vpp	$V_i=5\text{V}$, $I_o=250\text{mA}$
Power conversion efficiency	η	65	74	–	%	$V_i=5\text{V}$, $I_o=250\text{mA}$ *2

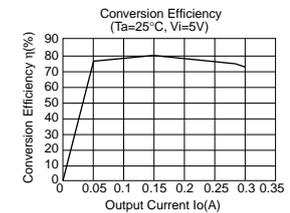
*1 Maximum output current varies depending on ambient temperature ; please refer to derating curve.

*2 Please refer to Load regulation, Conversion efficiency.

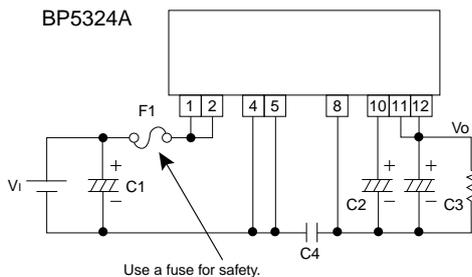
● Derating Curve



● Conversion Efficiency



● Application Circuit



Pin No.	Function
1	Input terminal (5V)
2	Input terminal (5V)
3	Not used
4	Input terminal (0V)
5	Input terminal (0V)
6	Not used
7	Not used
8	Output GND terminal
9	Not used
10	Capacitor connect
11	Output terminal
12	Output terminal

Use a fuse for safety.

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 Components Settings

- F1: Fuse Use a 2.5A fuse
- C1: Input Capacitor Capacitance : 100 to 220 μF Rated voltage : 16V or higher .
- C2: Output Capacitor Capacitance : 100 μF , Rated voltage : 25V or higher.
- C3: Output Capacitor Capacitance : 100 to 470 μF , Rated Voltage : 25V or higher.
- C4: Noise Reduction Capacitor Capacitance : 4700 to 0.1 μF , Rated Voltage : AC500V or higher.

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. Cl₂, H₂S, NH₃, SO₂, NO₂) 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

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- 2) Product information and data, including application examples, contained in the specifications are for reference purposes only; the Company does not guarantee the industrial/intellectual property rights or any other rights of a third party. Accordingly, the Company shall not bear responsibility for:
 - [a] Infringement of the intellectual property rights of a third party
 - [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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Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

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