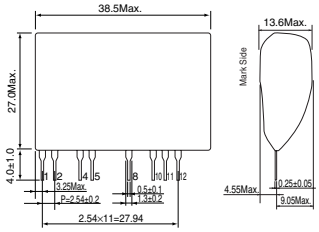
Isolated DC/DC Converter BP5324A

12V/250mA output type

●Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit
Input voltage	V_{IN}	7	V
Maximum output current	Iopeak	250	mA
Operating temperature range	Topr	−25 to +80	°C
Storage temperature range	Tstg	−25 to +85	°C
Isolation voltage	V_{ISO}	500	Vrms

●Dimensions (Unit : mm)

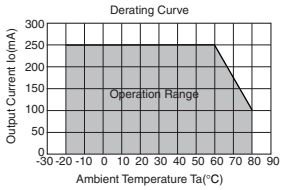


●Electrical Characteristics

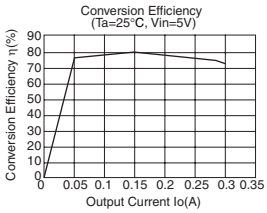
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage range	V_{IN}	4.5	5.0	5.5	V	
Output voltage	Vo	11.4	12.0	12.6	V	V_{IN}=5V, Io=250mA
Output current	Io	0	–	250	mA	V_{IN}=5V ∗1
Line regulation	VL	–	0.01	0.05	V	V_{IN}=4.5 to 5.5V, Io=200mA
Load regulation	VR	–	0.23	0.5	V	V_{IN}=5V, Io=0 to 250mA ∗2
Output ripple voltage	Vp	–	0.03	0.15	Vpp	V_{IN}=5V, Io=250mA
Power conversion efficiency	η	65	74	–	%	V_{IN}=5V, Io=250mA ∗2

∗1 Maximum output current varies depending on ambient temperature ; please refer to derating curve.
∗2 Please refer to Load regulation, Conversion efficiency.

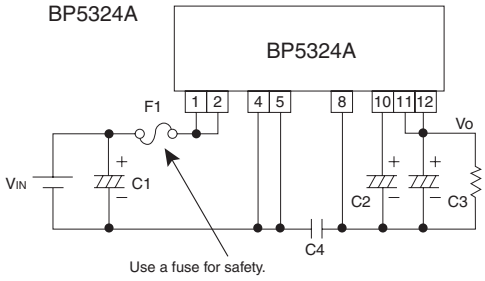
●Derating Curve



●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

Be sure to evaluate it under the condition that it is mounted by your product.
Especially, confirm whether output current never exceeds a maximum rating with current probe.

External Components Settings

F1 : Fuse	Use a 2.5A fuse
C1: Input Capacitor	Capacitance : 100μF to 220μF Rated voltage : 16V or higher .
C2: Output Capacitor	Capacitance : 100μF, Rated voltage : 25V or higher.
C3: Output Capacitor	Capacitance : 100μF to 470μ, Rated Voltage : 25V or higher.
C4: Noise Reduction Capacitor	Capacitance : 4700pF to 0.1μF, 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. 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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   [a] Infringement of the intellectual property rights of a third party
   [b] Problems arising from the use of the products listed herein
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In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.