DC/DC converter BP5225

5V/150mA output type

●Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit
Input voltage	V_{IN}	30	V
Operating temperature range	Topr	–20 to +80	°C
Storage temperature range	Tstg	–25 to +85	°C
Maximum surface temperature	Tsmax	100	°C
Maximum output current	Iopeak	150	mA

●Electrical Characteristics

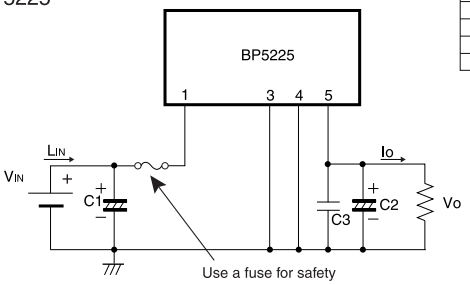
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage range	Vi	10.0	12.0	26.4	V	
Output voltage	Vo	4.8	5.0	5.2	V	Vi=12V, Io=150mA
Output current	Io	–	–	150	mA	Vi=12V ∗1
Line regulation	VL	–	0.04	0.10	V	Vi=10.0 to 26.4V, Io=150mA
Load regulation	VR	–	0.03	0.20	V	Vi=12V, Io=0 to 150mA ∗2
Output ripple voltage	Vp	–	0.06	0.15	Vpp	Vi=12V, Io=150mA
Power conversion effciency	η	75	80	–	%	Vi=12V, Io=150mA ∗2

∗1 Maximum output current varies depending on ambient temperature ; please refer to derating curve.
∗2 Refer to the load regulation and conversion effciency characteristics.

●Application circuit

BP5225

Pin No.	Function
1	Input terminal Vi
2	Not used
3	GND
4	GND
5	Output terminal Vo

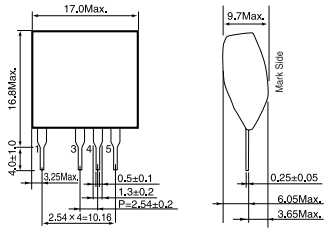


Verify proper operation under actual conditions before use. In particular, confirm that the load current dose not exceed the maximum rating.

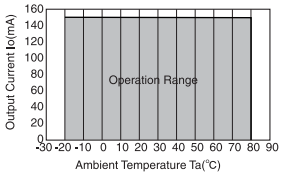
External components setting

FUSE: fuse	Use a quick-acting, 0.5A to 1A fuse
C1: Input Capacitor	Capacitance : 68µF to 470µF, Rated Voltage : 50V or higher, Ripple current : 0.1Arms above
C2: Output Capacitor	Capacitance : 100µF to 470µF, Rated Voltage : 10V or higher, ESR : 0.22Ω max, Ripple Current : 0.34Arms above
C3: Noise Reduction Capacitor	Capacitance : 0.1µF to 0.47µF, Rated Voltage : 10V or higher, Film or ceramic capacitor.

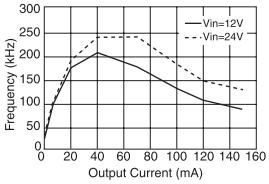
●Dimension(Unit : mm)



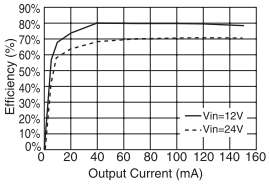
●Derating Curve



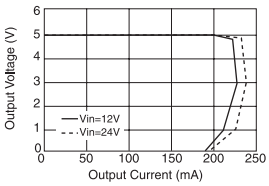
●Oscillation Frequency characteristics



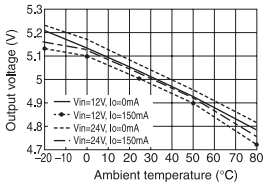
●Conversion Efficiency



●Load Regulation



●Temperature Caractor



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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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.