

DC/DC converter

5V/150mA output type

BP5225

Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit
Input voltage	V_{IN}	30	V
Operating temperature range	T_{opr}	-20 to +80	°C
Storage temperature range	T_{stg}	-25 to +85	°C
Maximum surface temperature	T_{smax}	100	°C
Maximum output current	I_{opeak}	150	mA

Electrical Characteristics

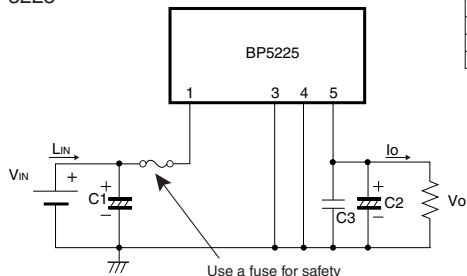
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage range	V_i	10.0	12.0	26.4	V	DC
Output voltage	V_o	4.8	5.0	5.2	V	$V_i=12V$, $I_o=150mA$
Output current	I_o	—	—	150	mA	$V_i=12V$ *1
Line regulation	V_L	—	0.04	0.10	V	$V_i=10.0$ to $26.4V$, $I_o=150mA$
Load regulation	V_R	—	0.03	0.20	V	$V_i=12V$, $I_o=0$ to $150mA$
Output ripple voltage	V_p	—	0.03	0.10	V _{pp}	$V_i=12V$, $I_o=150mA$ *2
Power conversion efficiency	η	70	78	—	%	$V_i=12V$, $I_o=150mA$

*1 Maximum output current must be reduced by ambient temperature.

*2 An output ripple voltage sometimes changes in capacitor to use, the measurement environment.

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

C1: Input Capacitor

C2: Output Capacitor

C3: Noise removal Capacitor

Recommend the use of fast-acting type fuse 0.5A to 1A.

Rated Voltage : More than 50V

Capacity : 68 to 470μF, Low impedance type

Rated ripple current : More than 0.42Arms

Rated Voltage : More than 10V

Capacity : 100 to 470μF, Low impedance type

ESR : Less than 0.22Ω

Rated ripple current : More than 0.34Arms

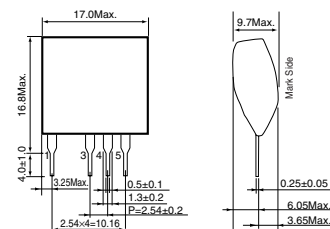
Evaluate it with the actual opportunity because it influences an output ripple voltage.

Rated Voltage : More than 10V

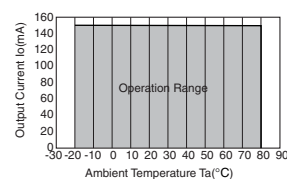
Film capacitor or ceramics capacitor.

Capacity : 0.1 to 0.22μF.

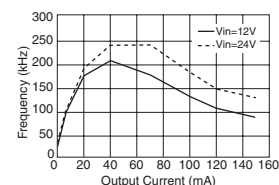
Dimensions(Unit : mm)



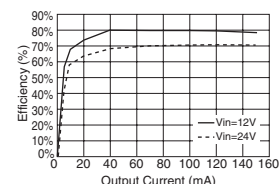
Derating Curve



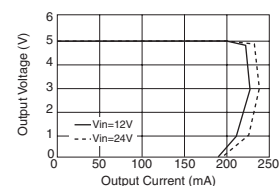
Oscillation Frequency characteristics



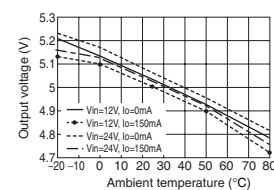
Conversion Efficiency



Load Regulation



Temperature Character



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.
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