

Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit
Input voltage	V_{IN}	18	V
Operating temperature range	T_{opr}	-25 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

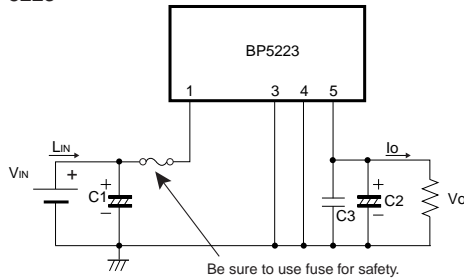
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage range	V_i	8.0	14.0	18.0	V	DC
Output voltage	V_o	4.7	5.0	5.3	V	$V_i=14V, I_o=100mA$
Output current	I_o	-	-	150	mA	$V_i=14V$ *1
Line regulation	V_L	-	0.03	0.10	V	$V_i=8$ to 18V, $I_o=100mA$
Load regulation	V_R	-	0.05	0.15	V	$V_i=14V, I_o=0$ to 100mA
Output ripple voltage	V_p	-	0.06	0.15	V _{pp}	$V_i=14V, I_o=100mA$ *2
Power conversion efficiency	η	75	80	-	%	$V_i=14V, I_o=150mA$

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

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

Application circuit

BP5223



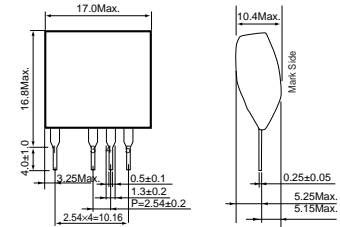
Pin No.	Function
1	Input terminal V_i
2	Not used
3	GND
4	GND
5	Output terminal V_o

For actual usage, Please kindly evaluate and confirm our part mounted in your product, Especially, Please make sure to confirm the load current does not exceed Max. rated current by using the current probe.

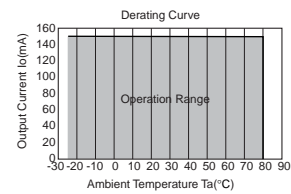
External components setting

FUSE: fuse	Recommend the use of fast-acting type fuse 0.5A
C1: Input capacitor	Rated voltage : Beyond 50V Capacity : 33 to 220 μ F, low impedance type Rated ripple current : Beyond 0.1Arms
C2: Output capacitor	Rated voltage : Beyond 25V Capacity : 100 to 470 μ F, low impedance type ESR : Less than 0.39 Ω Rated ripple current : Beyond 0.37Arms Evaluate it with the actual opportunity because it influences an output ripple voltage.
C3: Noise removal capacitor	Rated voltage : Beyond 25V Capacity : 0.1 to 0.22 μ F Film capacitor, or Ceramics capacitor

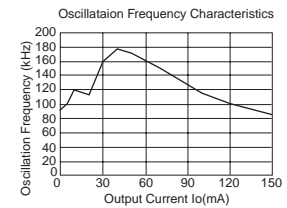
Dimensions(Unit : mm)



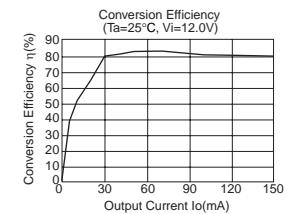
Derating Curve



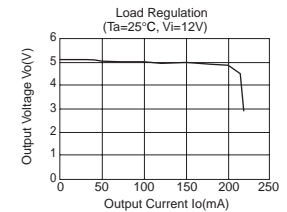
Oscillation Frequency characteristics



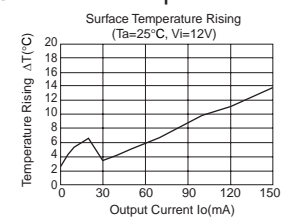
Conversion Efficiency



Load Regulation



Surface Temperature Rising



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.

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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.