

5V/150mA Output

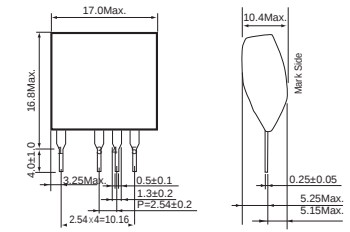
Step-down DC/DC Converter(Non-isolated)

BP5223

Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit
Input voltage	V_i	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

Dimensions (Unit : mm)



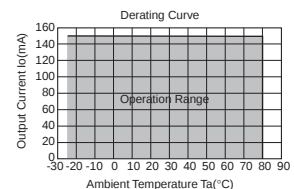
Electrical Characteristics

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	—	%	$V_i=14V, I_o=150mA$

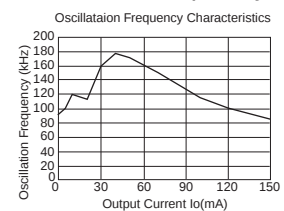
*1 Maximum output current varies depending on ambient temperature ; please refer to derating curve.

*2 The output ripple voltage may vary depending on the capacitance, environment, and location of peripheral components. Especially right attention has to be paid to aluminum electrolytic capacitor, because ESR changes greatly at the time of the low temperature and output ripple voltages increase.

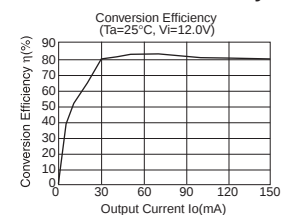
Derating Curve



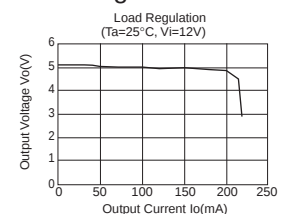
Oscillation Frequency



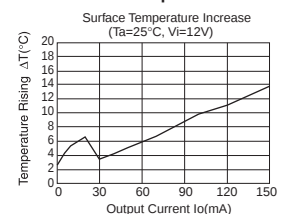
Conversion Efficiency



Load Regulation

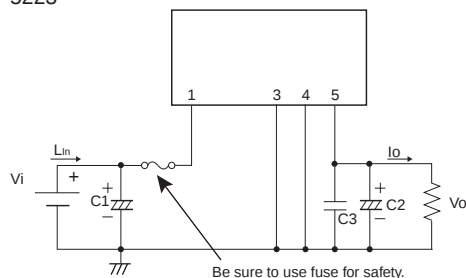


Surface Temperature Increase



Application Circuit

BP5223



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

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 Component Specifications

FUSE: fuse	Use a fast-acting fuse of 0.5A
C1: Input capacitor	Rated voltage : Beyond 50V Capacitance : 33 to 220 μ F, low impedance type Rated ripple current : Beyond 0.1Arms
C2: Output capacitor	Rated voltage : Beyond 25V Capacitance : 100 to 470 μ F, low impedance type ESR : Less than 0.39 Ω Rated ripple current : Beyond 0.37Arms Evaluate under actual operating conditions since it affects the output ripple voltage.
C3: Noise removal capacitor	Rated voltage : Beyond 25V Capacitance : 0.1 to 0.22 μ F Film or ceramic capacitor

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