5V/150mA Output

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

BP5223

●Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit
Input voltage	Vi	18	V
Operating temperature range	Topr	–25 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	8.0	14.0	18.0	V	DC
Output voltage	Vo	4.7	5.0	5.3	V	Vi=14V, Io=100mA
Output current	Io	–	–	150	mA	Vi=14V *1
Line regulation	VL	–	0.03	0.10	V	Vi=8 to 18V, Io=100mA
Load regulation	VR	–	0.05	0.15	V	Vi=14V, Io=0 to 100mA
Output ripple voltage	Vp	–	0.06	0.15	Vpp	Vi=14V, Io=100mA *2
Power conversion efficiency	η	75	80	–	%	Vi=14V, Io=150mA

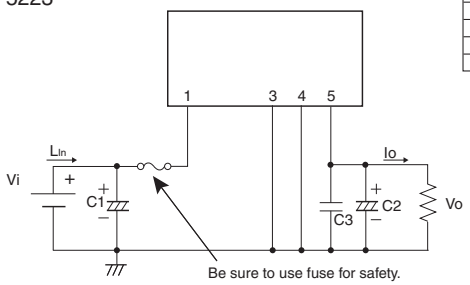
*1 Maximum output current varies depending on ambient temperature ; please refer to derating curve.

*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.

●Application Circuit

BP5223

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

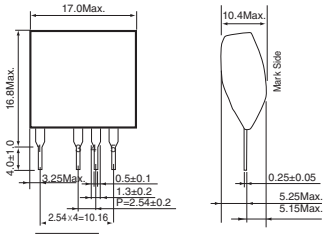


Please verify operation and characteristics in the customer's circuit before actual usage.
Ensure that the load current does not exceed the maximum rating.

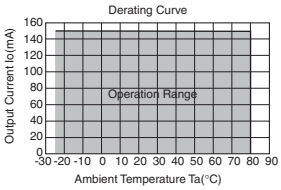
External Component Specifications

FUSE: fuse	Use a fast-acting fuse of 0.5A
C1: Input capacitor	Rated voltage : Beyond 50V Capacitance : 33 to 220µF, low impedance type Rated ripple current : Beyond 0.1Arms
C2: Output capacitor	Rated voltage : Beyond 25V Capacitance : 100 to 470µF, low impedance type ESR : Less than 0.39Ω 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 0.22µF Film or ceramic capacitor

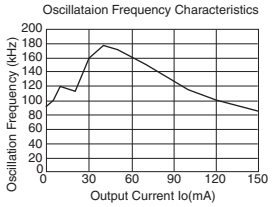
●Dimensions (Unit : mm)



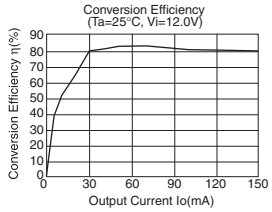
●Derating Curve



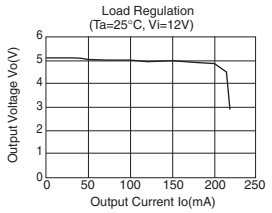
●Oscillation Frequency



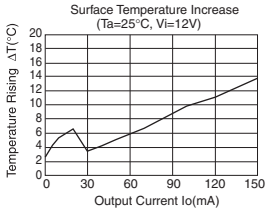
●Conversion Efficiency



●Load Regulation



●Surface Temperature Increase



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