Power supply PCMCIA / flash memory
BP5320

The BP5320 is a DC / DC converter for supplying power to PCMCIA flash memory. From a power supply (+5V) for PCMCIA operations, the IC supplies a voltage for programming operations (+12V). Compact and thin surface-mounted package with embossing tape for automatic mounting.

●Applications
Personal computers, CD-ROM players, portable information devices, and other PCMCIA-slot equipped devices

●Features
1) Designed to provide power to PCMCIA programming operations.
2) The 5V operating voltage is same as the IC memory card operating voltage.
3) The large current enables power to be supplied to sound ICs.
4) Compact and thin SMD package.
5) Supplied with embossing tape for automatic mounting by the mounter.
6) Built-in short-circuit protection circuit.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V_{IN}	7.0	V
Output current	I_{OUT}	170	mA
Operating temperature	Topr	0～+60	℃
Storage temperature	Tstg	−20～+80	℃

●Block diagram
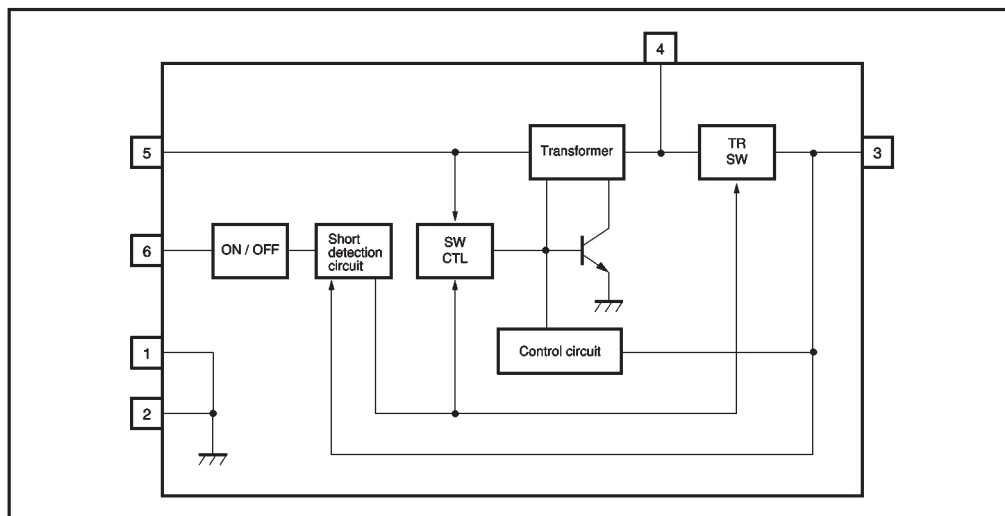
●Electrical characteristics (unless otherwise noted, Ta=25°C and V_{CTL}=5V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V_{IN}	4.5	5.0	5.5	V	
Output current	I_{OUT}	—	—	150	mA	
Output voltage	V_{OUT}	11.4	12.0	12.6	V	V_{IN}=4.5～5.5V, V_{OUT}=0～170mA
Ripple noise voltage	ν	—	—	200	mV_{P-P}	V_{IN}=5V, I_{OUT}=170mA
Efficiency	η	73	79	—	%	V_{IN}=5V, I_{OUT}=170mA
ON / OFF CTL voltage when ON	V_{CTL}	3.3	—	6.0	V	V_{IN}=5V, V_{OUT}≧11.4V
ON / OFF CTL voltage when OFF	V_{CTL}	—	—	0.4	V	V_{IN}=5V, V_{OUT}≦0.3V
ON / OFF CTL current	I_{CTL}	—	—	0.2	mA	V_{IN}=5V

＊ Measured with a band width of 20MHz.

●Measurement circuit
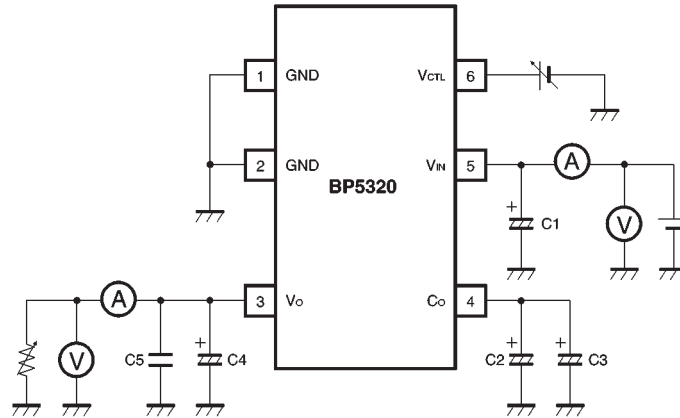
Fig.1

C1 : 22 μF / 10V （MSVB21A226M : NEC）
C2 : 10 μF / 35V （MSVD21V106M : NEC）
C3 : 47 μF / 16V （UZS1C470MCR1GB : NICHICON）
C4 : 47 μF / 16V （UZS1C470MCR1GB : NICHICON）
C5 : 0.1 μF （Ceramic capacitor）

●Pin descriptions

Pin No.	Pin name	Function
1,2	GND	Ground
3	V_{OUT}	Output ; connect an output capacitor with a recommended capacitance off 2.2 μF between this pin and GND
4	C_O	Output smoothing capacitor connection ; connect a low-impedance capacitor with a recommended capacitance of 47 μF between this pin and GND
5	V_{IN}	Input ; connect a low-impedance capacitor with a recommended capacitance of 100 μF between this pin and GND
6	V_{CTL}	Output ON / OFF control ; output starts when the pin is HIGH level, and stops at Low level

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●Application example

(1)   Flash memory that requires 5V for reading
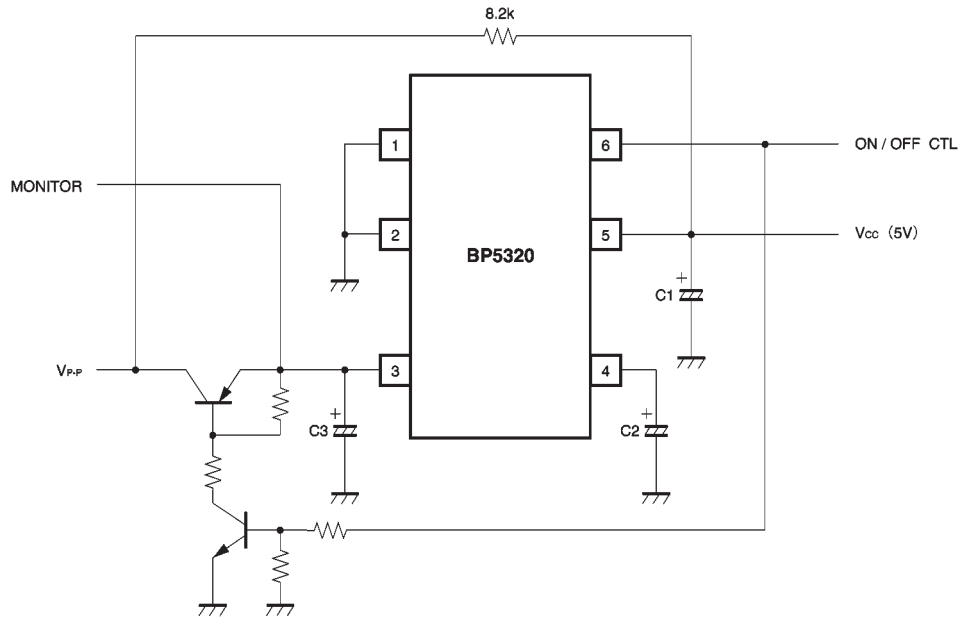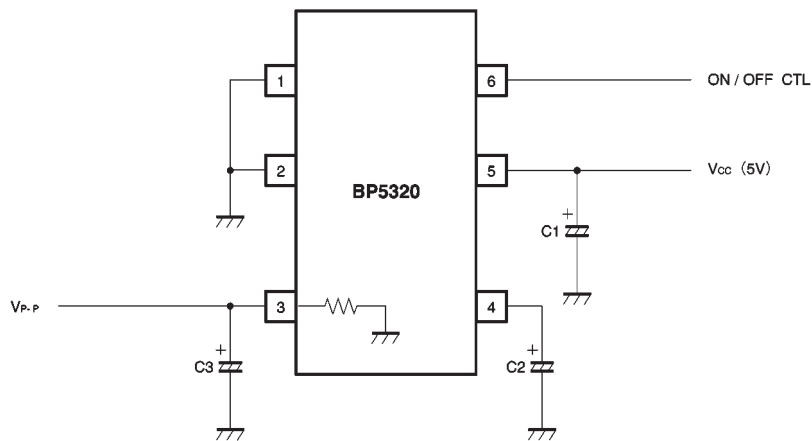

Fig.2

(2)   Pull-down of V_{P-P}

Fig.3

The OFF output is pulled down through an effective resistance of 30kΩ.

●Operation notes

(1)   Place I/O external capacitors as near as possible to the connection pins. In particular, make sure to minimize the impedance between the input-side capacitor (C1) and pin 5. a length less than 50mm is recommended for a copper foil of 1.0mm wide and 35μm thick.

(2)   Avoid frequent switching using the ON/OFF CTL pin (five times per second at the maximum).
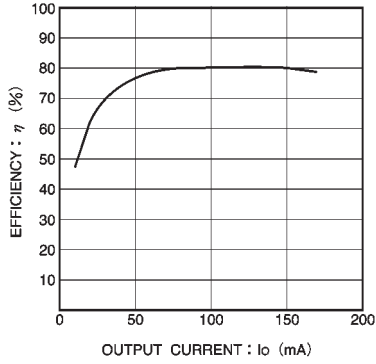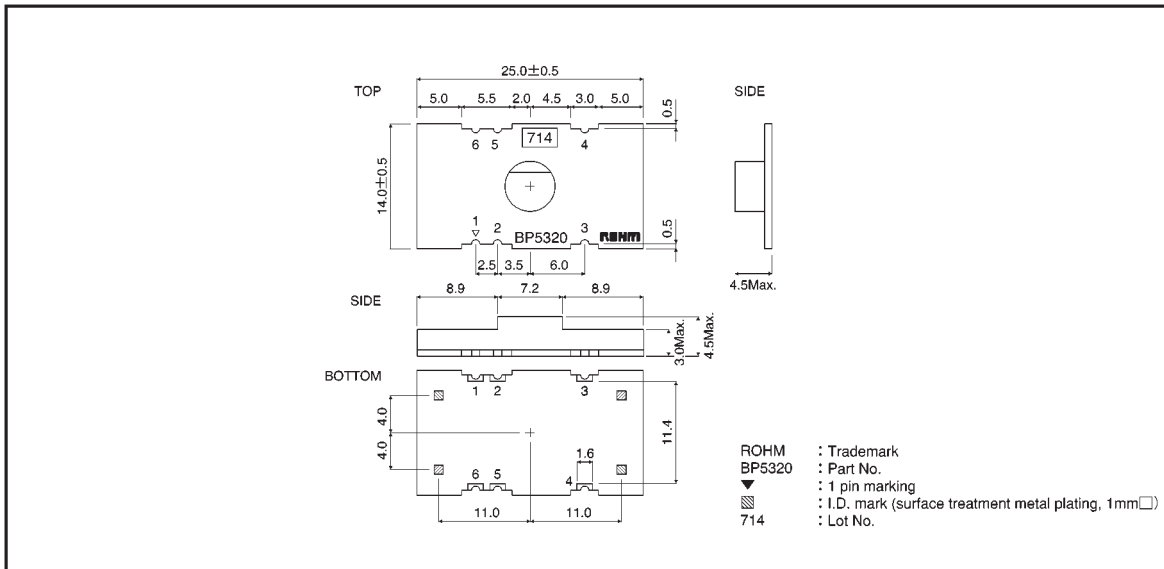
●Electrical characteristics curve

Fig. 4 Efficiency

●External dimensions (Units: mm)

ROHM : Trademark
BP5320 : Part No.
▼ : 1 pin marking
▨ : I.D. mark (surface treatment metal plating, 1mm□)
714 : Lot No.

• The soldering used inside the unit is equivalent to H63 solder, so it will remelt during reflow. Be sure not to subject the unit to any vibrations when passing through the reflow furnace.