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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



DC/DC converter step-up

BP5326

Suitable for LCD panels, tuner power supply. Only additional electrolysis capacitor, the source of step-up power supply can be constituted easily.

●Applications

LCD panel, Tuner.

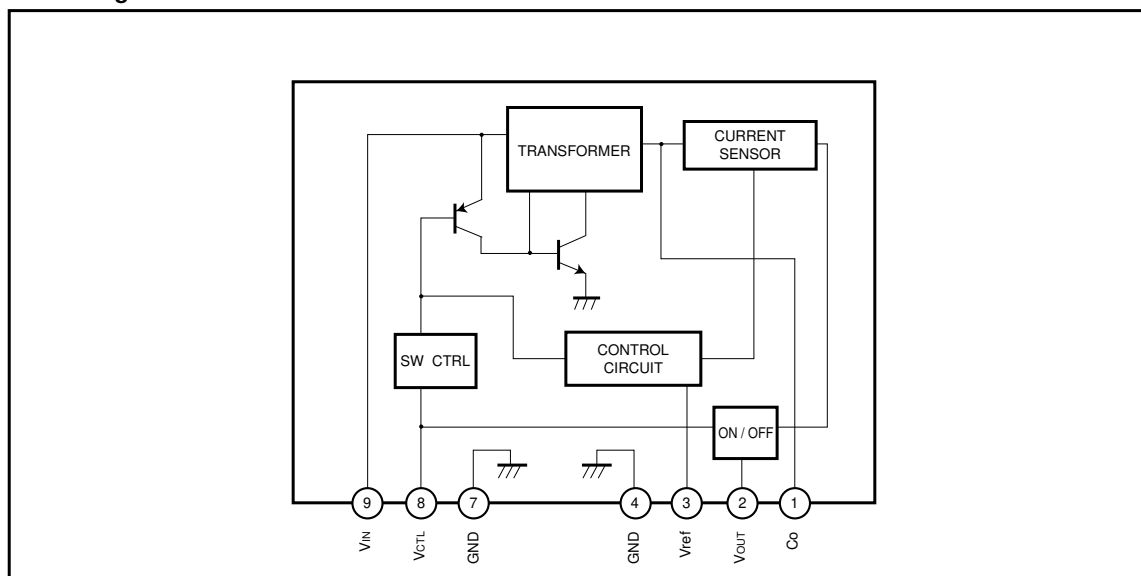
●Features

- 1) High conversion efficiency.
- 2) Built-in protection circuit.
- 3) Built-in ON / OFF switch.
- 4) Compact and light.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V _{IN}	7	V
Operating temperature range	T _{opr}	-10 to 60	°C
Storage temperature range	T _{stg}	-30 to +85	°C
Maximum Output current	I _{omax}	25	mA

●Block diagram



Power Module

●Pin descriptions

Pin No.	Pin name	Function
1	Co	Output smoothing capacitor connection pin ; connect a low-impedance capacitor with a recommended capacitance of 47 μ F between this and GND.
2	V _{OUT}	Output pin.
3	V _{ref}	Output voltage adjustment pin for contrast ; output voltage is adjusted by connecting a resistor between pins 2 and 3 or pins 3 and 4.
4, 7	GND	Ground pin.
8	V _{CTL}	Output ON/OFF control pin ; output starts when the pin is HIGH level, and stops when the pin is LOW or OPEN.
9	V _{IN}	Input pin ; connect a low-impedance capacitor with a recommended capacitance of 100 μ F between this pin and GND.

●Electrical characteristics (Unless otherwise noted, T_a=25°C, V_{IN}=5V, I_o=20mA, V_{CTL}=5V, R1 to R2 resistors are disconnected)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	V _{IN}	4.5	5.0	5.5	V	—
Output current	I _{OUT}	—	—	25	mA	—
Output voltage	V _{OUT1}	28.0	29.5	31.0	V	V _{IN} =4.5 to 5.5V, I _{OUT} =0 to 25mA
Output voltage when OFF	V _{OUT2}	—	—	0.3	V	V _{IN} =4.5 to 5.5V, V _{CTL} =0V
Ripple noise voltage	v ₁	—	100	200	mV _{P-P}	— *
Efficiency	η	67	77	—	%	—
ON / OFF CTL voltage when ON	V _{CTL}	1.5	—	—	V	V _o >28V
ON / OFF CTL voltage when OFF	V _{CTL}	—	—	0.5	V	V _o <0.3V, Alternatively, when OPEN
ON / OFF CTL input current	I _{CTL}	—	—	500	μ A	V _{CTL} =1.5V
Current consumption when OFF	I _{OFF}	—	—	50	μ A	V _{CTL} =0V

* Measured with a band width of 20 MHz.

● Measurement circuit / Application example

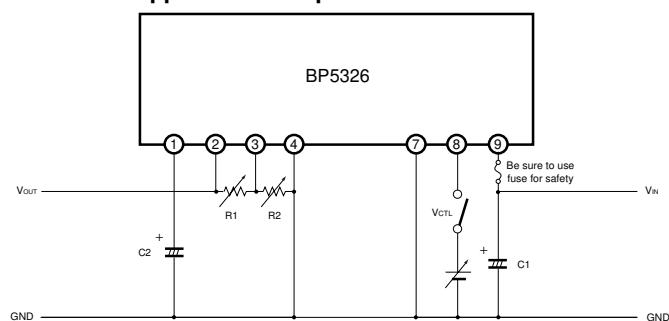


Fig.1

C1 : 100mF / 16V (Low impedance)

C2 : 47mF / 35V (Low impedance)

R1, 2 : Resistors for adjusting output voltage (Contrast adjustment)

Power Module

● Electrical characteristics curves

- (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 pin9. A length less than 50mm is recommended for a copper foil of 1.0mm wide 35 μ m thick.
- (2) Avoid frequent switching using the ON / OFF CTL pin (five times per second at the maximum).
- (3) R1 and R2 resistors, which are used for changing the output voltage, are usually not required.

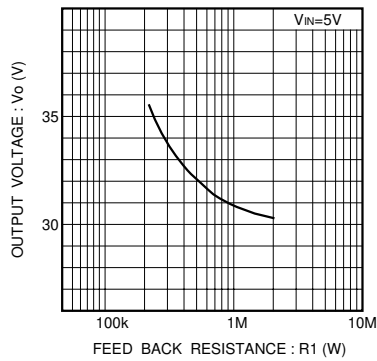


Fig.2 Output voltage vs. feedback resistance (R1)

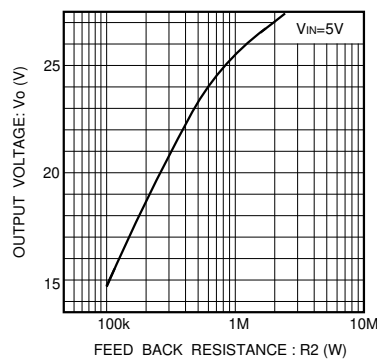
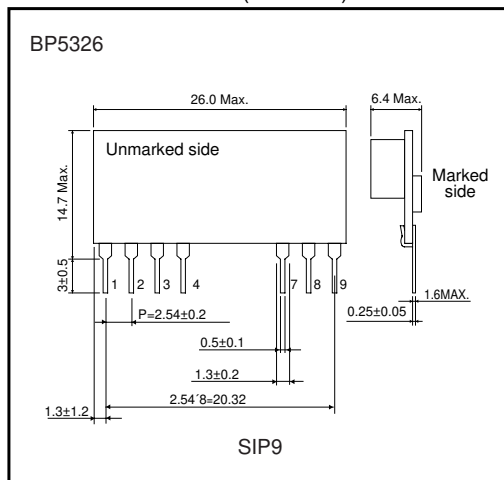


Fig.3 Output voltage and feedback resistance (R2)

● External dimensions (Unit : mm)



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