Power Module

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.

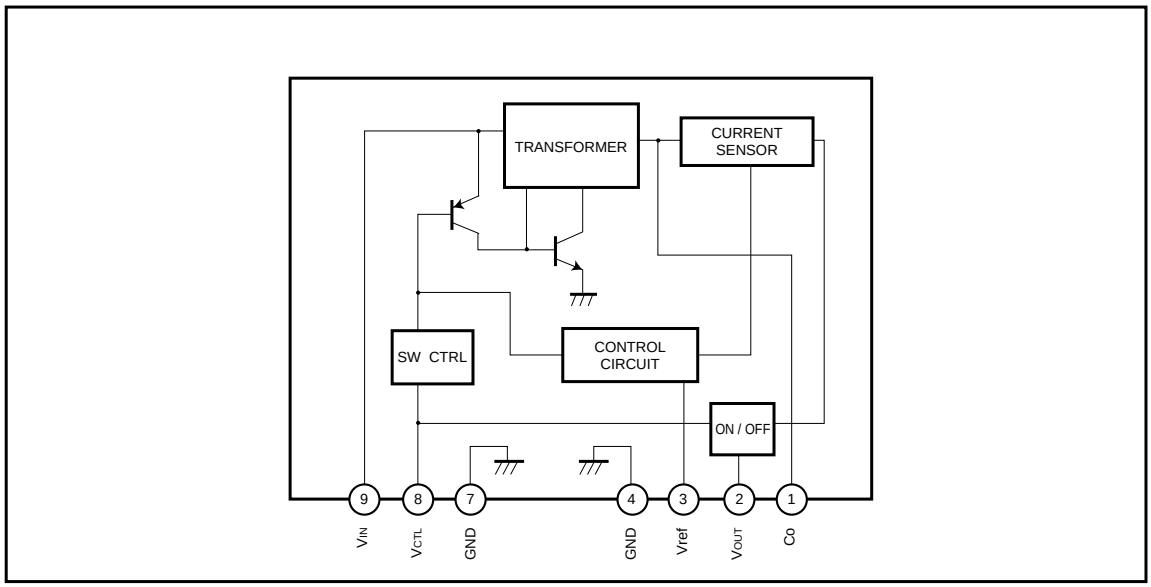
●Features

1) High conversion efficiency.
2) Built-in protection circuit.
3) Built-in ON / OFF switch.
4) Compact and light.
5) Surface mounting is possible because parts are concentrated on one side.

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Power supply voltage	V_{IN}	7	V
Operating temperature range	Topr	0 to 60	°C
Storage temperature range	Tstg	−30 to +85	°C

●Block diagram



●Pin descriptions

Pin No.	Pin name	Function
1	Co	Output smoothing capacitor connection pin ; connect a low-impedance capacitor with a recommended capacitance of 47μF between this and GND.
2	V_{OUT}	Output pin.
3	Vref	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 100μF between this pin and GND.

●Electrical characteristics (Unless otherwise noted, Ta=25°C, 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	$V_{OUT}1$	28.0	29.5	31.0	V	V_{IN}=4.5 to 5.5V, I_{OUT}=0 to 25mA
Output voltage when OFF	$V_{OUT}2$	–	–	0.3	V	V_{IN}=4.5 to 5.5V, V_{CTL}=0V
Ripple noise voltage	υ1	–	100	200	mV_{P-P}	V_{IN}=5V, I_{OUT}=20mA *
Efficiency	η	67	77	–	%	V_{IN}=5V, I_{OUT}=20mA
ON / OFF CTL voltage when ON	V_{CTL}	1.5	–	–	V	V_{IN}=5V, Vo>28V
ON / OFF CTL voltage when OFF	V_{CTL}	– (Alternatively, when OPEN)	–	0.5	V	V_{IN}=5V, Vo<0.3V
ON / OFF CTL current	I_{CTL}	–	–	500	μA	V_{IN}=5V, V_{CTL}=1.5V
Current consumption when OFF	I_{OFF}	–	–	50	μA	V_{IN}=5V, V_{CTL}=0V

* Measured with a band width of 20 MHz.

● Measurement circuit / Application example

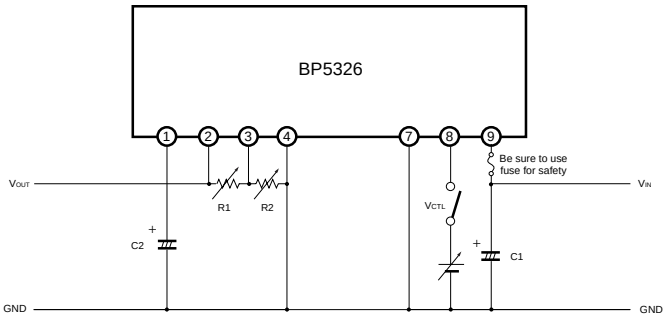


Fig.1

C1 : 100mF / 16V (Low impedance)
C2 : 47mF / 35V (Low impedance)
R1, 2 : Resistors for adjusting output voltage (Contrast adjustment)

● **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 35μm trick.

(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.

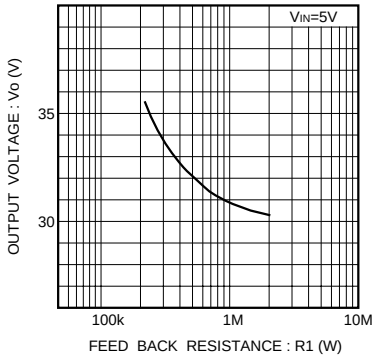


Fig.2 Output voltage vs. feedback resistance (R1)

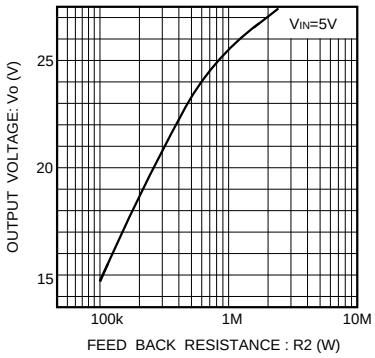
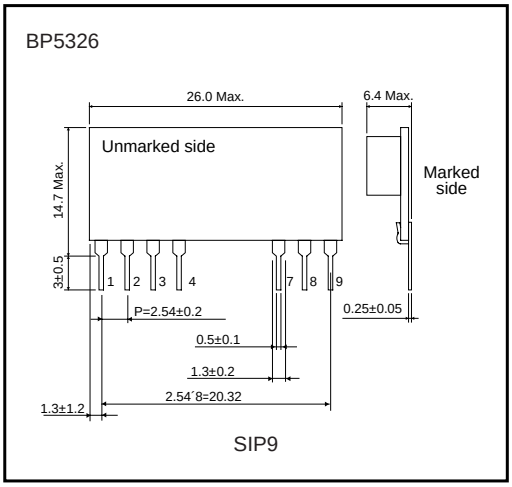


Fig.3 Output voltage and feedback resistance (R2)

●**External dimensions** (Unit : mm)



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