# 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.

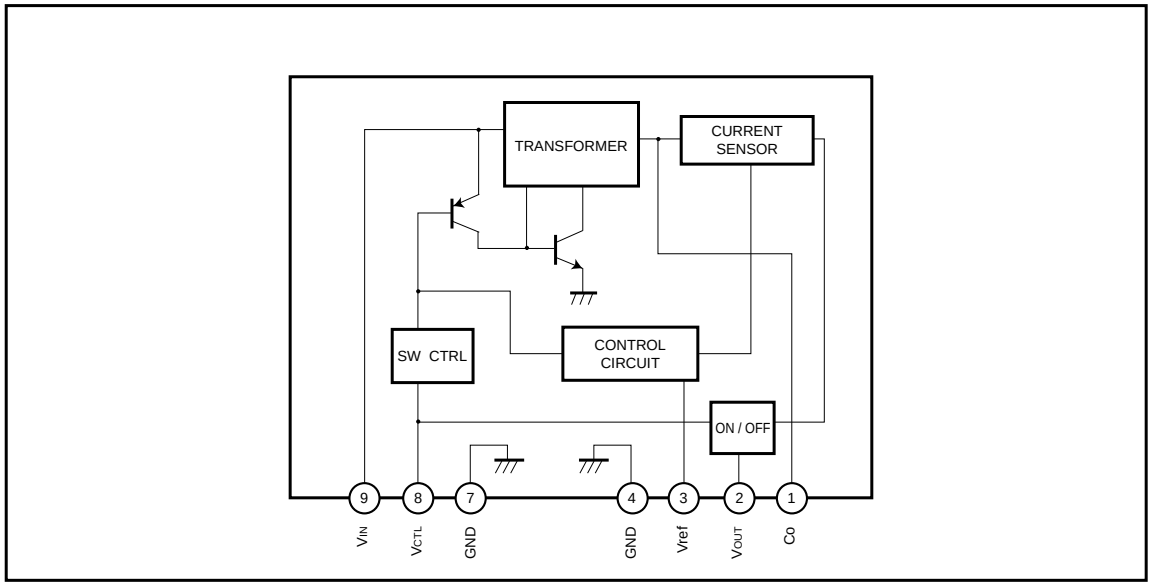
**●Features**

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 | Topr | −10 to 60 | °C |
| Storage temperature range | Tstg | −30 to +85 | °C |
| Maximum Output current | Iomax | 25 | mA |

**●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, $V_{IN}$=5V, Io=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 | $V_{OUT}1$ | 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 | $mV_{P-P}$ | – * |
| Efficiency | η | 67 | 77 | – | % | – |
| ON / OFF CTL voltage when ON | $V_{CTL}$ | 1.5 | – | – | V | Vo>28V |
| ON / OFF CTL voltage when OFF | $V_{CTL}$ | – | – | 0.5 | V | Vo<0.3V, Altematively, when OPEN |
| ON / OFF CTL input current | $I_{CTL}$ | – | – | 500 | μA | $V_{CTL}$=1.5V |
| Current consumption when OFF | $I_{OFF}$ | – | – | 50 | μA | $V_{CTL}$=0V |

* Measured with a band width of 20 MHz.

**● Measurement circuit / Application example**

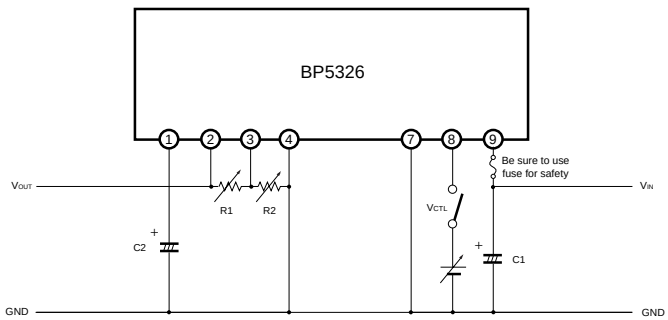



Fig.1

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.

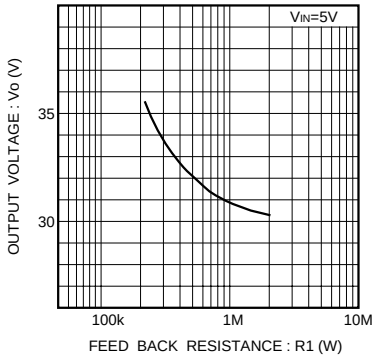



Fig.2 Output voltage vs. feedback resistance (R1)

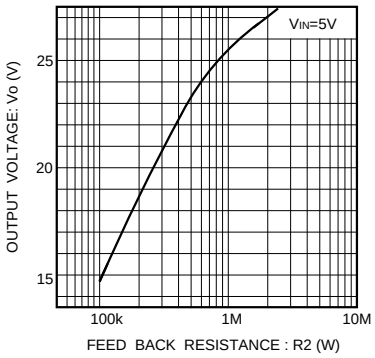
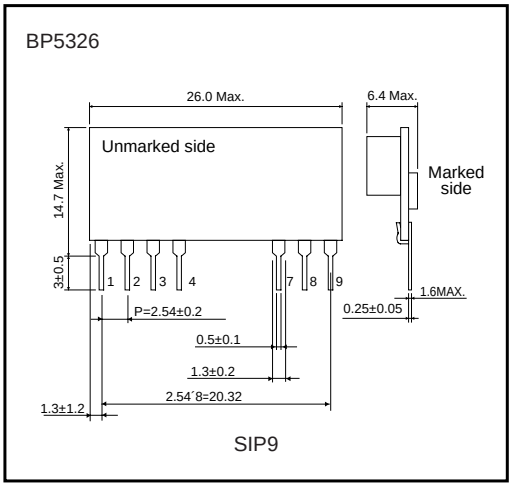



Fig.3 Output voltage and feedback resistance (R2)

●**External dimensions** (Unit : mm)



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