

# 35V MAX Variable Output LDO Regulator **BA00CC0WFP/WT(-V5)**

## ●Description

BA00CC0WFP/WT(-V5) is a variable output LDO regulator IC with the output current of 1A and C pin voltage accuracy of  $\pm 2\%$ . Output voltage can be set (3V to 15V) by external resistor. Over-current protection circuit, over-voltage protection circuit and thermal protection circuit are incorporated in this IC. BA00CC0WFP/WT(-V5) incorporates shutdown switch to control output ON/OFF. This IC is perfect for applications with high-voltage requirements and power supply applications.

## ●Features

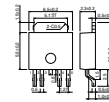
- 1) Maximum output current : 1A
- 2) Output voltage setting (3V to 15V) by external resistor
- 3) Low drop-out voltage type with PNP output
- 4) 35V high-voltage process
- 5) Built-in over-voltage protection circuit, over-current protection circuit, thermal protection circuit
- 6) Built-in shutdown circuit which circuit current is 0uA.
- 7) Two types of package  
(Small mounting type and insertion type)
- 8) C pin output voltage accuracy :  $\pm 2\%$

## ●Applications

Consumer products

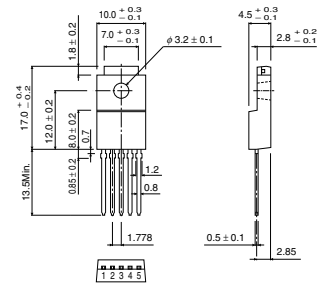
## ●Dimension (Unit : mm)

BA00CC0WFP



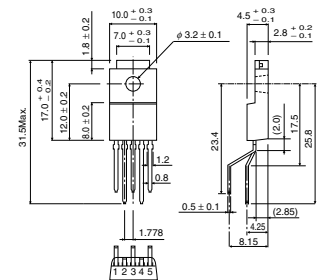
TO252-5

BA00CC0WT



TO220FP-5

BA00CC0WT(-V5)



TO220FP-5(V5)

● Absolute Maximum Ratings (Ta=25°C)

| Parameter                   |               | Symbol              | Limits                   | Unit |
|-----------------------------|---------------|---------------------|--------------------------|------|
| Supply voltage              |               | V <sub>CC</sub>     | -0.3 ~ +35 <sup>*1</sup> | V    |
| V <sub>c</sub> Pin voltage  |               | V <sub>CTL</sub>    | -0.3 ~ V <sub>CC</sub>   | V    |
| Power dissipation           | TO252-5       | P <sub>d</sub>      | 1300 <sup>*2</sup>       | mW   |
|                             | TO220FP-5(V5) |                     | 2000 <sup>*3</sup>       |      |
| Operating temperature range |               | T <sub>opr</sub>    | -40 ~ +125               | °C   |
| Storage temperature range   |               | T <sub>stg</sub>    | -55 ~ +150               | °C   |
| Junction temperature        |               | T <sub>jmax</sub>   | 150                      | °C   |
| Peak supply voltage         |               | V <sub>CCPeak</sub> | 50 <sup>*4</sup>         | V    |

\*1 Do not however exceed P<sub>d</sub>.  
\*2 Derating in done at 10.4mW/°C for operating above Ta=25°C  
\*3 Derating in done at 16mW/°C for operating above Ta=25°C  
\*4 Bias voltage in 200msec(tr≥1msec).

● Recommended Operating Conditions (Ta=25°C)

| Parameter      | Symbol           | Min. | Typ. | Max. | Unit |
|----------------|------------------|------|------|------|------|
| Input voltage  | V <sub>CC</sub>  | 4.0  | -    | 25.0 | V    |
| Output current | I <sub>o</sub>   | -    | -    | 1.0  | A    |
| Output voltage | V <sub>OUT</sub> | 3.0  | -    | 15   | V    |

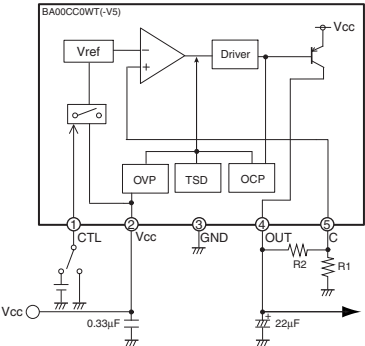
● Electrical Characteristics (Unless otherwise specified, Ta=25°C, V<sub>CC</sub>=10V, I<sub>o</sub>=500mA, R<sub>1</sub>=2.2kΩ, R<sub>2</sub>=6.8kΩ)

| Parameter                                              | Symbol           | Min.  | Typ.  | Max.  | Unit   | Conditions                                             |
|--------------------------------------------------------|------------------|-------|-------|-------|--------|--------------------------------------------------------|
| Shut down current                                      | I <sub>sd</sub>  | -     | 0     | 10    | μA     | V <sub>CTL</sub> =0V                                   |
| Bias current                                           | I <sub>b</sub>   | -     | 2.5   | 5.0   | mA     | V <sub>CTL</sub> =2V, I <sub>o</sub> =0mA              |
| C pin voltage                                          | V <sub>c</sub>   | 1.200 | 1.225 | 1.250 | V      | I <sub>o</sub> =50mA                                   |
| Output voltage                                         | V <sub>o</sub>   | -     | 5.00  | -     | V      |                                                        |
| Dropout voltage                                        | ΔV <sub>d</sub>  | -     | 0.3   | 0.5   | V      | V <sub>CC</sub> =0.95V <sub>o</sub>                    |
| Peak output current                                    | I <sub>o</sub>   | 1.0   | -     | -     | A      |                                                        |
| Ripple rejection                                       | R.R.             | 45    | 55    | -     | dB     | f=120Hz, e <sub>in</sub> =1Vrms, I <sub>o</sub> =100mA |
| Line regulation                                        | Reg.I            | -     | 20    | 100   | mV     | V <sub>CC</sub> =6 → 25V                               |
| Load regulation                                        | Reg.L            | -     | 50    | 150   | mV     | I <sub>o</sub> =5mA → 1A                               |
| Temperature coefficient of output voltage <sup>*</sup> | T <sub>cvo</sub> | -     | ±0.02 | -     | % / °C | I <sub>o</sub> =5mA, T <sub>j</sub> =0~125°C           |
| Short circuit output current                           | I <sub>os</sub>  | -     | 0.40  | -     | A      | V <sub>CC</sub> =25V                                   |
| ON mode level                                          | V <sub>thH</sub> | 2.0   | -     | -     | V      | ACTIVE MODE, I <sub>o</sub> =0mA                       |
| OFF mode level                                         | V <sub>thL</sub> | -     | -     | 0.8   | V      | OFF MODE, I <sub>o</sub> =0mA                          |
| Input high current                                     | I <sub>CTL</sub> | 100   | 200   | 300   | μA     | V <sub>CTL</sub> =5V, I <sub>o</sub> =0mA              |

\* Designed Guarantee.(Outgoing inspection is not done all products.)

● Application Circuit

[BA00CC0WT(-V5)]



[BA00CC0WFP]

