

# 35V MAX 1A Output LDO Regulator

## BA□□CC0WFP/WT(-V5)

## BA□□CC0FP/T

### ● Description

BA□□CC0WFP/WT(-V5) and BA□□CC0FP/T are PNP output LDO regulator ICs with the output current of 1A and a voltage accuracy of  $\pm 2\%$ . This IC has incorporated over-current protection circuit, over-voltage protection circuit and thermal protection circuit. BA□□CC0WFP/WT(-V5) also incorporates shutdown switch to control output ON/OFF. This IC is perfect for applications with high-voltage requirements, power supply applications.

[Series line-up]

Part No.	Output Current (A)	Output Voltage(V)								Package		
BA□□CC0WFP	1.0	-	3.3	5	6	7	8	9	-	-	TO252-5	
BA□□CC0WT		3	3.3	5	-	7	8	9	10	12	TO220FP-5	
BA□□CC0WT(-V5)		-	3.3	5	-	-	8	9	-	12	TO220FP-5(V5)	
BA□□CC0FP		3	3.3	5	6	7	8	9	10	12	15	TO252-3
BA□□CC0T		3	3.3	5	-	7	8	9	10	12	15	TO220FP

### ● Features

- 1) Maximum output current : 1A
- 2) Output voltage accuracy :  $\pm 2\%$
- 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.  
(BA□□CC0WFP/WT(-V5))
- 7) Two types of package (Small mounting type and insertion type)

### Applications

Consumer products

### ● Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply Voltage	VCC	-0.3 ~ +35 *1	V
Output Pin Control Voltage	VCTL	-0.3 ~ +VCC	V
Power Dissipation	Pd	1200	*2
		1300	*3
		2000	*4
		2000	*4
Operating Temperature Range	Topr	-40 ~ +125	°C
Storage Temperature Range	Tstg	-55 ~ +150	°C
Junction Temperature	Tjmax	150	°C
Peak Supply Voltage	VCC peak	50	*5 V

\*1 Do not however exceed Pd.

\*2 Mounted on 70mm x 70mm x 1.6mm glass-epoxy PCB Derating in done at 9.6mW/°C for operating above Ta=25°C

\*3 Mounted on 70mm x 70mm x 1.6mm glass-epoxy PCB Derating in done at 10.4mW/°C for operating above Ta=25°C

\*4 Mounted on 70mm x 70mm x 1.6mm glass-epoxy PCB Derating in done at 10.4mW/°C for operating above Ta=25°C

\*5 Bias voltage in 200msec(tr<sub>r</sub>≥1msec).

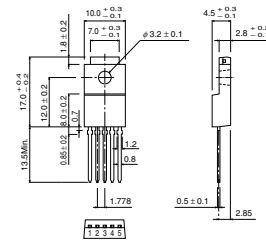
### ● Dimension (Units :mm)

BA□□CC0WFP



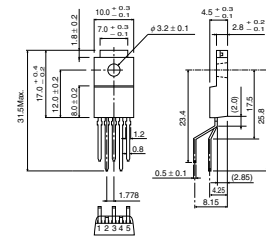
TO252-5

BA□□CC0WT



TO220FP-5

BA□□CC0WT(-V5)



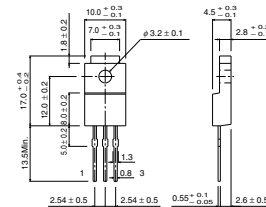
TO220FP-5(V5)

BA□□CC0FP



TO252-3

BA□□CC0T



TO220FP

[BA□□CC0WFP/WT(-V5)]

● Electrical Characteristics (Unless otherwise specified, Ta=25°C, Vcc=(Vo+5)V, Io=500mA)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Output voltage	Vo	0.98 x Vo	Vo	1.02 x Vo	V	Vo : Refer to the series line-up
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
Dropout voltage	ΔV <sub>d</sub>	-	0.3	0.5	V	V <sub>cc</sub> =0.95Vo
Peak output current	I <sub>o</sub>	1.0	-	-	A	
Ripple rejection	R.R.	45	55	-	dB	f=120Hz, e <sub>in</sub> =1V <sub>rms</sub> , I <sub>o</sub> =100mA
Line regulation	Reg.I	-	20	100	mV	V <sub>cc</sub> =(Vo+1)V → 25V
Load regulation	Reg.L	-	50	150	mV	I <sub>o</sub> =5mA → 1A
Temperature coefficient of output current *	T <sub>cvo</sub>	-	±0.02	-	% / °C	I <sub>o</sub> =5mA, T <sub>j</sub> =0~125°C
Output short current	I <sub>os</sub>	-	0.4	-	A	V <sub>cc</sub> =25V
ON mode voltage	V <sub>thH</sub>	2.0	-	-	V	ACTIVE MODE, I <sub>o</sub> =0mA
OFF mode voltage	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.)

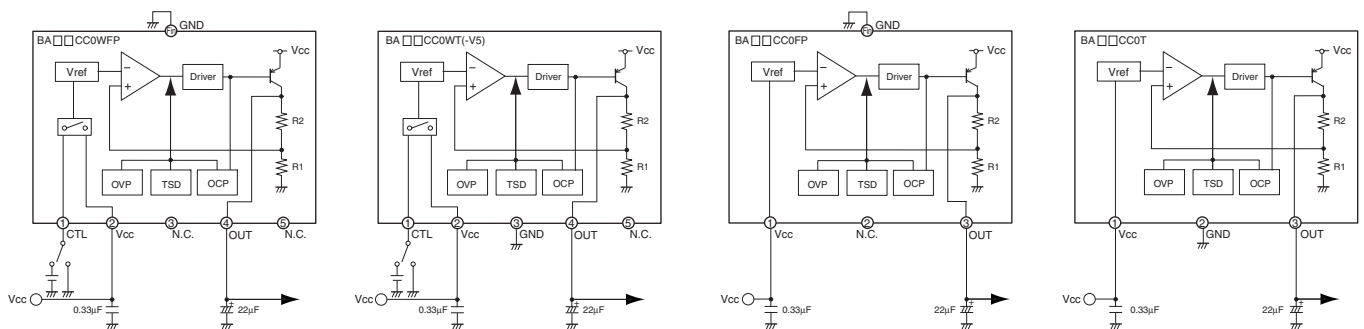
[BA□□CC0FP/T]

● Electrical Characteristics (Unless otherwise specified, Ta=25°C, Vcc=(Vo+5)V, Io=500mA)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Output voltage	Vo	0.98 x Vo	Vo	1.02 x Vo	V	Vo : Refer to the series line-up
Bias current	I <sub>b</sub>	-	2.5	5.0	mA	ACTIVE MODE, I <sub>o</sub> =0mA
Dropout voltage	ΔV <sub>d</sub>	-	0.3	0.5	V	V <sub>cc</sub> =0.95Vo
Peak output current	I <sub>o</sub>	1.0	-	-	A	
Ripple rejection	R.R.	45	55	-	dB	f=120Hz, e <sub>in</sub> =1V <sub>rms</sub> , I <sub>o</sub> =100mA
Line regulation	Reg.I	-	20	100	mV	V <sub>cc</sub> =(Vo+1)V → 25V
Load regulation	Reg.L	-	50	150	mV	I <sub>o</sub> =5mA → 1A
Temperature coefficient of output current *	T <sub>cvo</sub>	-	±0.02	-	% / °C	I <sub>o</sub> =5mA, T <sub>j</sub> =0~125°C
Output short current	I <sub>os</sub>	-	0.4	-	A	V <sub>cc</sub> =25V

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● Application Circuit



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