

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	TO252-3
BA□□CC0T		3	3.3	5	-	7	8	9	10	12	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_r≥1msec).

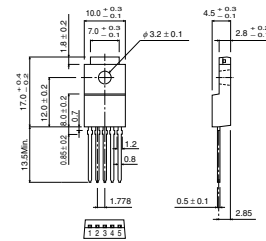
● Dimension (Units :mm)

BA□□CC0WFP



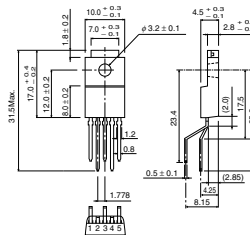
TO252-5

BA□□CC0WT



TO220FP-5

BA□□CC0WT(-V5)



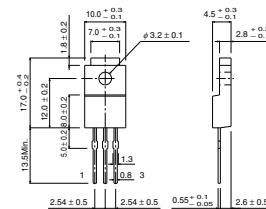
TO220FP-5(V5)

BA□□CC0FP



TO252-3

BA□□CC0T



TO220FP

[BA□□CC0WFP/WT(-V5)]

● Electrical Characteristics (Unless otherwise specified, $T_a=25^\circ\text{C}$, $V_{cc}=(V_o+5)\text{V}$, $I_o=500\text{mA}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Output voltage	V_o	$0.98 \times V_o$	V_o	$1.02 \times V_o$	V	V_o : Refer to the series line-up
Shut down current	I_{sd}	-	0	10	μA	$V_{CTL}=0\text{V}$
Bias current	I_b	-	2.5	5.0	mA	$V_{CTL}=2\text{V}$, $I_o=0\text{mA}$
Dropout voltage	ΔV_d	-	0.3	0.5	V	$V_{cc}=0.95V_o$
Peak output current	I_o	1.0	-	-	A	
Ripple rejection	R.R.	45	55	-	dB	$f=120\text{Hz}$, $e_{in}=1\text{V}_{rms}$, $I_o=100\text{mA}$
Line regulation	Reg.I	-	20	100	mV	$V_{cc}=(V_o+1)\text{V} \rightarrow 25\text{V}$
Load regulation	Reg.L	-	50	150	mV	$I_o=5\text{mA} \rightarrow 1\text{A}$
Temperature coefficient of output current *	T_{cvo}	-	± 0.02	-	% / $^\circ\text{C}$	$I_o=5\text{mA}$, $T_j=0\sim 125^\circ\text{C}$
Output short current	I_{os}	-	0.4	-	A	$V_{cc}=25\text{V}$
ON mode voltage	V_{thH}	2.0	-	-	V	ACTIVE MODE, $I_o=0\text{mA}$
OFF mode voltage	V_{thL}	-	-	0.8	V	OFF MODE, $I_o=0\text{mA}$
Input high current	I_{ctl}	100	200	300	μA	$V_{CTL}=5\text{V}$, $I_o=0\text{mA}$

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

[BA□□CC0FP/T]

● Electrical Characteristics (Unless otherwise specified, $T_a=25^\circ\text{C}$, $V_{cc}=(V_o+5)\text{V}$, $I_o=500\text{mA}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Output voltage	V_o	$0.98 \times V_o$	V_o	$1.02 \times V_o$	V	V_o : Refer to the series line-up
Bias current	I_b	-	2.5	5.0	mA	ACTIVE MODE, $I_o=0\text{mA}$
Dropout voltage	ΔV_d	-	0.3	0.5	V	$V_{cc}=0.95V_o$
Peak output current	I_o	1.0	-	-	A	
Ripple rejection	R.R.	45	55	-	dB	$f=120\text{Hz}$, $e_{in}=1\text{V}_{rms}$, $I_o=100\text{mA}$
Line regulation	Reg.I	-	20	100	mV	$V_{cc}=(V_o+1)\text{V} \rightarrow 25\text{V}$
Load regulation	Reg.L	-	50	150	mV	$I_o=5\text{mA} \rightarrow 1\text{A}$
Temperature coefficient of output current *	T_{cvo}	-	± 0.02	-	% / $^\circ\text{C}$	$I_o=5\text{mA}$, $T_j=0\sim 125^\circ\text{C}$
Output short current	I_{os}	-	0.4	-	A	$V_{cc}=25\text{V}$

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● Application Circuit

