

# AN8062

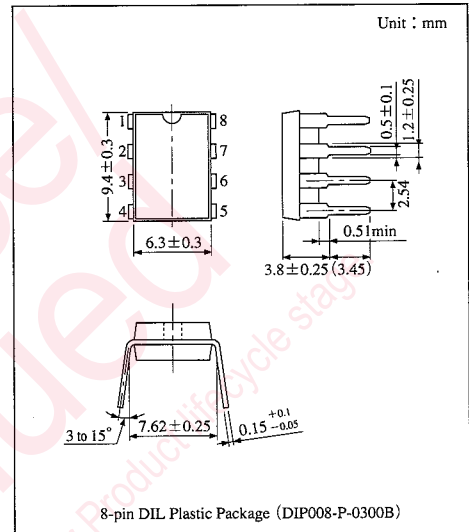
## Low Drop-out Positive Output Voltage Regulator with Reset Pin

### Overview

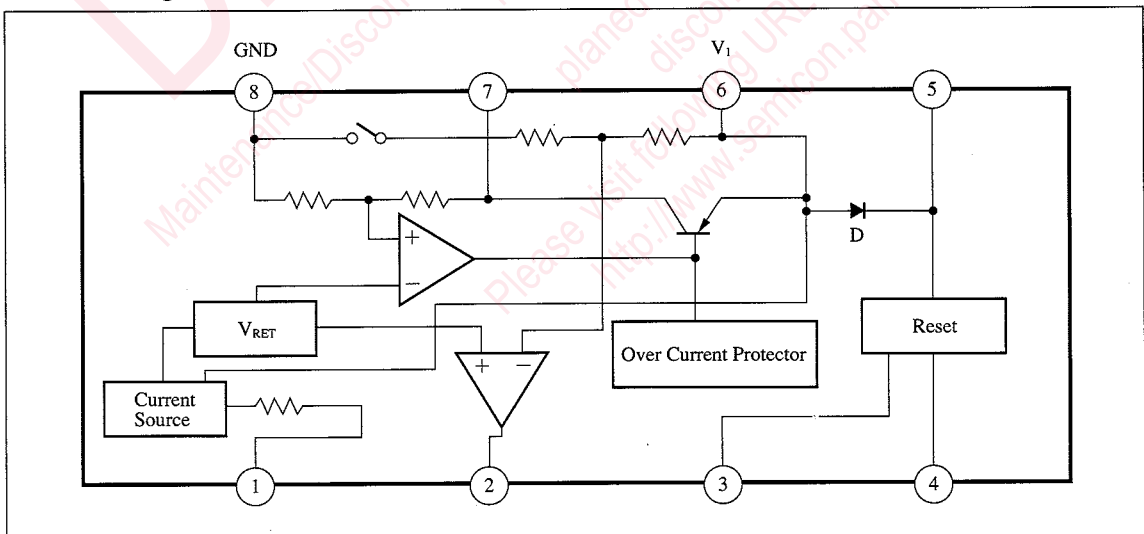
The AN8062, which incorporates output ON/OFF switchable strobe, reduced voltage detection, and micro-computer reset functions, is a voltage regulator IC with small minimum input/output voltage difference and optimum for battery operation.

### Features

- 30mA output current and 4V fixed output voltage
- Minimum input/output voltage difference : typ. 0.1V ( $I_{OUT}=10mA$ )
- Capable of turning on the output by grounding the strobe pin
- Provided with the reduced voltage detection pin which detects and outputs reduction of an input voltage, and the reset pin which resets the microcomputer, etc.



### Block Diagram



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

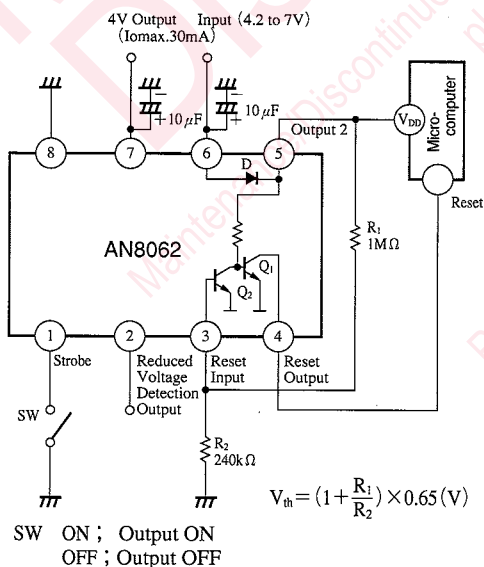
Parameter	Symbol	Rating	Unit
Input voltage	V <sub>I</sub>	12	V
Power dissipation	P <sub>D</sub>	500	mW
Operating ambient temperature	T <sub>opr</sub>	-20 to +75	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

### Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Rating	min	typ	max	Unit
Bias current at reset	I <sub>RB</sub>	V <sub>R</sub> =6V, V <sub>I</sub> =6V	—	—	10	μA
Bias current at no load	I <sub>VB</sub>	V <sub>R</sub> =0V, V <sub>I</sub> =6V	—	1.7	4	mA
Output voltage	V <sub>O</sub>	V <sub>I</sub> =6V, I <sub>O</sub> =3mA	3.84	4	4.16	V
Output voltage tolerance	V <sub>T</sub>	V <sub>I</sub> =4.3 to 7V, I <sub>O</sub> =1 to 10mA	3.82	—	4.18	V
Line regulation	REG <sub>IN</sub>	V <sub>I</sub> =4.3 to 7V, I <sub>O</sub> =3mA	—	3	30	mV
Load regulation	REG <sub>L</sub>	V <sub>I</sub> =6V, I <sub>O</sub> =1 to 10mA	—	1	30	mV
Input/output voltage difference	V <sub>IOS</sub>	V <sub>I</sub> =3.8V, I <sub>O</sub> =10mA	—	0.1	0.2	V
Strobe pin input current (H)	I <sub>RIC(H)</sub>	V <sub>R</sub> =6V, V <sub>I</sub> =6V	-1	—	1	μA
Strobe pin input current (L)	I <sub>RIC(L)</sub>	V <sub>R</sub> =0V, V <sub>I</sub> =6V	-200	—	—	μA
Reduced voltage detection level	V <sub>RDL</sub>	I <sub>O</sub> =3mA	3.95	4.20	4.45	V
Output voltage at reset	V <sub>RO</sub>	V <sub>R</sub> =6V, V <sub>I</sub> =6V	—	—	0.1	V
CPU reset output suction current	I <sub>CR</sub>	V <sub>I</sub> =2.5V, V <sub>R</sub> =0.4V	40	—	—	μA
Hysteresis width	V <sub>H</sub>	I <sub>O</sub> =3mA	—	60	—	mV
Diode voltage drop	V <sub>D</sub>	I <sub>O</sub> =3mA	—	0.7	—	V
Overcurrent protection	I <sub>ocp</sub>	V <sub>I</sub> =6V, V <sub>R</sub> =0V	—	45	—	mA
Output voltage temperature coefficient	ΔV <sub>O</sub> /ΔT	V <sub>I</sub> =6V, I <sub>O</sub> =3mA Ta=0 to 50°C	—	-20	—	ppm/°C

Voltage  
Regu-  
lators

### Application Circuit



### Description of Functioning

#### 1. Functioning of the strobe pin

When the strobe pins grounded, 4V (typ.) is output to the output pin 1 (Pin⑦). If this pin is opened, the circuits other than reset output (Pin④) output 2 (Pin⑤) are turned off.

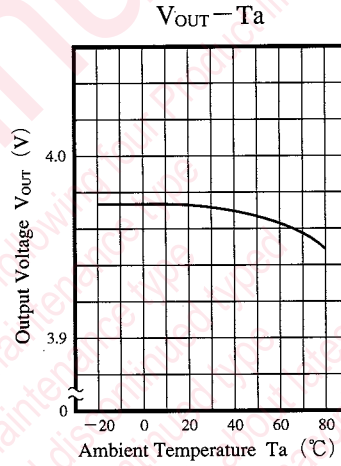
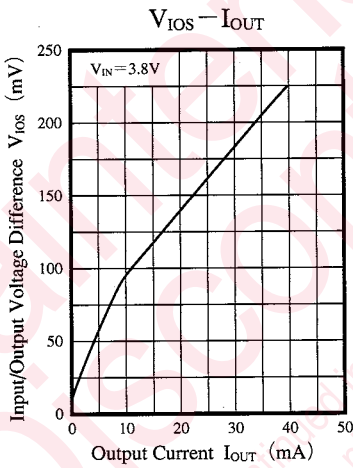
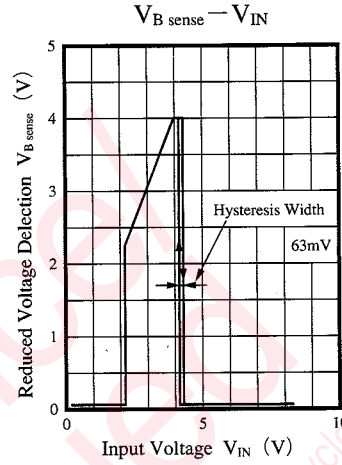
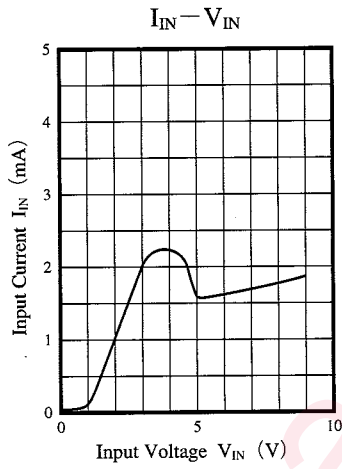
#### 2. Function of the reduced voltage detection pin

When the input voltage of the input pin (Pin⑥) drops to 4.2V (typ.), the reduced voltage detection pin (Pin②) is switched from "L" to "H" (same voltage level as input). There is 60mV (typ.) hysteresis at the end of "H" to "L" switching.

#### 3. Function of the output pin 2

When the voltage (V<sub>DD</sub> of the microcomputer) level of the output 2 drops below V<sub>th</sub>, the transistor (Q<sub>2</sub>) for reset output is turned on and reset output (Pin④) is set to the "L" level. This causes the reset function to reset the microcomputer.

■ Characteristics Curve



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