

AN8062

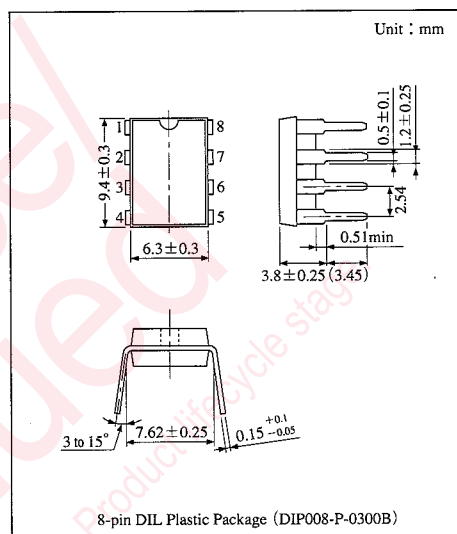
Low Drop-out Positive Output Voltage Regulator with Reset Pin

Overview

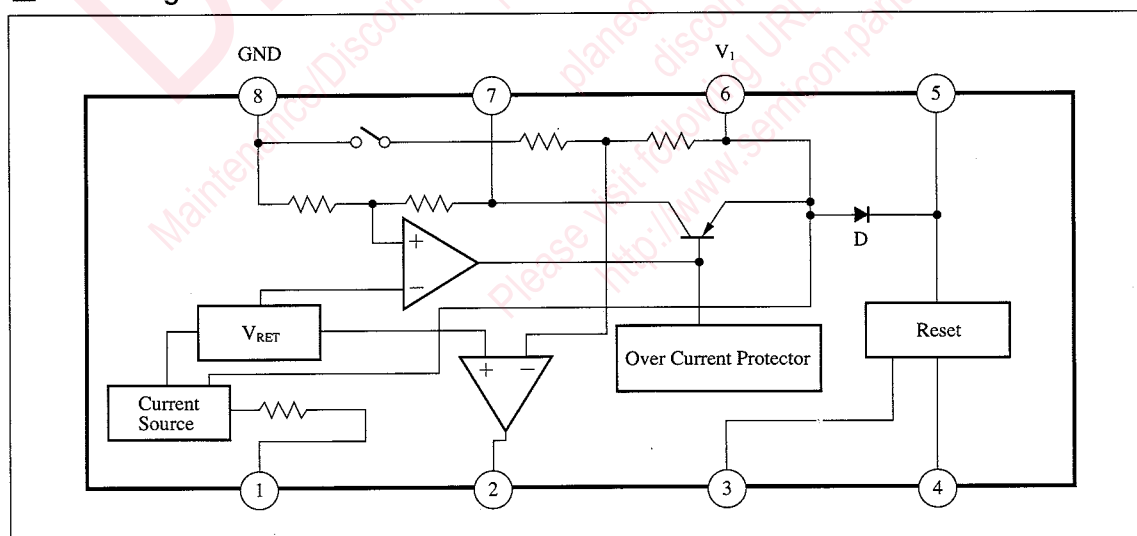
The AN8062, which incorporates output ON/OFF switchable strobe, reduced voltage detection, and micro-computer reset functions, is a voltage regulator IC with small minimum input/output voltage difference and optimum for battery operation.

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)

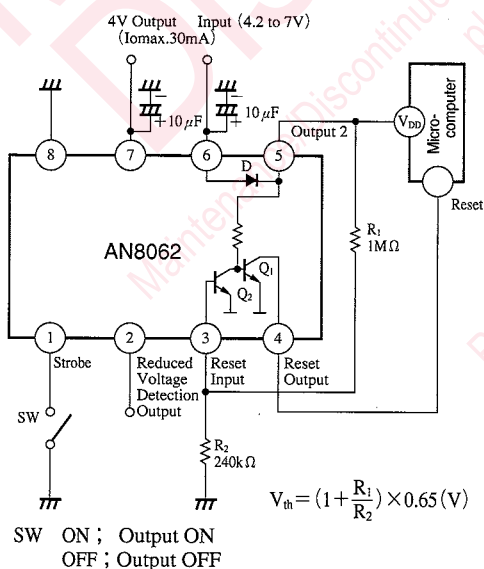
Parameter	Symbol	Rating	Unit
Input voltage	V _I	12	V
Power dissipation	P _D	500	mW
Operating ambient temperature	T _{opr}	-20 to +75	°C
Storage temperature	T _{stg}	-55 to +150	°C

Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Rating	min	typ	max	Unit
Bias current at reset	I _{RB}	V _R =6V, V _I =6V	—	—	10	μA
Bias current at no load	I _{VB}	V _R =0V, V _I =6V	—	1.7	4	mA
Output voltage	V _O	V _I =6V, I _O =3mA	3.84	4	4.16	V
Output voltage tolerance	V _T	V _I =4.3 to 7V, I _O =1 to 10mA	3.82	—	4.18	V
Line regulation	REG _{IN}	V _I =4.3 to 7V, I _O =3mA	—	3	30	mV
Load regulation	REG _L	V _I =6V, I _O =1 to 10mA	—	1	30	mV
Input/output voltage difference	V _{IOS}	V _I =3.8V, I _O =10mA	—	0.1	0.2	V
Strobe pin input current (H)	I _{RIC(H)}	V _R =6V, V _I =6V	-1	—	1	μA
Strobe pin input current (L)	I _{RIC(L)}	V _R =0V, V _I =6V	-200	—	—	μA
Reduced voltage detection level	V _{RDL}	I _O =3mA	3.95	4.20	4.45	V
Output voltage at reset	V _{RO}	V _R =6V, V _I =6V	—	—	0.1	V
CPU reset output suction current	I _{CR}	V _I =2.5V, V _R =0.4V	40	—	—	μA
Hysteresis width	V _H	I _O =3mA	—	60	—	mV
Diode voltage drop	V _D	I _O =3mA	—	0.7	—	V
Overcurrent protection	I _{OCF}	V _I =6V, V _R =0V	—	45	—	mA
Output voltage temperature coefficient	ΔV _O /ΔT	V _I =6V, I _O =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.

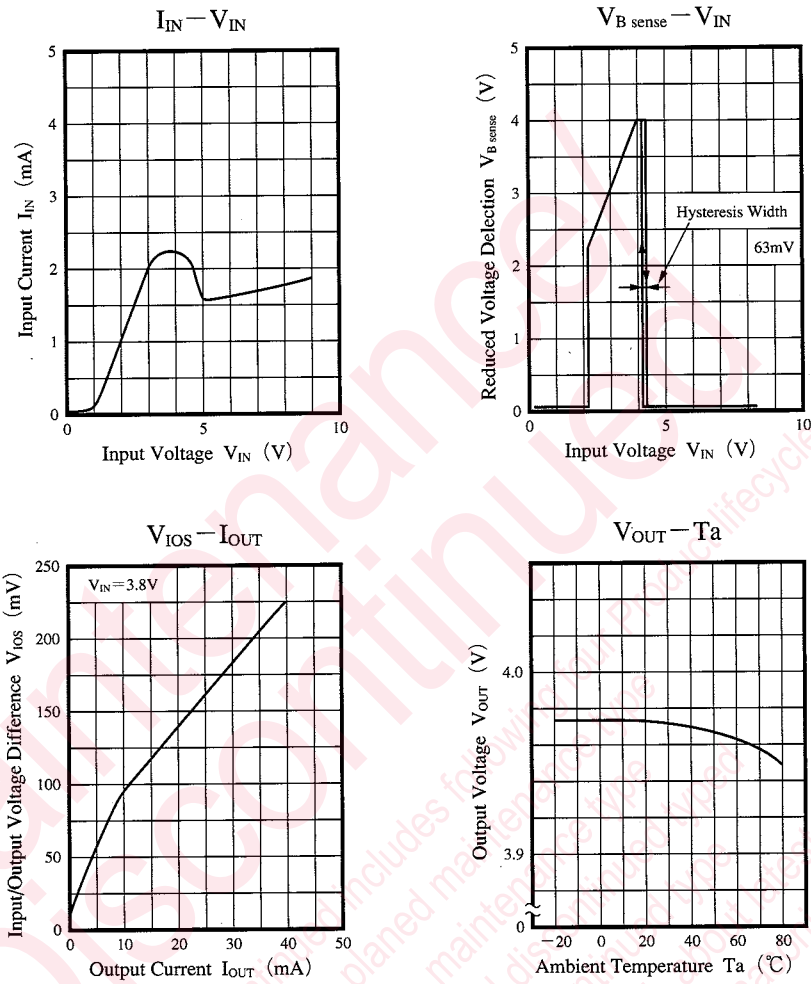
2. Function of the reduced voltage detection pin

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_{DD} of the microcomputer) level of the output 2 drops below V_{th}, the transistor (Q₂) 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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