

AN8079

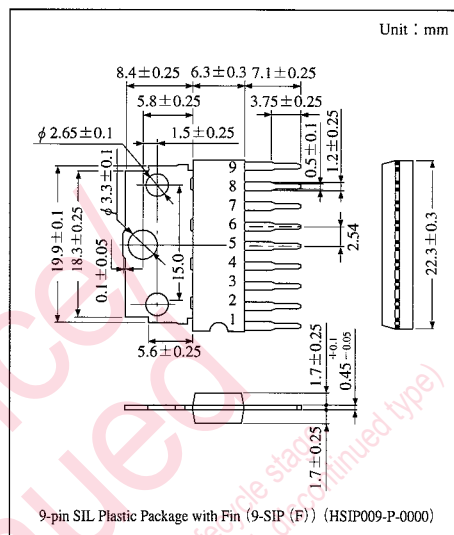
Dual Output Voltage Regulator for 5V Fixed Multipower

Overview

The AN8079 is a general-purpose constant voltage power IC. It is a multipower IC which has a power supply capable of adjusting an output voltage with a PNP transistor and a resistor, and 2-channel 5V fixed output. It can realize a small-sized high-density power circuit.

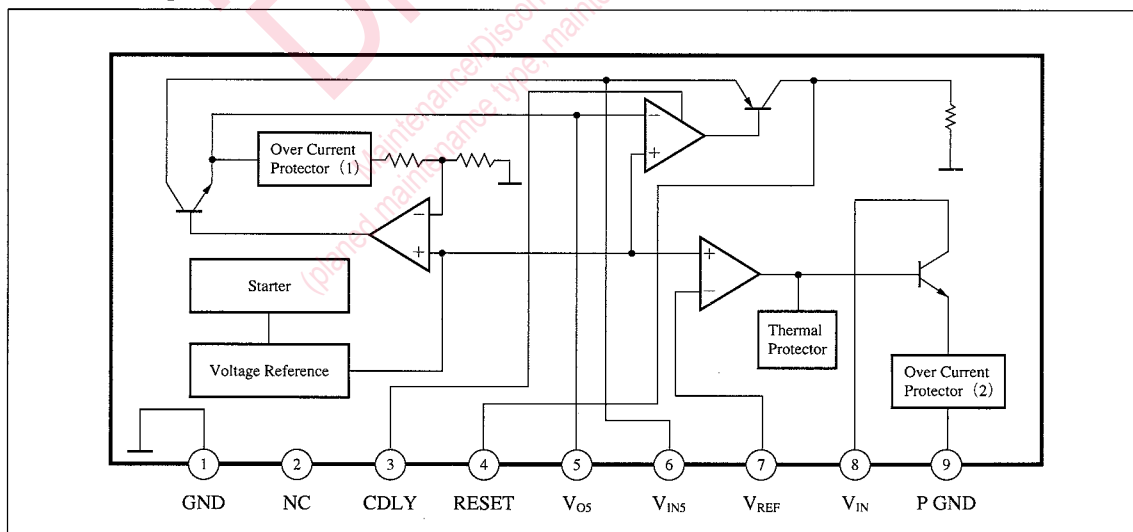
Features

- Built-in 5V output constant voltage power supply ($I_{OS} = 100\text{mA}$)
- Built-in adjustable output constant voltage power supply via an external resistor
- Adjustable output power supply capable of operation with small I/O voltage difference by using an external PNP transistor
- Built-in reset output circuit
- Built-in over-current protective circuit
- Built-in thermal protective circuit



Voltage
Regu-
lators

Block Diagram



■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage	V _{IN} , V _{IN5}	35	V
Power dissipation (Ta=75°C)	P _D	1130	mW
Operating ambient temperature	T _{opr}	-30 to +85	°C
Storage temperature	T _{stg}	-55 to +150	°C

■ Recommended Operating Range (Ta=25°C)

Parameter	Symbol	Rating
Operating supply voltage range	V _{IN}	3.5 to 35V
	V _{IN5}	7.5 to 35V

■ Electrical Characteristics (Ta=25°C)

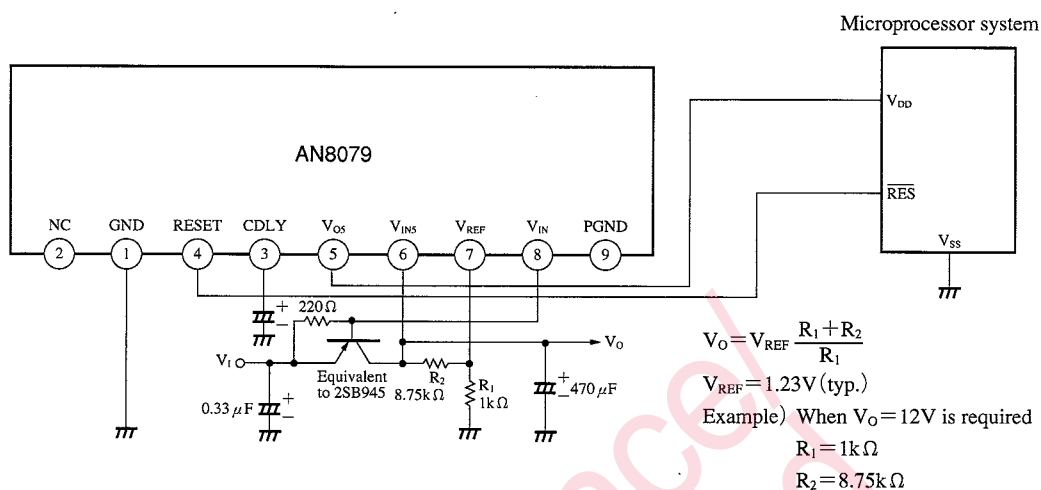
Parameter	Symbol	Condition	min	typ	max	Unit
Output voltage 1 (V _O)	V _O	V _I ≥ V _O + 0.5V	3.5	—	30	V
Line regulation	REG _I	V _I = 15 to 20V	—	0.08	0.2	%/V
Load regulation	REG _L	I _O = 10 to 200mA	—	0.02	0.1	%
Bias current	I _B	I _O = 0A, I _{O5} = 0A	—	2	3	mA
Reference voltage	V _{REF}		1.18	1.23	1.28	V
Ripple rejection ratio	RR	V _I = 2V _{PP} , f = 120Hz	—	60	—	dB
Output voltage 2 (V _{O5})	V _{O5}		4.75	5	5.25	V
Line regulation	REG _{I5}	V _{I5} = 8 to 20V	—	45	100	mV
Load regulation	REG _{L5}	I _{O5} = 1 to 100mA	—	10	60	mV
Minimum input/output voltage difference	V _{DIF5}		—	1.7	—	V
Bias current	I _{bias}	I _{O5} = 0A, I _O = 0A	—	1.5	2.5	mA
Ripple rejection ratio	RR ₅	V _{I5} = 2V _{PP} , f = 120Hz	—	60	—	dB
Output noise voltage	V _{no5}	f = 10Hz to 100kHz	—	200	—	μV
Reset-on threshold voltage	V _{RT(on)}		4.35	4.5	4.7	V
Reset threshold hysteresis width	ΔV _{RT}		75	150	250	mV
Reset output delay time	t _d	C _d = 0.1 μF	—	10	—	ms
H reset output voltage	V _{ORH}	I _{RESET} = 1mA	V _{O5} - 0.4	V _{O5} - 0.1	V _{O5}	V
L reset output voltage	V _{ORL}	V _{I5} = 4V, I _{RESET} = 0mA	—	0	0.5	V

Note 1) Unless otherwise specified, V_I = 20V, V_{I5} = 12V, I_O = 200mA, and I_{O5} = 100mA

■ Pin Descriptions

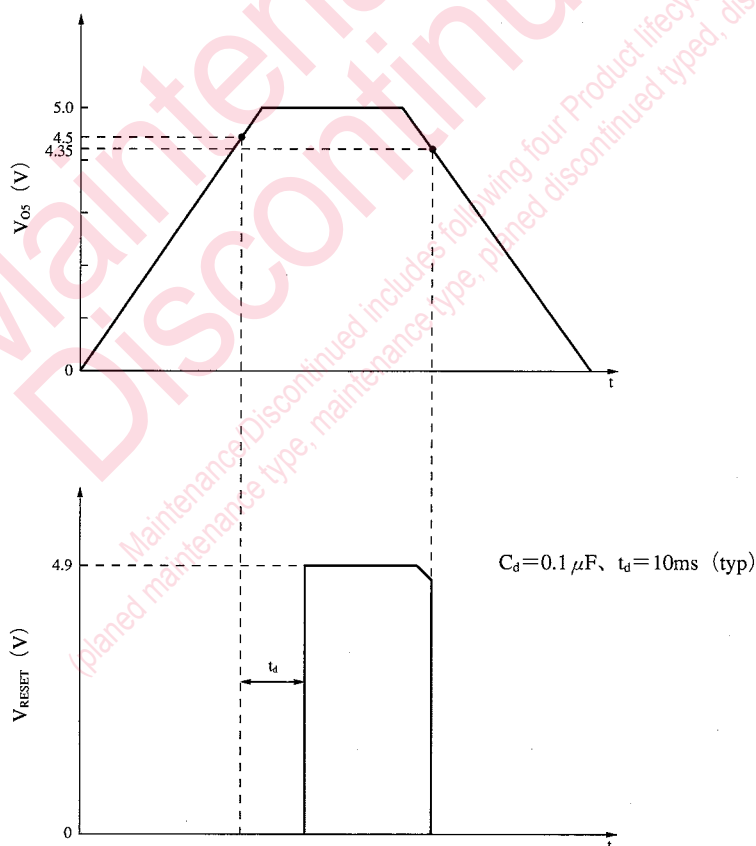
Pin No.	Description
1	GND
2	NC
3	Reset output control pin
4	Reset signal output pin
5	5V output pin
6	5V input pin
7	Reference voltage pin
8	Adjustable output pin
9	PGND

■ Application Circuit



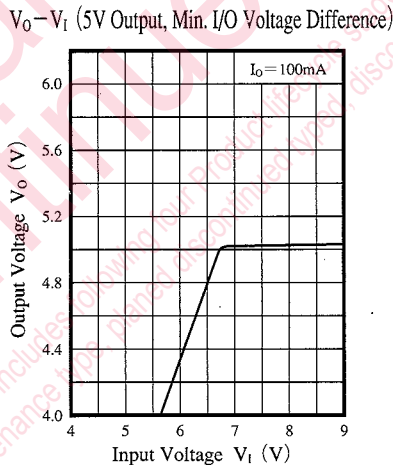
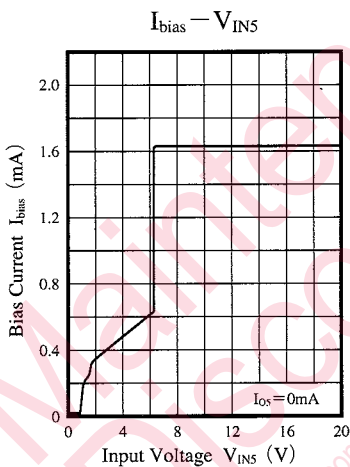
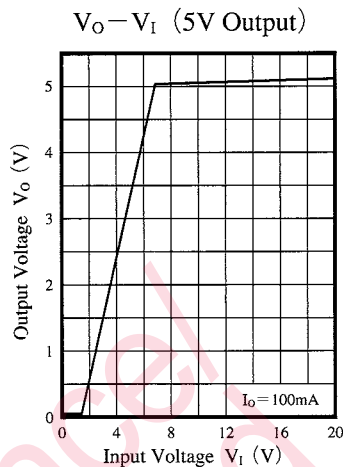
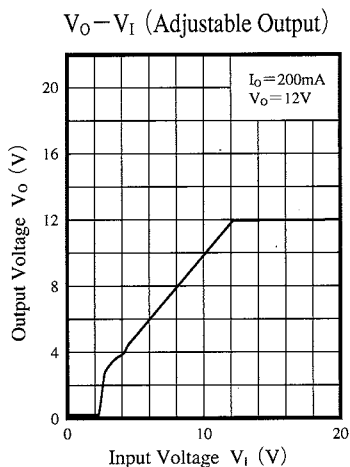
■ Supplemental Descriptions

● Timing Chart

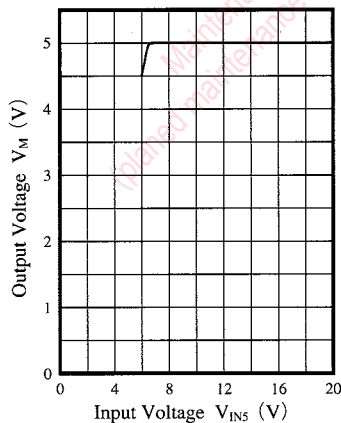


■ Supplementary Descriptions (cont.)

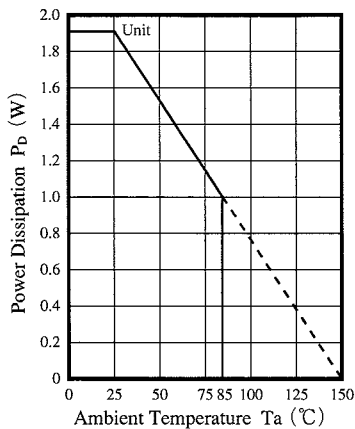
● Characteristic Charts



$V_M - V_{\text{IN5}}$ (Reset Output Voltage)



$P_D - T_a$



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