AN6751

Current Control Circuit

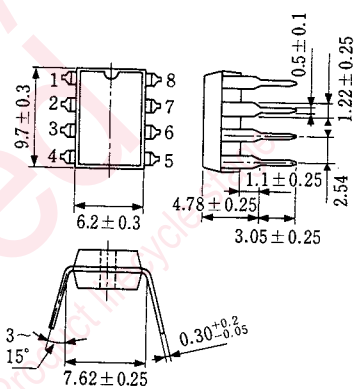
■ Outline

The AN6751 is a current control circuit operated at V_{CC}=3V and output with open collector. It is a semiconductor IC having the timer function in which diode for surge absorption is incorporated.

■ Features

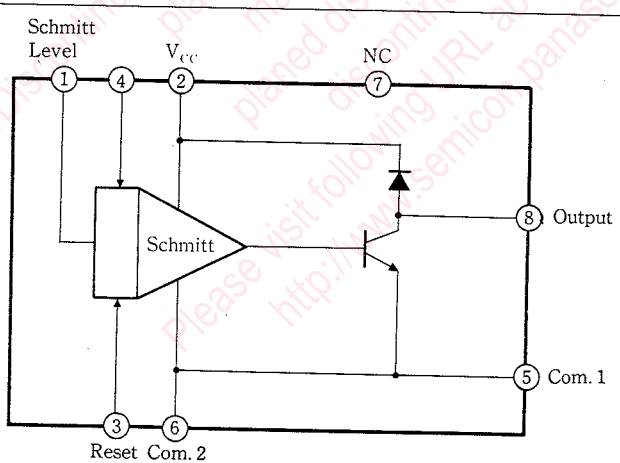
- Output current in excess of 400mA control with operating current 10mA
- Timer function consists of schmitt circuit and C, R part.
- Power equals zero after schmitt circuit operated.
- Wide supply voltage range : $V_{CC(opr)}$=2.0~4.0V
- Low saturation voltage

Unit : mm



8-Lead DIL Plastic Package

■ Block Diagram



■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	Schmitt Level Pin	5	Remote Control Pin
2	V_{CC}	6	Remote Control Pin
3	Reset Pin	7	NC
4	C and R Control Pin	8	Motor Pin

■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating		Unit
Supply Voltage	V_{CC}	5		V
Supply Current	I_{CC}	25		mA
Circuit Voltage	$V_{n-5,6}$*	−0.5	5.0	V
	$V_{3-5,6}$	−0.5	3.0	V
Circuit Current	I_3	−	5	mA
	I_4	−	10	mA
	I_8	−	700	mA
Power Dissipation	P_D	500		mW
Operating Ambient Temperature	T_{opr}	−20~+75		°C
Storage Temperature	T_{stg}	−40~+150		°C

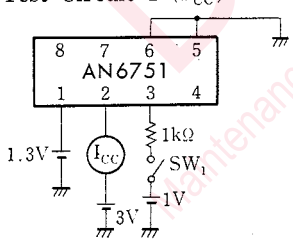
*n=1, 2, 4, 8

■ Electrical Characteristics (Ta=25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Supply Current	I_{CC}	1	V_{CC}=3V	5	10	20	mA
Schmitt Level	V_1	2	V_{CC}=3V	0.9	1.1	1.3	V
OFF Current	I_{2OFF}	3	V_{CC}=4V			3	μA
Bias Current	I_1	4	V_{CC}=3V	−5	−0.3	1	μA
Pin ④ Saturation Voltage	V_{4sat}	5	V_{CC}=3V		0.1	0.2	V
Output Saturation Voltage	V_{8sat}	6	V_{CC}=2.0V, I_8=400mA		0.3	0.6	V

Note : Operating supply voltage : $V_{CC\ (opr)}$=2~4V

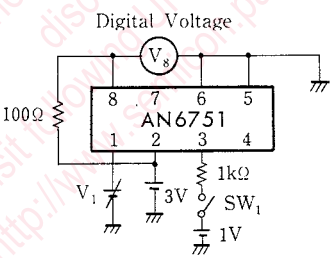
Test Circuit 1 (I_{CC})



● **Supply Current**

I_{CC} value after SW1 is turned ON temporarily.

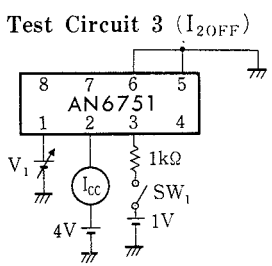
Test Circuit 2 (V_1)



● **Schmitt Level**

V1 value when V8 voltage is changed from ~0.1V to ~3V after SW1 is turned ON temporarily and V1 is lowered from 1.5V.

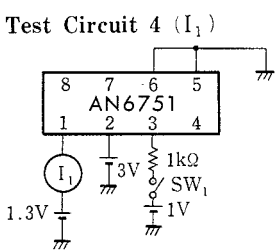
Test Circuit 3 (I_{2OFF})



● **OFF Current**

I_{CC} value after SW1 is turned ON temporarily and V1 is changed from 1.6V to 0.9V.

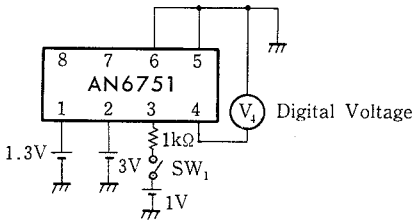
Test Circuit 4 (I_1)



● **Bias Current**

I1 value after SW1 is turned ON temporarily.

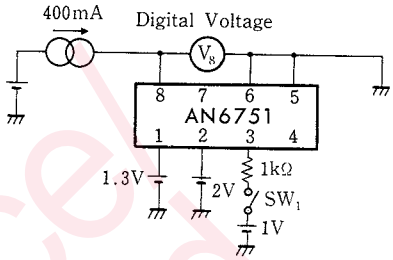
Test Circuit 5 (V_{4sat})



● **Pin ④ Saturation Voltage**

V4 value after SW1 is turned ON temporarily.

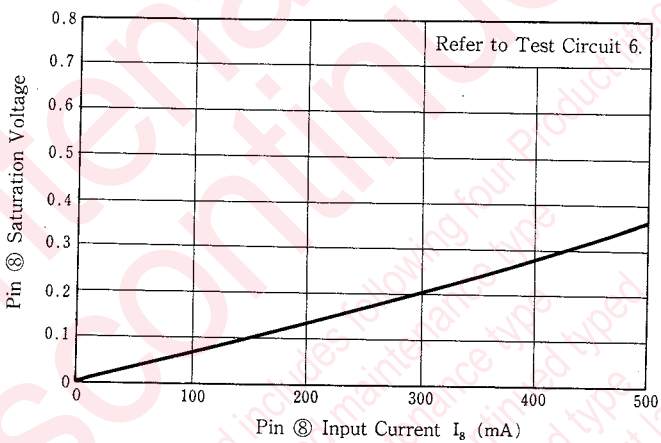
Test Circuit 6 (V_{8sat})



● **Output Saturation Voltage**

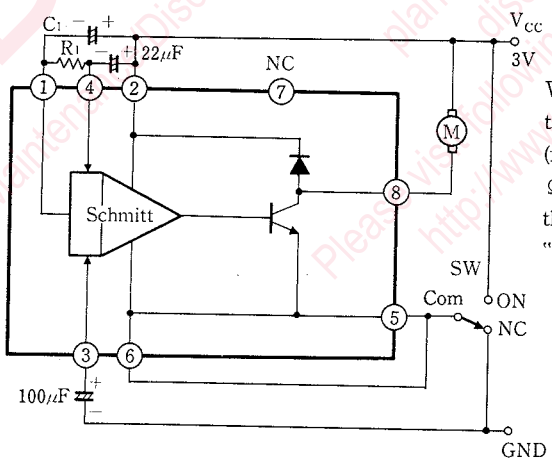
V8 value after SW1 is turned ON temporarily.

V_{8sat}—I_8



■ Application Circuit

● **Deodorization fan motor control for an oilstove**



When SW is temporarily connected to ON and then to NC, the motor rotates at fixed time (for about one minute at C1=220μF, R1=270kΩ) to be determined at C1 and R1. Atfter that, the motor stops and power consumption becomes "0".

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