

# AN6610

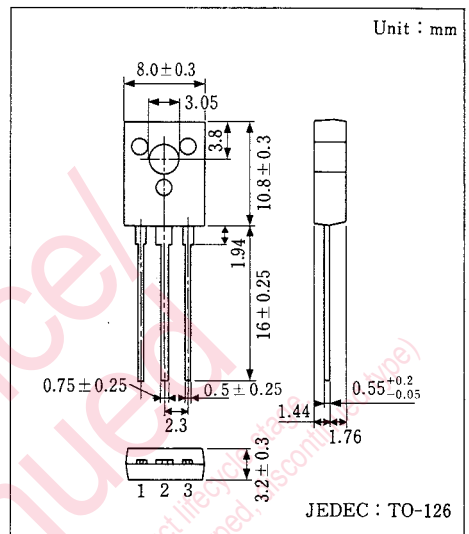
## Motor Control Circuit

### ■ Outline

The AN6610 is an integrated circuit designed for the rotation control of a compact DC motor which is used for a tape recorder, record player, etc.

### ■ Features

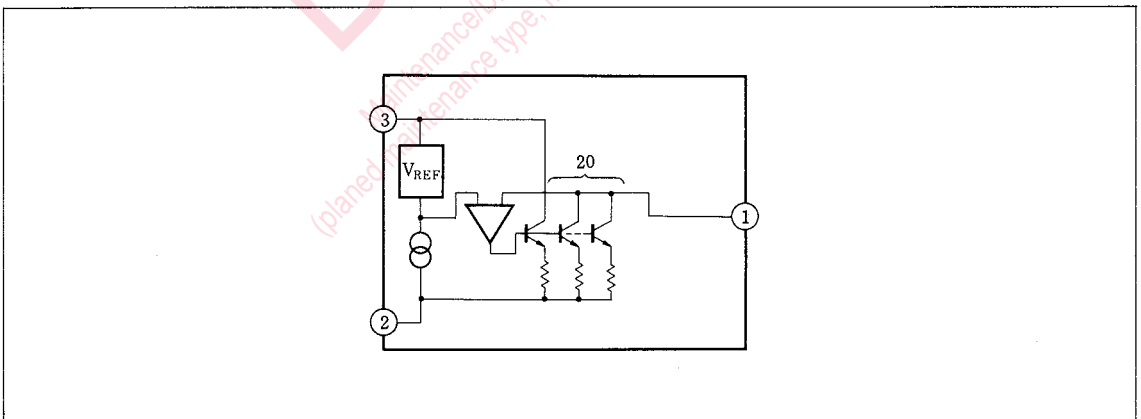
- Small, three-lead plastic package for compact motor
- Large starting torque.
- Wide range of operating voltage.
- Stable standard voltage :  $V_{CC} = 4.5 \sim 16V$ .
- Highly stable operation over a wide range of supply voltages and temperature.



### ■ Pin

Pin No.	Pin Name
1	Motor Pin
2	GND
3	Control Pin

### ■ Block Diagram



■ Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Rating	Unit
Supply Voltage	V <sub>CC</sub>	16*1	V
Supply Current	I <sub>CC</sub>	1000	mA
Power Dissipation	P <sub>D</sub>	1300*2	mW
Operating Ambient Temperature	T <sub>opr</sub>	-20 ~ +70	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +150	°C

\*1 Voltage is not directly applied to IC pin. Apply 14.4V to it, if necessary.

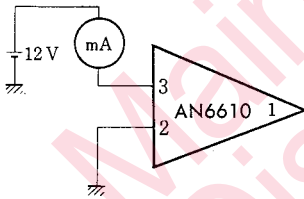
\*2 Ta = 25°C, With a 10×10 mm bakelite printed circuit board (35 μm Cu leaf).

■ Electrical Characteristics (Ta = 25°C)

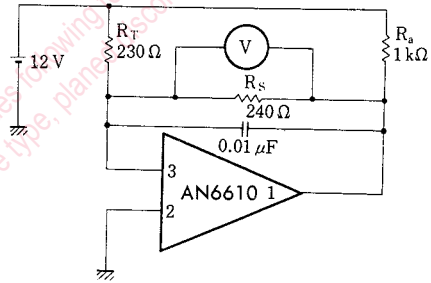
Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit
Static Circuit Current	I <sub>CQ</sub>	1	V <sub>CC</sub> = 12V, I <sub>1</sub> = 0			2.4	mA
Reference Voltage	V <sub>3-1</sub>	2	V <sub>CC</sub> = 12V, R <sub>a</sub> = 1kΩ	1.07	1.22	1.37	V
Starting Current	I <sub>a</sub>	3	V <sub>CC</sub> = 4.5V, R <sub>a</sub> = 5Ω	450			mA
Voltage Variation Characteristics for Rotating Speed	ΔN <sub>V</sub>	4	V <sub>CC</sub> = 10V ~ 16V			20	rpm/V
Time Drift Characteristics for Rotating Speed	ΔN <sub>T</sub>	4	V <sub>CC</sub> = 12V, I <sub>CC</sub> = 64mA		-0.2		%
Temperature Variation Characteristics for Rotating Speed	ΔN <sub>A</sub> *	4	V <sub>CC</sub> = 12V, T <sub>a</sub> = -10°C ~ 60°C		±50		ppm/°C

\* In case that only IC temperature is changed.

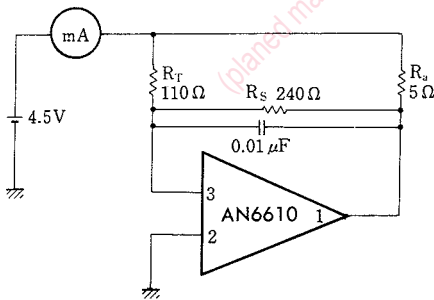
Test Circuit 1 (I<sub>CQ</sub>)



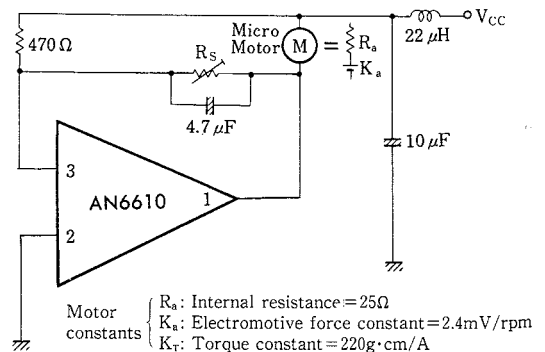
Test Circuit 2 (V<sub>3-1</sub>)



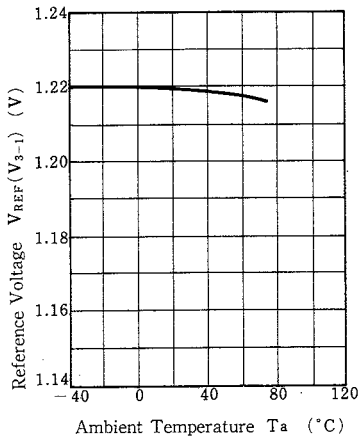
Test Circuit 3 (I<sub>a</sub>)



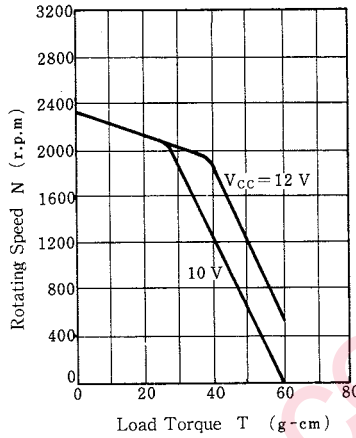
Test Circuit 4 (|ΔN<sub>V</sub>|, ΔN<sub>T</sub>, ΔN<sub>A</sub>)



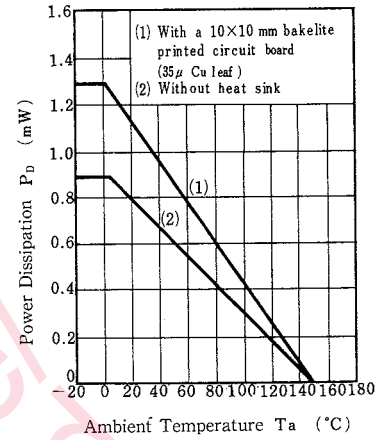
$V_{REF}(V_{3-1}) - T_a$



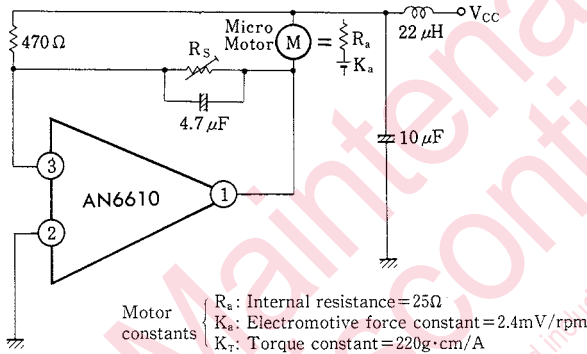
$N - T$



$P_D - T_a$



■ Application Circuit



Maintenance/Discontinued

(planned maintenance type, maintenance type, planned discontinued type, discontinued type)



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