

MOTOR CONTROL CIRCUIT—YD6651

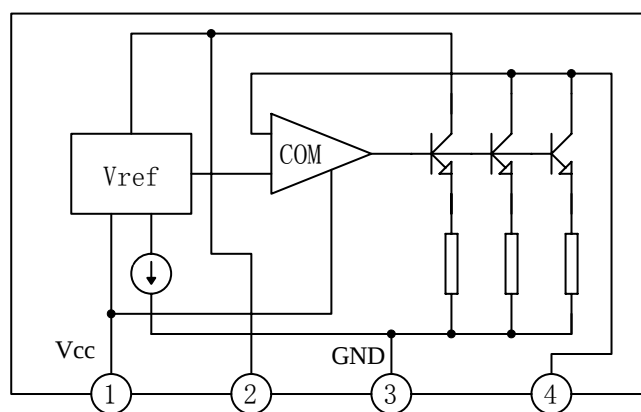
DESCRIPTION

The YD6651 is an IC designed for the rotating speed control of a compact DC motor that is used for a tape recorder, record player, etc.

FEATURES

- *Small four-lead plastic package for compact motor;
- *Fewer external parts;
- *Stable low reference voltage (1.0V typ.), wide motor speed setting
- *Highly stable operation over a wide range of supply voltage and torque supply voltage, $V_{cc}=3.5\sim 14.4V$;
- *Reverse voltage protection circuit is built-in.

BLOCK DIAGRAM



NO.	1	2	3	4
SYMBOL	Vcc	CON	GND	OUT

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ABSOLUTE MAXIMUM RATINGS (T_{amb}=25℃)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V _{CC}	14.4	V
Supply current	I _{CC} (Note1)	2	A
Power Dissipation	P _D (Note 2)	0.9	W
	P _D (Note 3)	1.3	
Operating Temperature	T _{opr}	-20~+75	℃
Storage Temperature	T _{stg}	-40~+150	℃

Note 1: t ≤ 5 Second

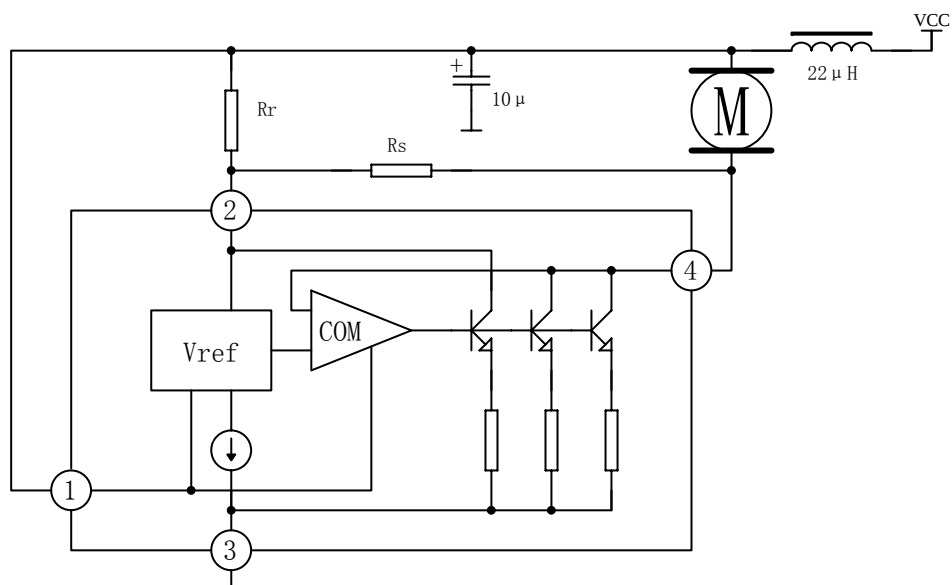
Note 2: No radiator fin

Note 3: With a 10×10mm² bakelite printed circuit board**ELECTRICAL CHARACTERISTICS**(T_{amb}=25℃, V_{CC}=6V, Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference Voltage	V _{ref}	V _{CC} =6V, R _M =1k Ω	0.85	1.0	1.15	V
Bias Current	I _{BIAS}	V _{CC} =6V		0.8	1.8	mA
Current Proportional Constant	K	V _{CC} =6V, I ₄ =40mA	35	40	45	
Saturation Voltage	V _{sat}	V _{CC} =4.2V, R _M =5.0 Ω		1.15	2	V
Voltage Characteristics (1)	$\frac{\Delta V_{ref}}{V_{ref}} / V_{CC}$	V _{CC} =3.5V~14V R _M =1k Ω		-0.1		%/V
Voltage Characteristics (2)	$\frac{\Delta K}{K} / V_{CC}$	V _{CC} =3.5V~14V I ₄ =40mA		0.2		%/V
Current Characteristics (1)	$\frac{\Delta V_{ref}}{V_{ref}} / I_4$	I ₄ =50mA~200mA		-0.02		%/mA
Current Characteristics (2)	$\frac{\Delta K}{K} / I_4$	I ₄ =50mA~200mA		-0.01		%/mA
Temperature Characteristics (1)	$\frac{\Delta V_{ref}}{V_{ref}} / T_a$	T _a =-20℃~+75℃ V _{CC} =6V, R _M =1k Ω		0.01		%/℃
Temperature Characteristics (2)	$\frac{\Delta K}{K} / T_a$	T _a =-20℃~+75℃ I ₄ =40mA		0.01		%/℃

APPLICATION CIRCUIT

$$R_r < R_m \times 40$$



OUTLINE DRAWING

