

MOTOR CONTROL CIRCUIT—YD6651B

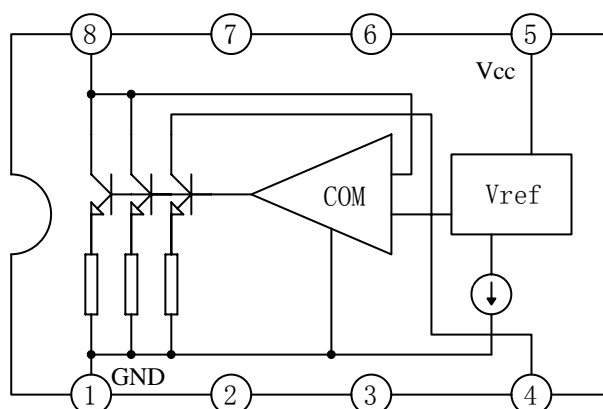
DESCRIPTION

The YD6651B 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	4	5	8	2/3/6/7
SYMBOL	GND	CON	V _{cc}	OUT	NC

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YOUDA INTEGRATED CIRCUIT**YD6651B****ABSOLUTE MAXIMUM RATINGS** ($T_{amb}=25^{\circ}\text{C}$)

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_{CC}	14.4	V
Supply Current	I_{CC} (Note1)	2.0	A
Power Dissipation	P_D (Note 2)	0.6	W
	P_D (Note 3)	1.0	
Operating Temperature	T_{opr}	-20~+75	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40~+150	$^{\circ}\text{C}$

Note 1: $t \leq 5$ Second

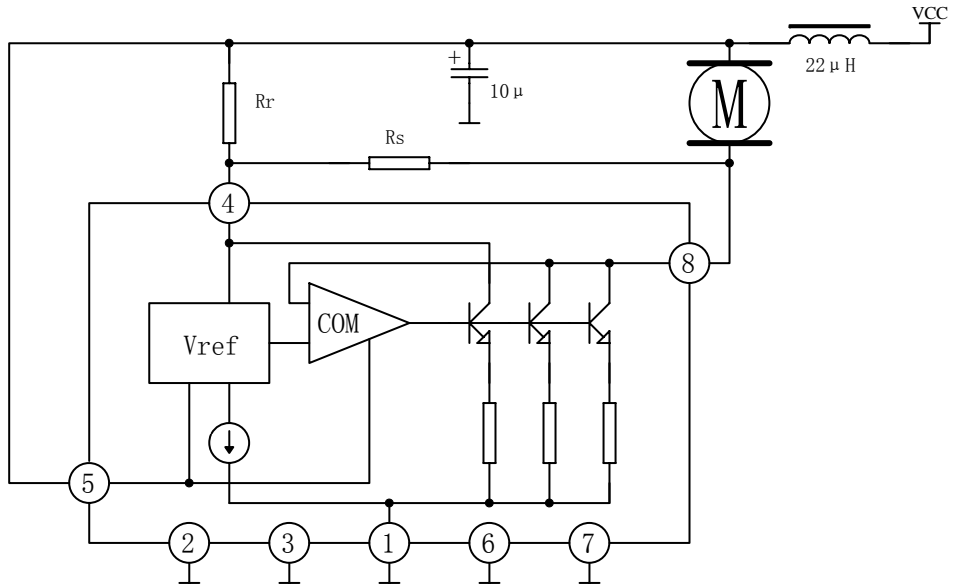
Note 2: No radiator fin

Note 3: With a $10 \times 10 \text{mm}^2$ bakelite printed circuit board**ELECTRICAL CHARACTERISTICS**($T_{amb}=25^{\circ}\text{C}$, $V_{CC}=6\text{V}$, Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Reference Voltage	V_{ref}	$V_{CC}=6\text{V}$, $R_M=1\text{k}\Omega$	0.85	1.0	1.15	V
Bias Current	I_{BIAS}	$V_{CC}=6\text{V}$		0.8	1.8	mA
Current Proportional Constant	K	$V_{CC}=6\text{V}$, $I_4=40\text{mA}$	35	40	45	
Saturation Voltage	V_{sat}	$V_{CC}=4.2\text{V}$, $R_M=5.0\Omega$		1.15	2	V
Voltage Characteristics (1)	$\frac{\Delta V_{ref}}{V_{ref}} / V_{CC}$	$V_{CC}=3.5\text{V} \sim 14\text{V}$ $R_M=1\text{k}\Omega$		-0.1		%/V
Voltage Characteristics (2)	$\frac{\Delta K}{K} / V_{CC}$	$V_{CC}=3.5\text{V} \sim 14\text{V}$ $I_4=40\text{mA}$		0.2		%/V
Current Characteristics (1)	$\frac{\Delta V_{ref}}{V_{ref}} / I_4$	$I_4=50\text{mA} \sim 200\text{mA}$		-0.02		%/mA
Current Characteristics (2)	$\frac{\Delta K}{K} / I_4$	$I_4=50\text{mA} \sim 200\text{mA}$		-0.01		%/mA
Temperature Characteristics (1)	$\frac{\Delta V_{ref}}{V_{ref}} / T_a$	$T_a=-20^{\circ}\text{C} \sim +75^{\circ}\text{C}$ $V_{CC}=6\text{V}$, $R_M=1\text{k}\Omega$		0.01		%/ $^{\circ}\text{C}$
Temperature Characteristics (2)	$\frac{\Delta K}{K} / T_a$	$T_a=-20^{\circ}\text{C} \sim +75^{\circ}\text{C}$ $I_4=40\text{mA}$		0.01		%/ $^{\circ}\text{C}$

APPLICATION CIRCUIT

$$R_r < R_m \times 40$$



OUTLINE DRAWING

DIP-8

unit:mm

