

## MOTOR CONTROL CIRCUIT—YD6652

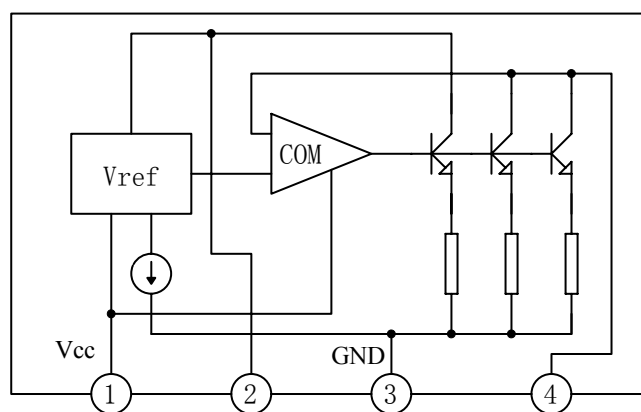
### DESCRIPTION

The YD6652 is an IC designed for the rotating speed control of a compact DC motor which is used for a tape recorder, record played, etc

### FEATURES

- \*Small four-lead plastic package for compact motor;
- \*Fewer external parts;
- \*Stable low reference voltage (1.27V typ.), wide motor speed setting;
- \*Highly stable operation over a wide range of supply voltage and torque supply voltage:  $V_{cc}=3.5\sim 16V$ ;
- \*Reverse voltage protection circuit is built-in.

### BLOCK DIAGRAM



| NO.    | 1   | 2   | 3   | 4   |
|--------|-----|-----|-----|-----|
| SYMBOL | Vcc | CON | GND | OUT |

### WuXi YouDa Electronics Co., Ltd

Add: No.5 Xijin Road, National Hi-Tech Industrial Development Zone, Wuxi Jiangsu China

Tel: 86-510-85205117 86-510-85205106

Fax: 86-510-85205110

Website: [www.e-youda.com](http://www.e-youda.com)

SHENZHEN OFFICE

Tel:

86-755-83740369

Fax:

86-755-83741418

**ABSOLUTE MAXIMUM RATINGS** (T<sub>amb</sub>=25°C)

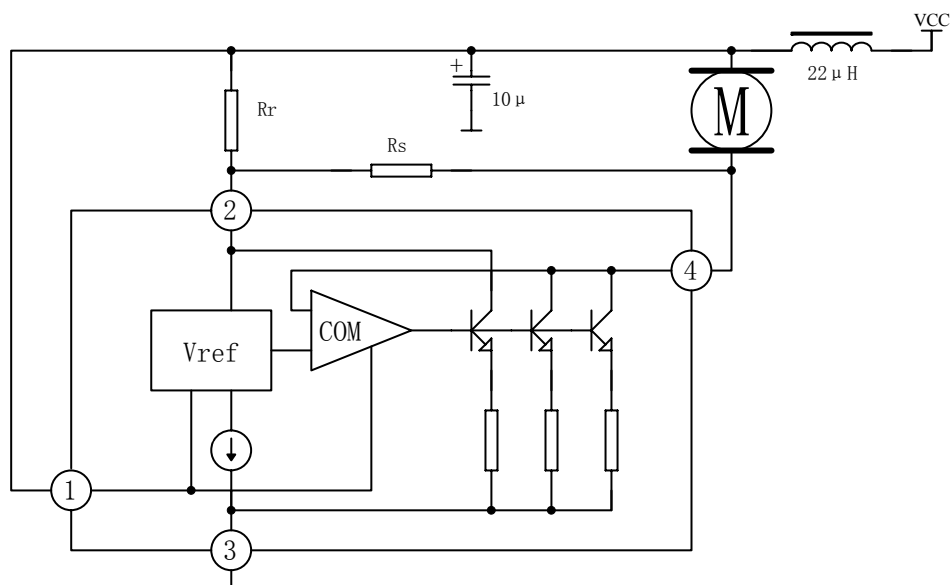
| PARAMETER               | SYMBOL           | VALUE    | UNIT |
|-------------------------|------------------|----------|------|
| Supply Voltage          | V <sub>CC</sub>  | 18       | V    |
| Power Dissipation       | P <sub>D</sub>   | 1.4      | W    |
| Operating Temperature t | T <sub>opr</sub> | -25~+75  | °C   |
| Storage Temperature     | T <sub>stg</sub> | -55~+150 | °C   |

**ELECTRICAL CHARACTERISTICS**(T<sub>amb</sub>=25°C, V<sub>CC</sub>=12V, Unless otherwise specified)

| PARAMETER                       | SYMBOL                                           | TEST CONDITIONS                                        | MIN  | TYP   | MAX  | UNIT |
|---------------------------------|--------------------------------------------------|--------------------------------------------------------|------|-------|------|------|
| Reference Voltage               | V <sub>ref</sub>                                 | I <sub>M</sub> =10mA                                   | 1.10 | 1.27  | 1.40 | V    |
| Bias Current                    | I <sub>BIAS</sub>                                | R <sub>M</sub> =180 Ω                                  | 0.5  | 0.8   | 1.2  | mA   |
| Current Proportional Constant   | K                                                | R <sub>M1</sub> =44 Ω, R <sub>M2</sub> =33 Ω           | 19.5 | 22    | 23.5 |      |
| Saturation Voltage              | V <sub>sat</sub>                                 | V <sub>CC</sub> =4.2V, R <sub>M</sub> =4.4 Ω           |      | 1.5   | 2.0  | V    |
| Voltage Characteristics (1)     | $\frac{\Delta V_{ref}}{V_{ref}} / \Delta V_{CC}$ | V <sub>CC</sub> =6.3V~16V<br>I <sub>M</sub> =100mA     |      | 0.06  |      | %/V  |
| Voltage Characteristics (2)     | $\frac{\Delta K}{K} / \Delta V_{CC}$             | V <sub>CC</sub> =6.3V~16V<br>I <sub>M</sub> =100mA     |      | 0.4   |      | %/V  |
| Current Characteristics (1)     | $\frac{\Delta V_{ref}}{V_{ref}} / \Delta I_M$    | I <sub>M</sub> =30mA~200mA                             |      | -0.02 |      | %/mA |
| Current Characteristics (2)     | $\frac{\Delta K}{K} / \Delta I_M$                | I <sub>M</sub> =30mA~200mA                             |      | -0.02 |      | %/mA |
| Temperature Characteristics (1) | $\frac{\Delta V_{ref}}{V_{ref}} / \Delta T_a$    | T <sub>amb</sub> =-20°C~+75°C<br>I <sub>M</sub> =100mA |      | 0.01  |      | %/°C |
| Temperature Characteristics (2) | $\frac{\Delta K}{K} / \Delta T_a$                | T <sub>amb</sub> =-20°C~+75°C<br>I <sub>M</sub> =100mA |      | 0.01  |      | %/°C |

# APPLICATION CIRCUIT

$$R_r < R_m \times 20$$



# OUTLINE DRAWING

