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## Description

TA6586 is a monolithic IC designed for driving bi-directional DC motor. It has two pins of logic inputs for controlling the direction, forward and backward. The circuit feature good anti-interference performance, small standby current and low output saturation pressure drop. It has a built-in clamp diode to reverse the impact of the release of inductive load current, making it in the drive relays, DC motors, stepper motors or control the use of switching power safe and reliable. TA6586 is suitable for toy vehicles, remote-controlled aircraft motor drive, automatic valve motor, electromagnetic lock drive, precision instruments and other circuits.

## Features

- Low stand-by current:  $\leq 2\mu\text{A}$
- Wide supply voltage range 3.0V~14V
- Built-in Brake Function
- Thermal Shutdown protection
- Over Current Limit and Short Circuit Protect Function
- DIP8 Pb-Free package.

## Pin Function

| Pin NO | Name | Function        |
|--------|------|-----------------|
| 1      | BI   | Backward input  |
| 2      | FI   | Forward input   |
| 3      | GND  | Ground          |
| 4      | Vcc  | Vcc             |
| 5, 6   | FO   | Forward output  |
| 7, 8   | BO   | Backward output |

## Input Truth Table

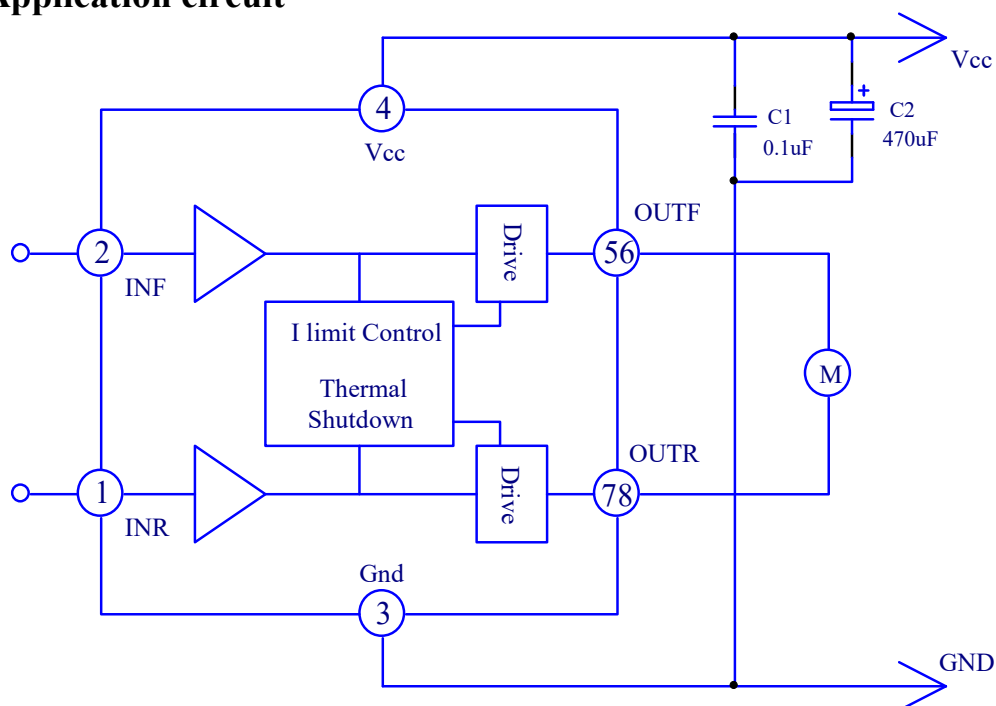
| 2pin Finput | 1pin Binput | 5,6pin Foutput | 7,8pin Boutput |
|-------------|-------------|----------------|----------------|
| H           | L           | H              | L              |
| L           | H           | L              | H              |
| H           | H           | L              | L              |
| L           | L           | Open           | Open           |

## Absolute Maximum Rating

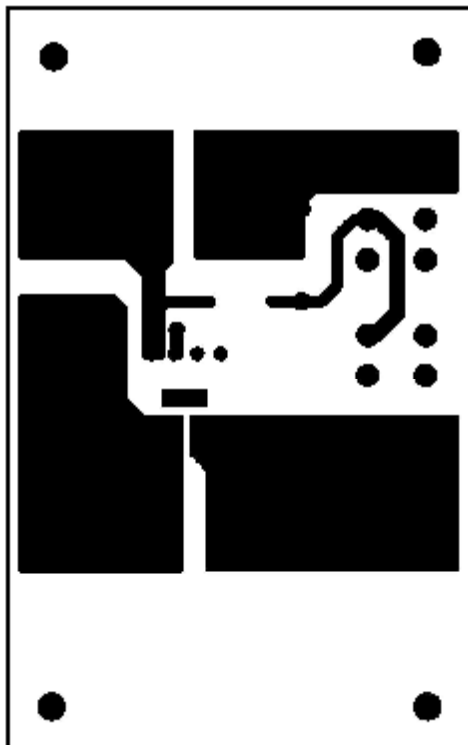
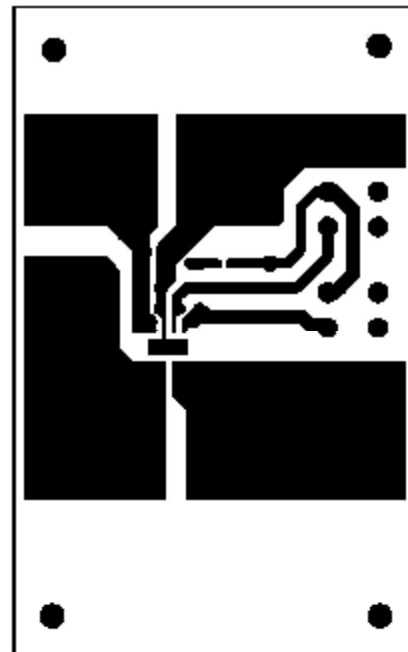
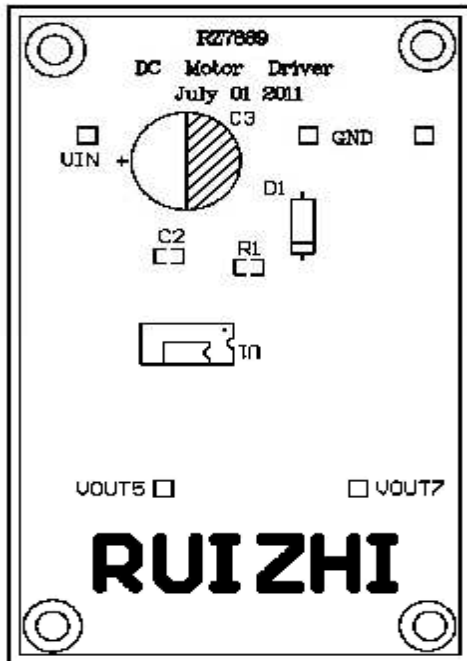
| Parameter              | Symbol | Rating   | Unit |
|------------------------|--------|----------|------|
| Maximum supply voltage | Vcc    | 15       | V    |
| Output current         | Iout   | 9        | A    |
| Operating Temperature  | Top    | -25~+85  | °C   |
| Storage temperature    | Tstg   | -55~+150 | °C   |

**Electrical Characteristics (Vcc=6V, Ta=25°C , unless otherwise specified)**

| Parameter                    | Symbol            | Condition                                                                      | Min  | Typ  | Max | Unit |
|------------------------------|-------------------|--------------------------------------------------------------------------------|------|------|-----|------|
| Operating Voltage            | V <sub>OPR</sub>  |                                                                                | 3.0  | --   | 14  | V    |
| Stand-by Current             | I <sub>s</sub>    | V <sub>CC</sub> = 9V    V <sub>i</sub> = 0                                     |      |      | 2   | uA   |
| No-load Operating Current    | I <sub>CC</sub>   | V <sub>CC</sub> = 6V    V <sub>i</sub> = 3V<br>Open load                       | 2    | 4    | 7   | mA   |
| High Output Voltage          | V <sub>HOUT</sub> | V <sub>CC</sub> = 6V    I <sub>o</sub> = 3A                                    | 5.5  | 5.7  | 5.9 | V    |
| Low Output Voltage           | V <sub>LOUT</sub> | V <sub>CC</sub> = 6V    I <sub>o</sub> = 3A                                    | 0.05 | 0.12 | 0.3 | V    |
| High Input Voltage           | V <sub>iH</sub>   |                                                                                | 2.2  | 3.5  | 6   | V    |
| Low Input Voltage            | V <sub>iL</sub>   |                                                                                |      | 0.5  | 0.7 | V    |
| Input Current (2V)           | I <sub>i</sub>    | V <sub>CC</sub> = 6V    V <sub>i</sub> = 2V                                    |      | 70   | 100 | uA   |
| Input Current (3V)           | I <sub>i</sub>    | V <sub>CC</sub> = 6V    V <sub>i</sub> = 3V                                    |      | 100  | 150 | uA   |
| Continuous Output current    | I <sub>OUT</sub>  | Around of the no.5,6,7,8 pins<br>needs copper to auxiliary heat<br>dissipation |      | 5    | 7   | A    |
| Thermal shutdown temperature | T <sub>OTp</sub>  |                                                                                |      | 130  |     | °C   |

**Application circuit**

## Test PCB Board



# Package Type DIP8

