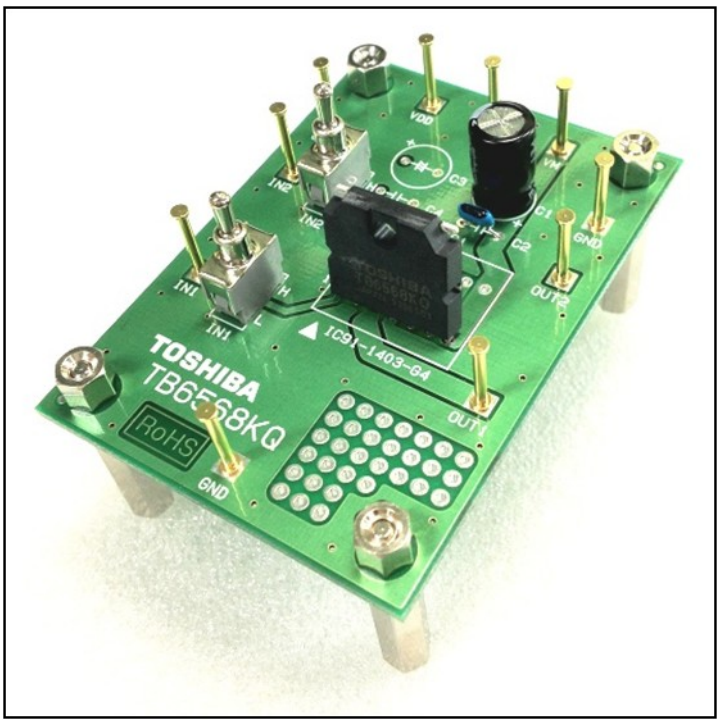
TB6568KQ Evaluation Board

Introduction

The TB6568KQ is a full-bridge driver IC for DC motor with low ON-resistance and allow for PWM control. The TB6568KQ evaluation board containing a TB6568KQ motor driver and two SPTT switches helps you to evaluate the TB6568KQ features. Giving power supply, the evaluation board can drive the motor immediately, and the two SPTT switches can be used to select the four operating modes of the IC.

Features

- TB6568KQ motor driver IC
- Power supply ranged from 10V to 45V
- Max 3A current output
- SPTT switch IN1 and IN2



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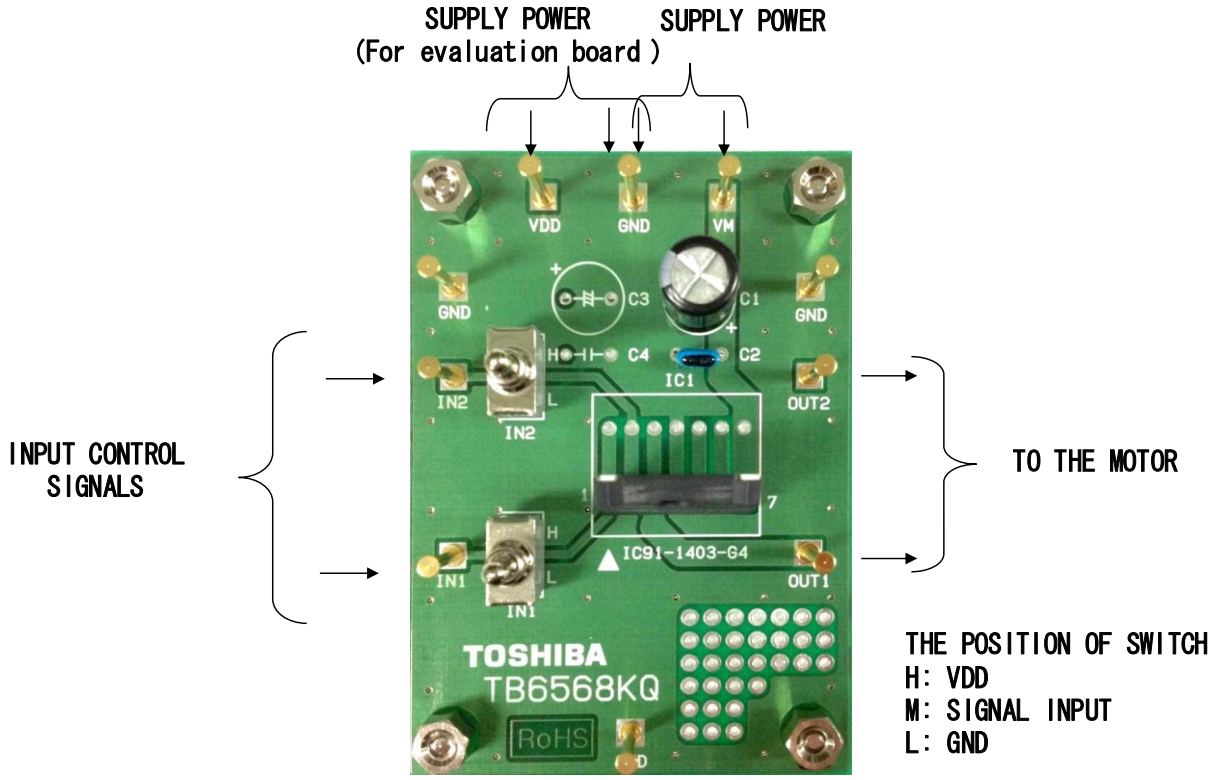


1.1 Power supply

1.1.1 VM

Please Supply the VM to TB6568KQ through VM pin.

TB6568KQ uses a single VM as its power supply. The operating supply voltage of VM must be within the range between 10 V and 45 V.

1.1.2 VDD

To set control inputs using the two on-board SPTT switch, VDD power supply is required. The operating supply voltage of VDD should be 5V and be supplied through VDD pin.

If control inputs are provided from outside of the evaluation board, VDD is not necessary.

1.1.3 Power On/Off Sequence

Having a single VM as its power supply and the under-voltage lockout circuit, the TB6568KQ has no special procedures for turning on and off itself. However, unstable power supplies result in abnormal IC operations. Therefore, it is recommended to run the motor after ensuring both the IN1 and IN2 are in 'Low' states, and subsequently turn the IC on with the stable VM. Then the motor rotational direction should be controlled by switching the inputs.

It is likewise recommended to turn off the TB6568KQ after the motor movement is completely stopped.

1.2 Control inputs

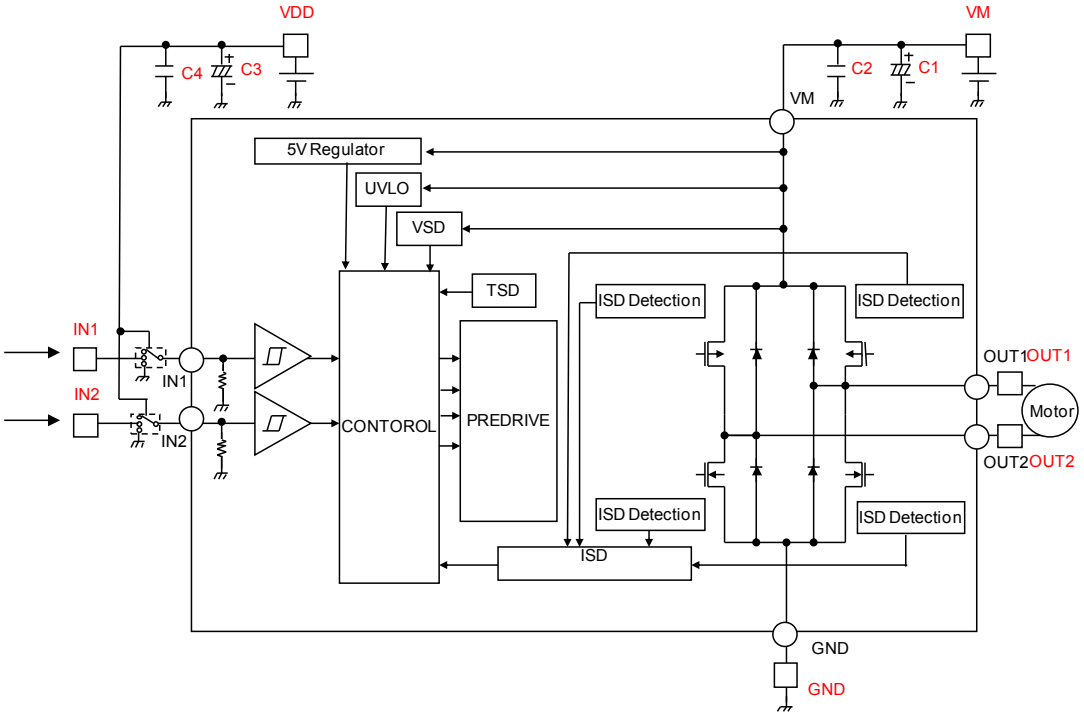
IN1 pin and IN2 pin on the evaluation board are connected with IN1 pin and IN2 pin of TB6568KQ. The input status of IN1 and IN2 control the output of TB6568KQ. The function table is shown as following

Input		Output		Mode
IN1	IN2	OUT1	OUT2	
H	H	L	L	Short Brake
L	H	L	H	CW/CCW
H	L	H	L	CCW/CW
L	L	OFF (Hi-Z)		Stop (caused by a release of TSD/ISD)

Switching input through either one of IN1 and IN2 pins allows for the PWM control of the motor rotation speed.

The corresponded SPTT switch should be set to middle position to pass through the input signal from IN1 pin or IN2 pin on evaluation board to IC's input pin. Putting SPTT to L position will connect the IC's input pin to GND and putting SPTT to H position will connect IC's input pin to VDD.

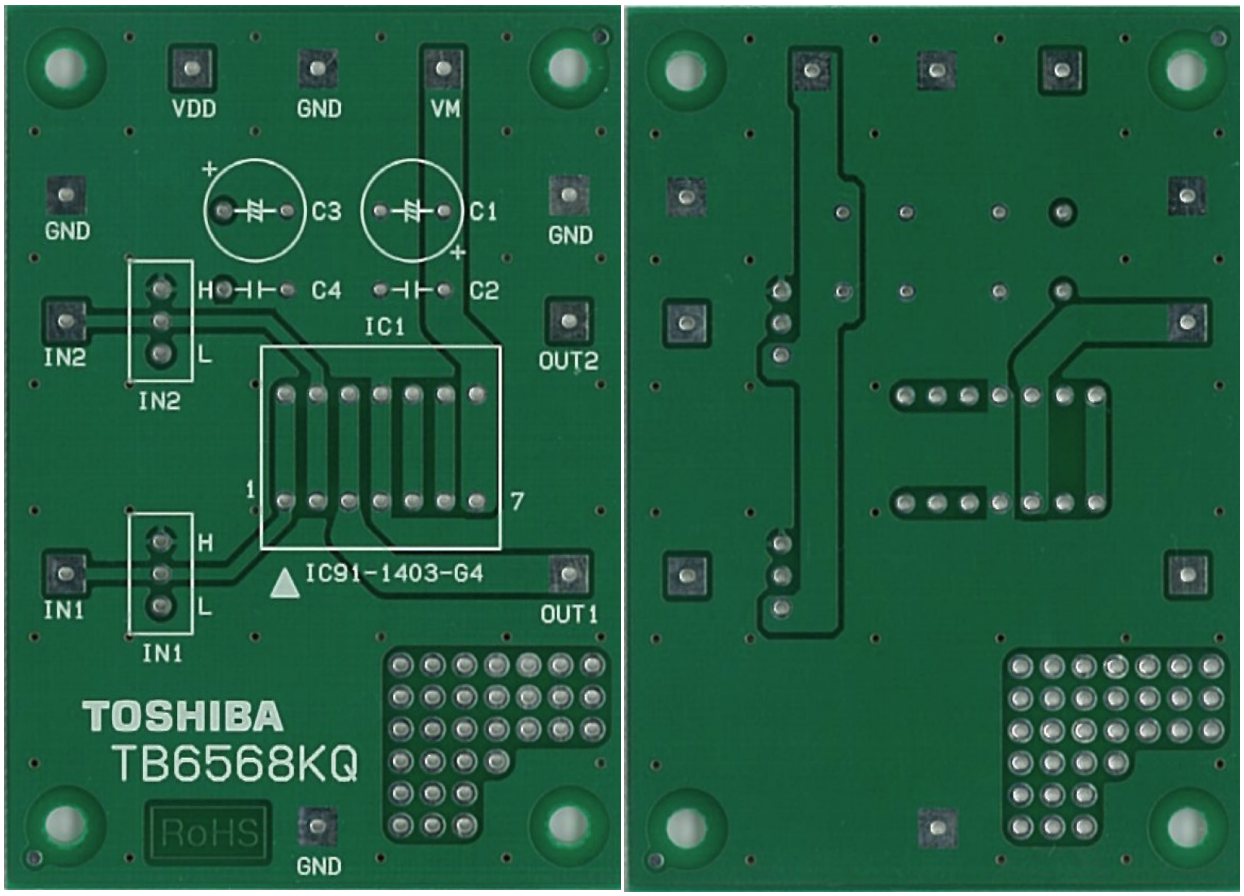
2 Electrical schematic



3 Hardware layout

Top side

Bottom side (horizontally flipped)



4 BOM

Symbol	Remarks	Recommended Value
IN1	SPTT	--
IN2	SPTT	--
C1	Electrolytic capacitor	10μF to 100μF
C2	Ceramic capacitor	0.001μF to 1μF
C3	Electrolytic capacitor	1μF to 10μF
C4	Ceramic capacitor	0.001μF to 0.1μF

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