

# LV8806QAGEVB

## LV8806QA Test Procedure for Quick Evaluation

### Overview

This Evaluation board is designed to provide an easy and quick development platform for LV8806QA which is 3-phase BLDC motor driver for 5 V class.

### Quick Evaluation

The evaluation board is programmed to work standalone without PC. The following operation allows the operation of most motors.

- Step 1. Connect a motor to the motor connector.
- Step 2. Connect PWM signal to the pin labeled 'PWM'.
- Step 3. Connect a power supply to the pin labeled 'VCC'.
- Step 4. Connect F/R pin to GND.
- Step 5. Turn on power supply and input 5 V to 'VCC'.
- Step 6. Turn on power supply and input 5 V to 'VDD'.
- Step 7. Input PWM signal.



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## EVAL BOARD USER'S MANUAL

### Test Procedure (for quick evaluation)

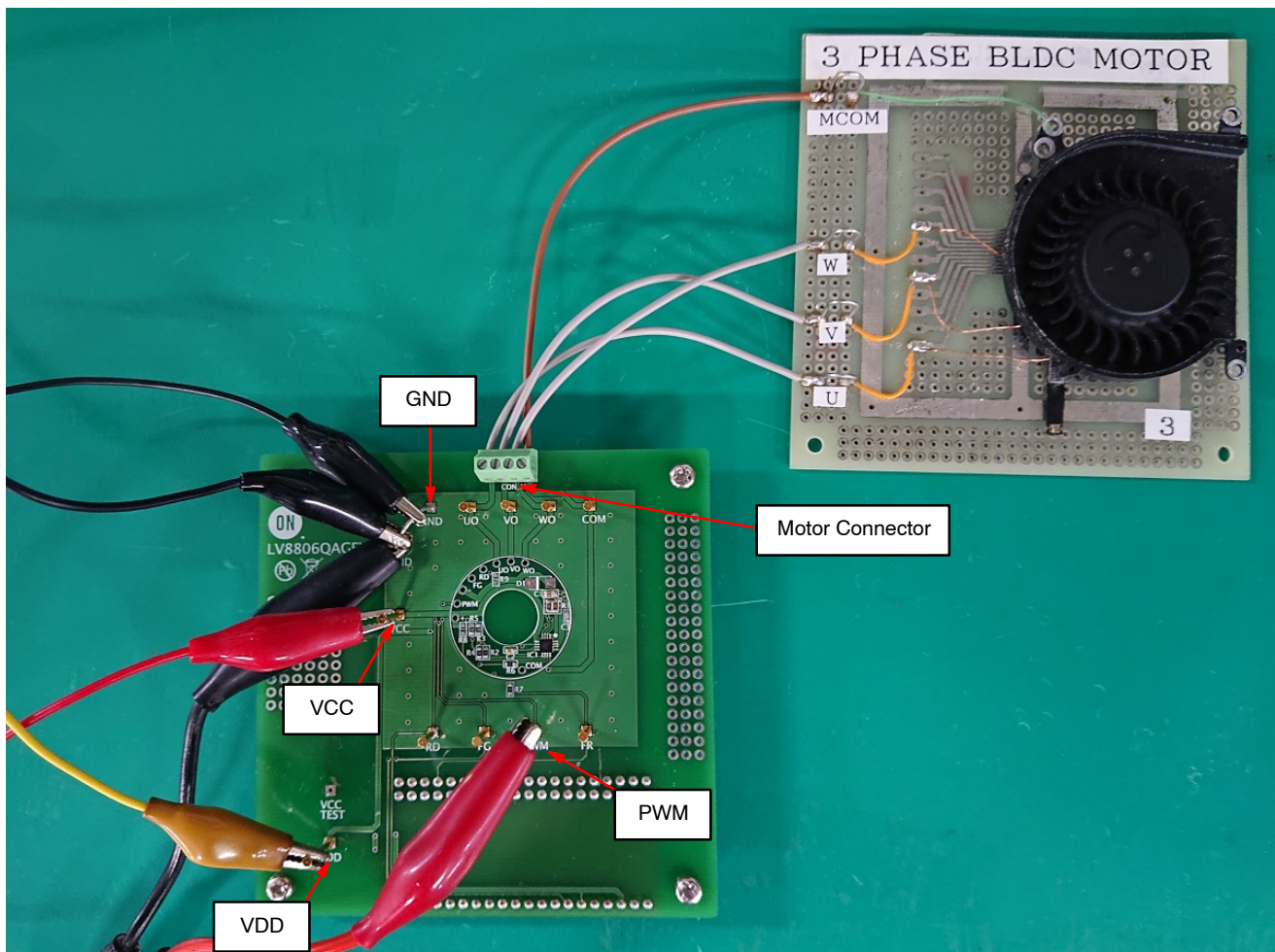


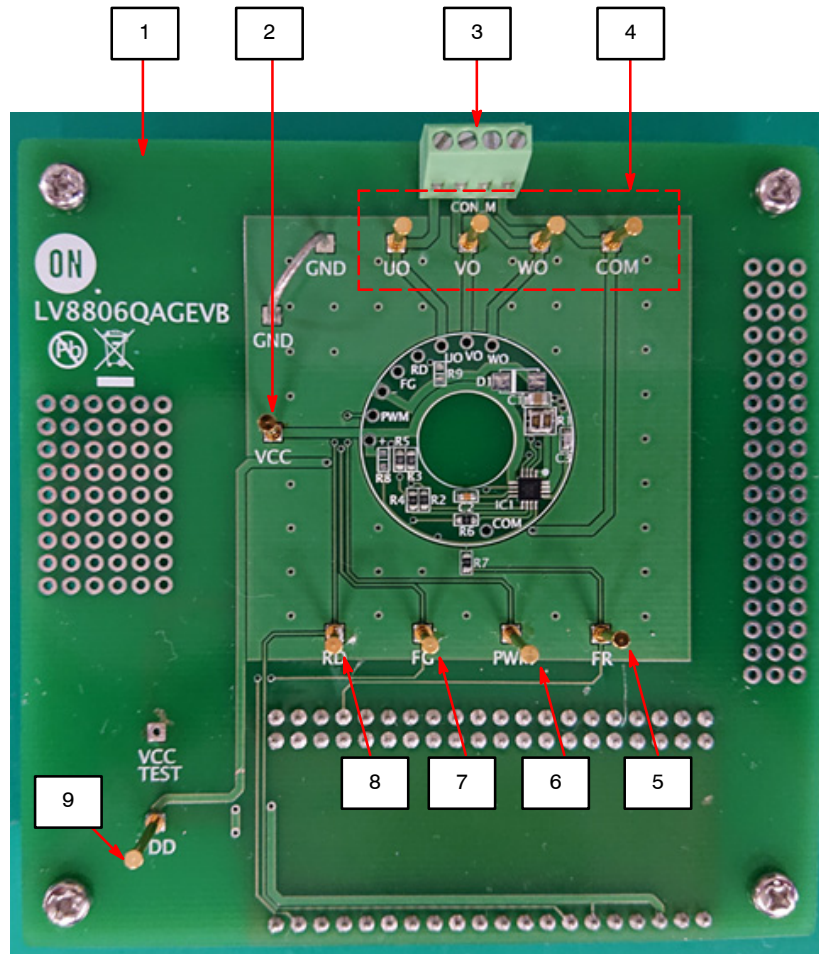
Figure 1. Example of Setting for Quick Evaluation

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## HARDWARE DESCRIPTION

**Table 1. PINS AND CONNECTORS IN LV8806QA EVALUATION BOARD**

No.	Name	Description
1	Evaluation board	The evaluation board which works standalone (without the mother board)
2	Pin VCC	To input power supply voltage.
3	Connector	To connect to each motor coil edge (phase).
4	Pin UO/VO/WO/COM	To monitor each phase output of motor coil
5	Pin FR	To connect to GND or VCC to select motor rotation direction. GND: Forward rotation VCC: Revers rotation
6	Pin PWM	To input PWM (rotation speed control) signal. The signal level is: Frequency = 20 kHz, High level = 5 V, Low level = 0 V
7	Pin FG	To monitor FG (motor rotation pulse) signal output.
8	Pin RD	To monitor RD (motor rotation / stop) signal output.
9	Pin VDD	To bias pull-up resistors for FG / RD output.



**Figure 2. Top view of LV8806QA Evaluation Board**

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## APPLICATION DIAGRAM

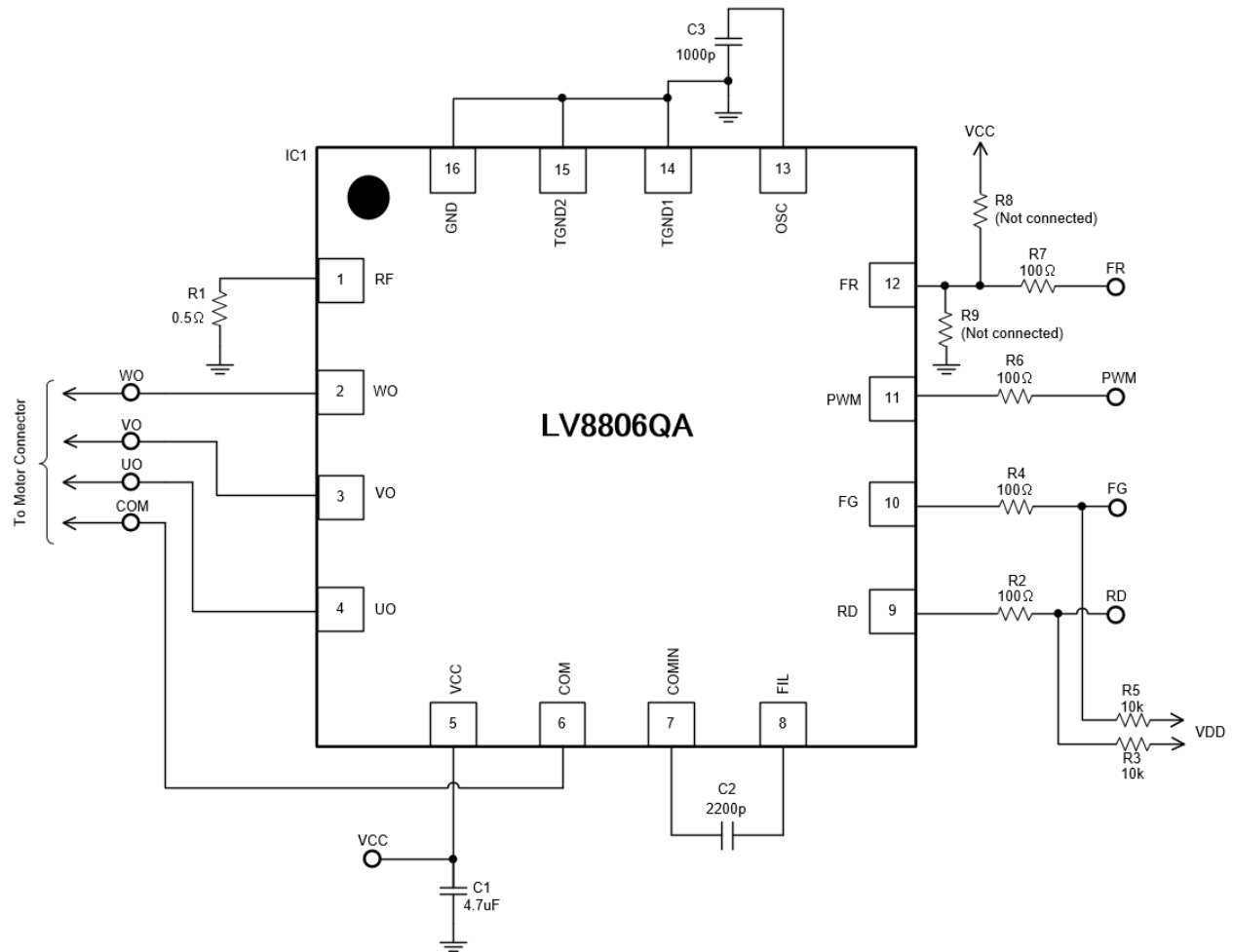


Figure 3. LV8806QA Evaluation Board Schematic

Table 2. COMPONENT LIST OF LV8806QA EVALUATION BOARD

No.	Description	Value
IC1	LV8806QA	(1 device)
C1	VCC bypass capacitor	4.7 $\mu$ F
C2	Filter for output (U/V/W) signal	2,200 pF
C3	Capacitor for oscillation	1,000 pF
R1	Current sense resistor	0.5 $\Omega$ (1 $\Omega$ //2)
R2	Protection against external pin	100 $\Omega$
R3	Pull-up resistor	10k $\Omega$
R4	Protection against external pin	100 $\Omega$
R5	Pull-up resistor	10k $\Omega$
R6	Protection against external pin	100 $\Omega$
R7	Protection against external pin	100 $\Omega$
R8	Pull-up resistor	Not used
R9	Pull-down resistor	Not used

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## WAVEFORMS

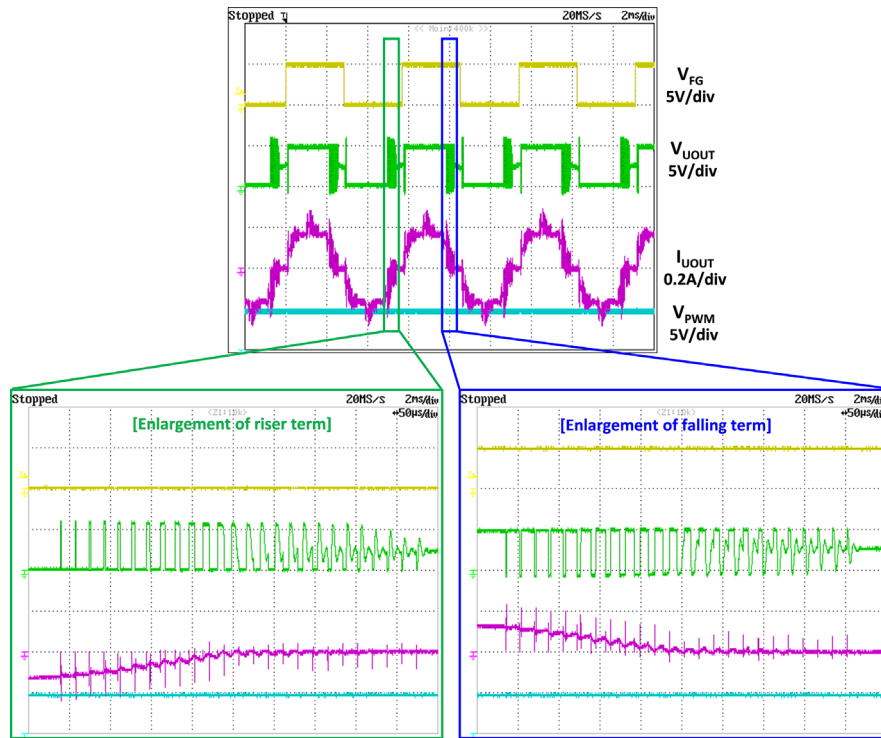


Figure 4. The Image of Waveforms of Example 1  
(PWMIN Duty-cycle = 100%, VDD = 5 V)

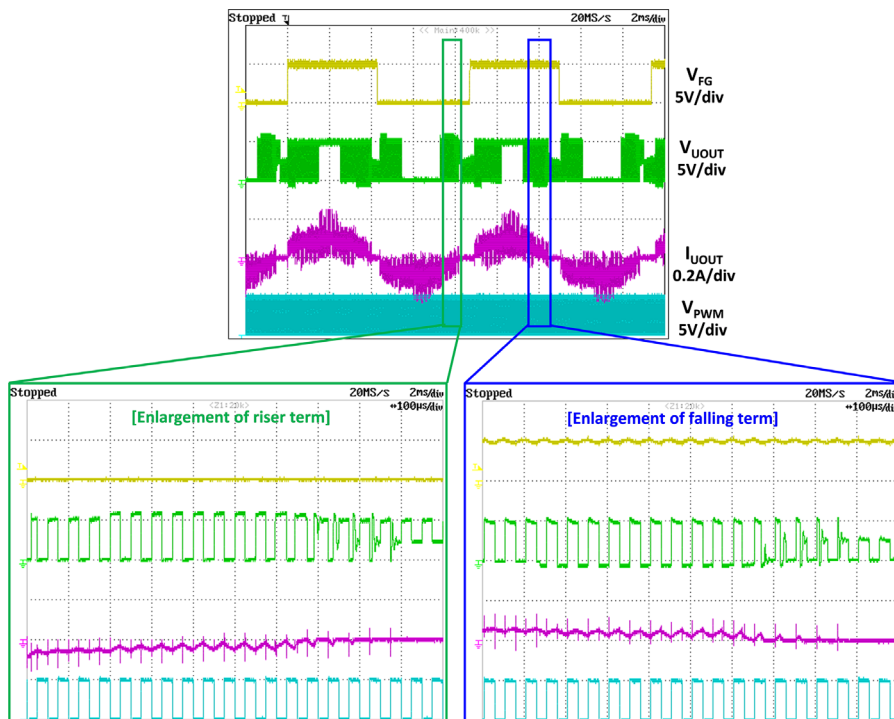


Figure 5. The Image of Waveforms of Example 2  
(PWMIN Duty-cycle = 50%, VDD = 5 V)

## LV8806QAGEVB

### Detail Description of LV8806QA Operation

Please refer to LV8806QA Application Note:

<https://www.onsemi.jp/pub/Collateral/ANDLV8806QA-D.PDF>

### Cautions

- This is intended for an initial evaluation of LV8806QA. It will not be guaranteed measurement values as full evaluation and validation must be performed on your system independently.
- Never hold the motor with the lead wire or shaft. The motor should be affixed to a stand prior to operation.
- Attach all motor leads prior to application of power.

### Safety

- Do not touch the rotating part when the motor is powered. Doing so may result in injury.
- Do not touch conductive parts such as connectors when the motor is powered. Doing so may result in electric shocks.

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