

## 3-Phase Sensorless Fan Motor Driver

### DESCRIPTION

EUM6812A is a 3-phase sensorless fan motor driver. It is controlled by a variable speed provided through the PWM input signal. Its feature is sensorless drive which doesn't require a hall device as a location detection sensor. Furthermore, it does not need external BEMF filter capacitor and motor downsizing can be achieved by limiting the number of external components as much as possible.

EUM6812A integrates PWM speed control, soft switching, lock protection, auto restart, fan tachometer, current limit, under voltage lock out circuit and forward/reverse functions.

As the application of three-phase driving method, PWM mode controls fan speed by adjusting duty cycle of PWM signal.

Internal soft switching function drives fan motor in low noise and low vibration ways. EUM6812A can drive motor from stop mode to rotation mode by adjusting the external capacitor between OSC pin and GND pin. If a motor is stalled by external force or obstacles, over drive current may incur coil overheat and burning. In order to prevent motor from overheating, the lock protection circuit shuts down the internal power devices for a few seconds after the motor lock is detected. Then the auto restart circuit resumes to power up the internal power devices. If the lock is still continuing, EUM6812A shuts down power devices for another few seconds. The lock protection time is built-in and does not need external components. During rotation, FG outputs motor speed feedback signal. The motor rotation direction can be changed by setting FR to high or low.

### FEATURES

- 3-Phase Sensorless Drive (No Hall Sensor Needed)
- Input Voltage Range: 1.8V~6.0V
- Total Driver H+L  $R_{ON}$  less than 950m $\Omega$
- No Need BEMF External Filter Cap
- UVLO Protection
- PWM Speed Control and Soft Switching
- Few External Components
- 20 $\mu$ A Low Standby Current
- Built in TSD
- Available in UDFN-10 Package
- RoHS Compliant and 100% Lead (Pb)-Free Halogen-Free

### APPLICATIONS

- NB Fan, Low Noise Fan and Low Power Consumption Fan

### Application Circuit

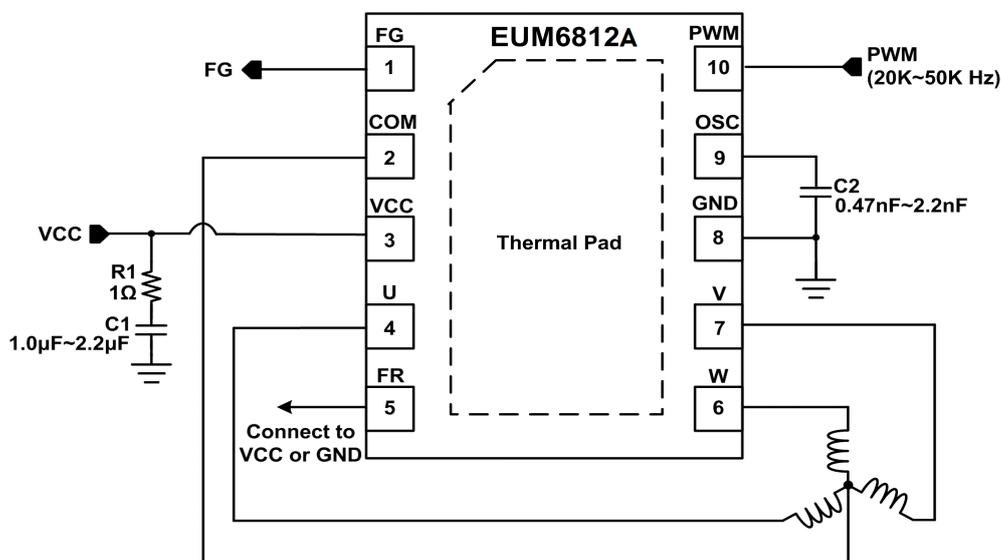


Figure 1.