## Introduction

The ISL97634 is a white LED driver with high frequency PWM dimming capability.

Jumpers JP1 to JP5 can be optionally used to disable five of the seven LEDs. The ISL97634 is guaranteed to drive six LEDs (3.5V/30mA type). It is possible to drive seven LEDs at 20mA if the total VF is lower than the OVP threshold and the input voltage is at nominal rather than low level.

Jumper S3 is used to connect the FBSW that must be connected with the center and upper pins.

Jumper S4 is used to select the RSet as either a 4.75$\Omega$ resistor R1 or a 100$\Omega$ potentiometer, R2. If R1 is used, connect S4 with the center and the left most pins. This resistance sets the LED supply current.

$$ILED = 95mV/Rset*PWM \qquad \text{(EQ. 1)}$$

where PWM is the PWM duty cycle.

## Steps for Setting up the Demo Board:

1. Apply a DC power voltage source 2.7V to 5.5V in $V_{IN}$. Due to the boost function, the input DC voltage must be lower than the output voltage in order to regulate the output LED current.
2. Use R1 or R2 to set the desirable LED peak current.
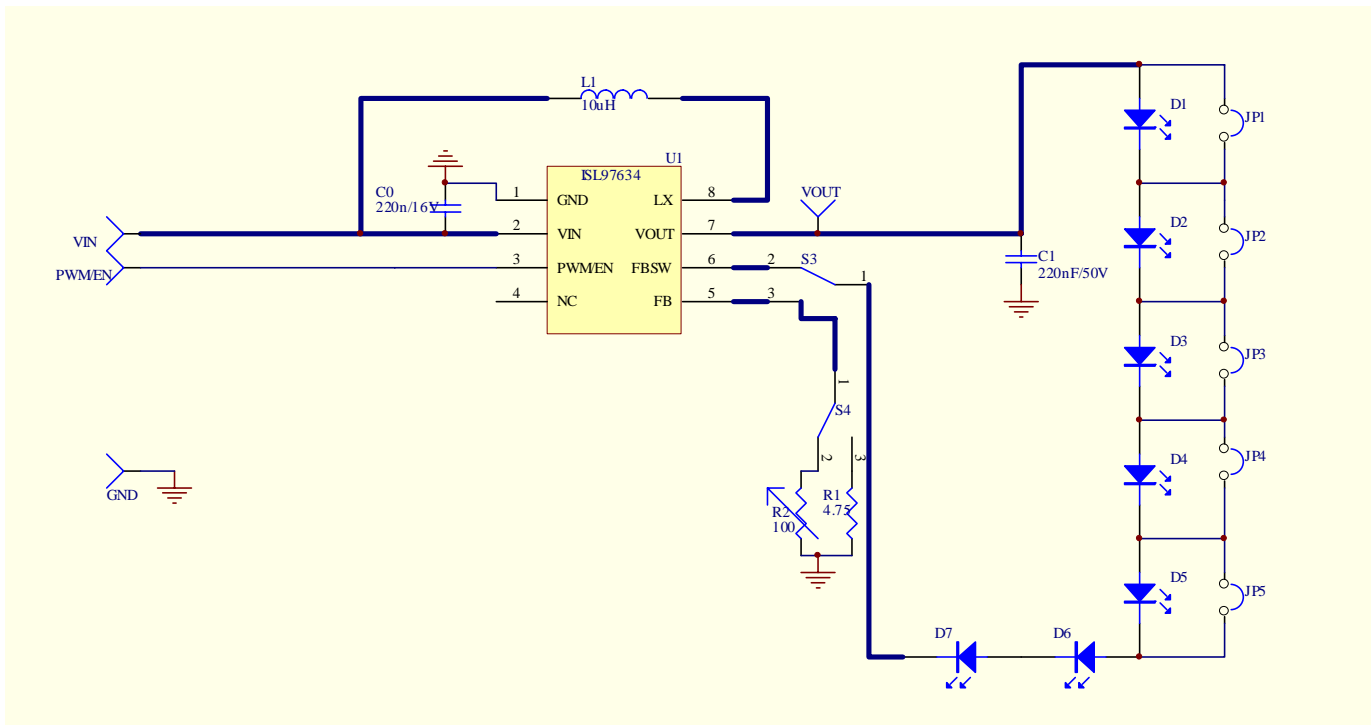3. Apply a PWM signal at PWM/EN to achieve the desirable current and LED brightness.



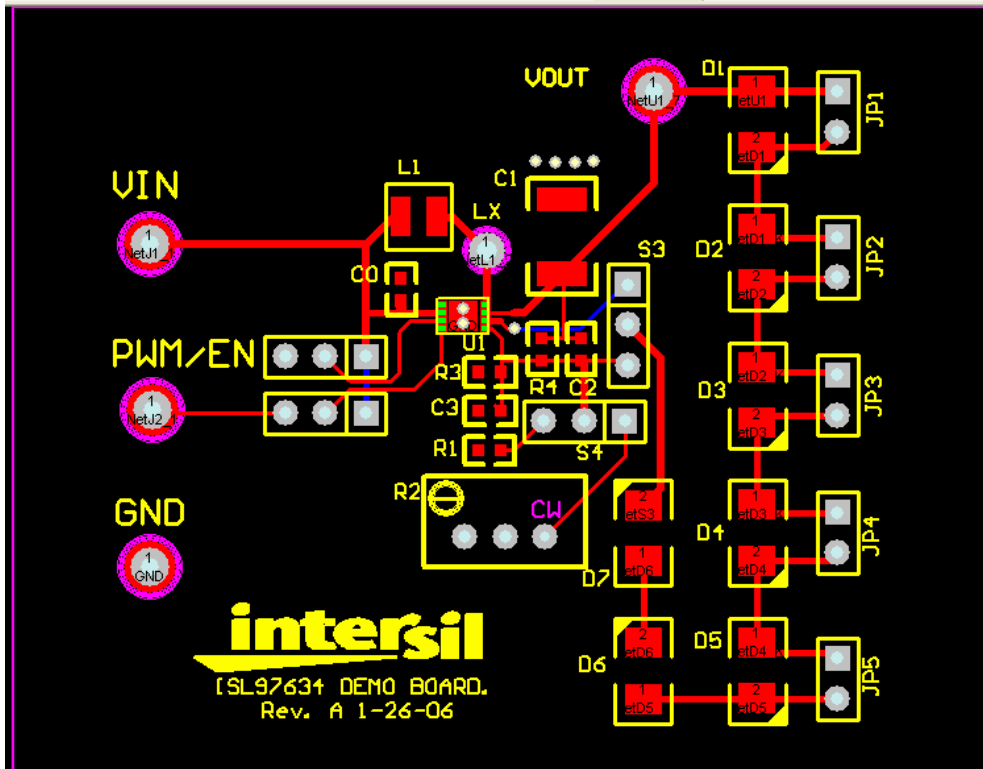**FIGURE 1. SCHEMATIC OF ISL97634 DEMO BOARD**

**FIGURE 2. SCHEMATIC OF ISL97634 DEMO BOARD**

TABLE 1. ISL97634 DEMO BOARD BOM

| ITEM | QTY | REF | DESCRIPTION | VENDOR | PART NO. | PACKAGE |
|------|-----|-----|-------------|--------|----------|---------|
| 1 | 1 | C2 | 1nF/50V | | | 0603 |
| 2 | 1 | R1 | 4.75 | | | 0603 |
| 3 | 1 | L1 | 22µH | Coilcraft | 1008PS-223KL | 3.81mmx3.81mm |
| | | | 10µH | Coilcraft | 1008PS-103KL | 3.81mmx3.81mm |
| 4 | 1 | R3 | 20k | | | 0603 |
| 5 | 1 | C3 | 33nF/50V | | | 0603 |
| 6 | 1 | R2 | 100 | | | 0603 |
| 7 | 1 | C0 | 220n/16V | | | 0603 |
| 8 | 1 | C1 | 4.7µF/50V | Murata | GRM32ER71H475KA88 | 1210 |
| 9 | 1 | R4 | 698k | | | 0603 |
| 10 | 1 | J3 | GND | | | POWERPOST |
| 11 | 1 | U1 | LED Driver | Intersil | ISL97634 | TDFN2X3 |
| 12 | 1 | JP3 | JUMPER | | | JUMPER-2PIN |
| 13 | 1 | JP4 | JUMPER | | | JUMPER-2PIN |
| 14 | 1 | JP5 | JUMPER | | | JUMPER-2PIN |
| 15 | 1 | JP2 | JUMPER | | | JUMPER-2PIN |
| 16 | 1 | JP1 | JUMPER | | | JUMPER-2PIN |
| 17 | 1 | J2 | SDIN | | | POWERPOST |
| 18 | 1 | J1 | VIN | | | POWERPOST |
| 19 | 1 | J4 | VOUT | | | POWERPOST |
| 20 | 7 | D1 to D7 | LED | OSRAM | LW Y3SG | 0.6mm MircoSIDLED |

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