AN-1491 LM3880 Power Sequencer Demo Board

1 Introduction

The LM3880 evaluation board has been designed to permit the designer to connect it directly to the power supplies of an existing system to enable sequencing. Upon enabling the device the three open drain output flags will rise in sequential order, 1-2-3. Once the part is disabled, the shutdown sequence will occur in reverse order 3-2-1. Therefore the last power supply that started up, will be the first to shutdown. The evaluation board contains the LM3880MF-1-AB device which has been factory set, so that each time delay between flags will be 30ms. Several different timing options are available as standard off the shelf parts, but if a custom timing or shutdown sequence is needed please contact Texas Instruments. The LM3880 has an internal EPROM that can be factory programmed to allow almost any sequencing combination to occur. For programming possibilities, see *LM3880/LM3880Q Power Sequencer* (SNVS451).

2 Timing Sequence

The LM3880 demo board timing sequence of the output flags is shown in Figure 1.

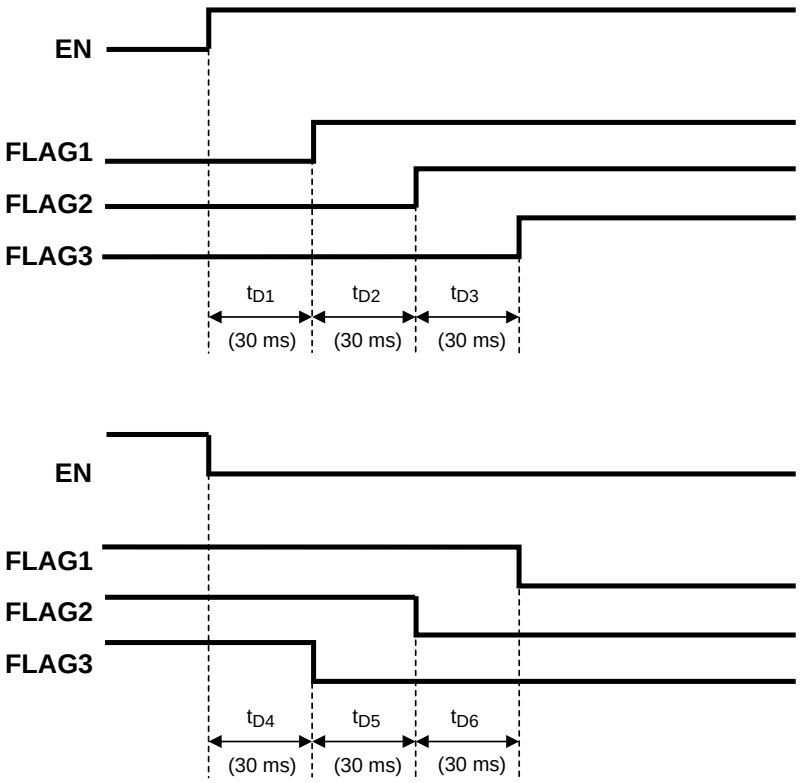

Figure 1. Timing Sequence

3 Schematic

The LM3880 demo board has been designed with the pullup resistors on board to permit connection to an enable pin of a switcher. The demo board can accommodate an input voltage from +2.7V to +5.5V.

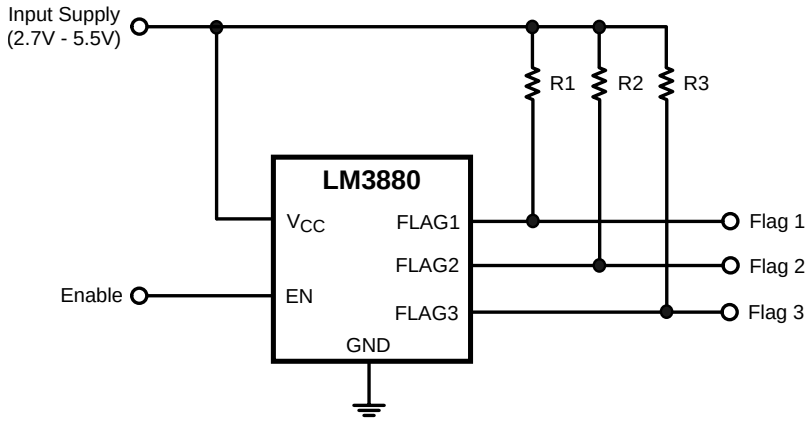

Figure 2. Schematic

4 Bill of Materials

Designator	Description	Part #	Quantity	Manufacturer
U1	LM3880, Sequence 1, 30ms timing	LM3880	1	Texas Instruments
R1	100K Resistor, 0603	CRCW0603100KFKEA	1	Vishay
R2	100K Resistor, 0603	CRCW0603100KFKEA	1	Vishay
R3	100K Resistor, 0603	CRCW0603100KFKEA	1	Vishay

5 Pin-Out

The pin-out and pin description of the LM3880 is shown in Figure 3 and in Table 1.

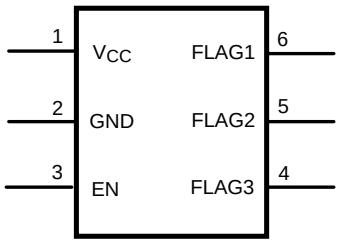

Figure 3. Pin-Out

Table 1. Pin Descriptions

Pin #	Name	Function
1	VCC	Input supply
2	GND	Ground
3	EN	Precision enable pin
4	FLAG3	Open drain output #3
5	FLAG2	Open drain output #2
6	FLAG1	Open drain output #1

6 Layout

The demo board layout is based on a small 0.8” × 1.0” FR4 demo board with 2 layers of copper. The actual layout can be seen below. When looking at the board, pin 1 on the LM3880 is the top left.

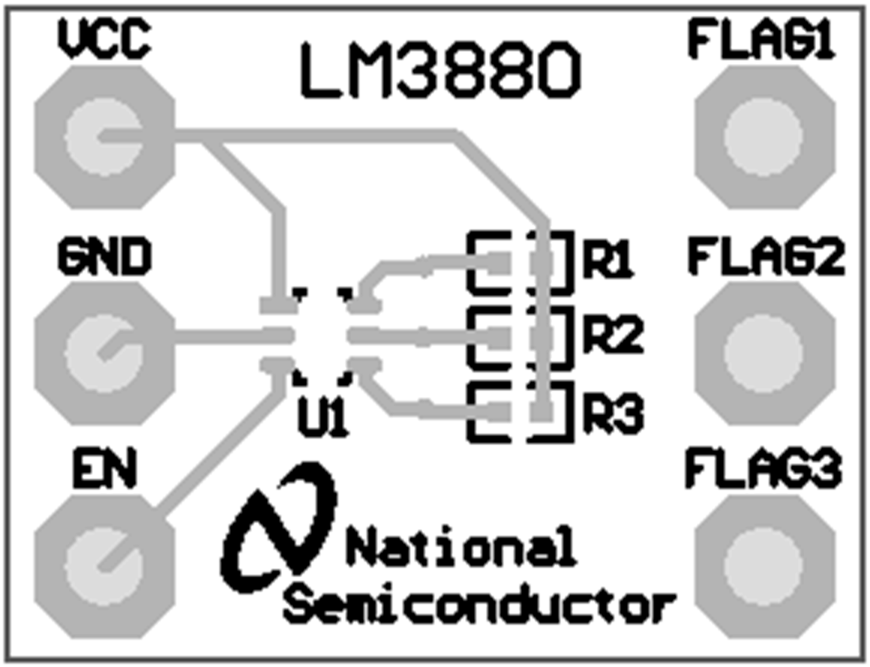

Figure 4. LM3880 Top Layer

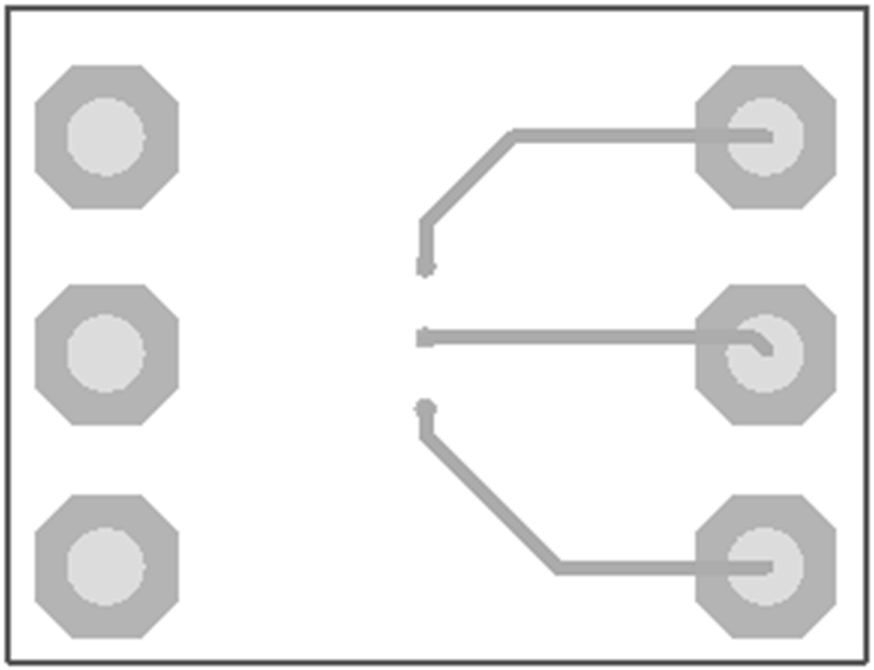

Figure 5. LM3880 Bottom Layer

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