

EL7534EVAL1

Evaluation Board

TB442  
Rev.0.00  
Feb 17, 2005

**Using the Evaluation Board**

EL7534 is a high efficiency 600mA synchronous step-down PWM regulator in a tiny MSOP10 package. The internal compensation makes it possible for the full-featured 600mA converter to occupy less than 0.18in<sup>2</sup> of PCB area with all components on one side.

**1. Output Adjustment**

Use R<sub>1</sub> and R<sub>2</sub> to adjust output voltage according to the following formula:

$$V_O = 0.8 \times \left( 1 + \frac{R_2}{R_1} \right)$$

The evaluation board is set to V<sub>O</sub> = 1.8V.

**2. Chip Enable**

When EN pin is pulled to Ground, the regulator is disabled. It consumes less than 1μA of current. R<sub>5</sub> can be connected to V<sub>IN</sub> directly if this function is not needed, reducing the component counts.

**3. RSI/POR Function**

When powering up, the open-collector Power-On-Reset output holds low for 100ms after V<sub>O</sub> reaches the preset voltage. When a reset signal RSI is issued, POR goes to low for the same period of time while the output power is still on (Please refer to the datasheet for the timing diagram). When the function is not used, connect RSI to ground and leave R<sub>4</sub> open, further reduce the total components counts and the overall PCB area to less than 0.18in<sup>2</sup>.

The POR output also serves as a 100ms delayed Power Good signal when the pull-up resistor R<sub>4</sub> is installed. The RSI pin needs to be directly (or indirectly through R<sub>6</sub>) connected to Ground for this to function properly.

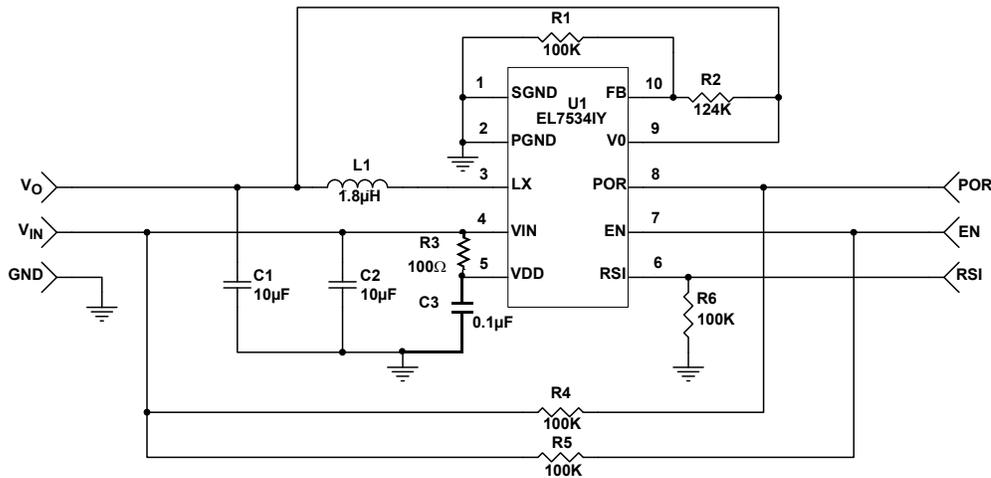


FIGURE 1. DEMO BOARD SCHEMATIC

**Evaluation Board Bill of Materials**

| REFERENCE DESIGNATOR  | VALUE          | PACKAGE   | MANUFACTURER | MANUFACTURER'S PART NUMBER | MANUFACTURER'S PHONE NUMBER |
|---|----------------|-----------|--------------|----------------------------|-----------------------------|
| C <sub>1</sub> , C <sub>2</sub>                                   | 10μF/MLCC, X7R | 1206      | TDK          | C3216X7R1A106K             | 847-803-6100                |
| C <sub>3</sub>  | 0.1μF          | 0603/0402 | Any          |                            |                             |
| L <sub>1</sub>  | 1.8μH          |           | Coilcraft    | 1008PS-182M                | 847-639-6400                |
| R <sub>2</sub>  | 124K, 1%       | 0603/0402 | Any          |                            |                             |
| R <sub>1</sub> , R <sub>4</sub> , R <sub>5</sub> , R <sub>6</sub> | 100K, 1%       | 0603/0402 | Any          |                            |                             |
| R <sub>3</sub>  | 100Ω, 1%       | 0603/0402 | Any          |                            |                             |
| U <sub>1</sub>  | EL7534IY       | MSOP10    | Intersil     | EL7534IY                   | 888-ELANTEC                 |

**Demo Board Layout (Actual Size - 3" x 2")**

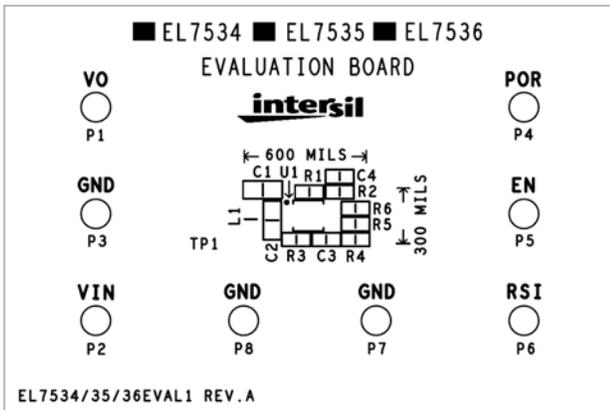


FIGURE 2. SILKSCREEN

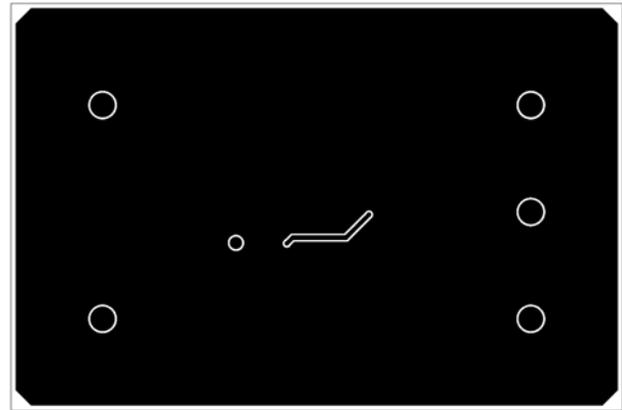


FIGURE 4. BOTTOM LAYER

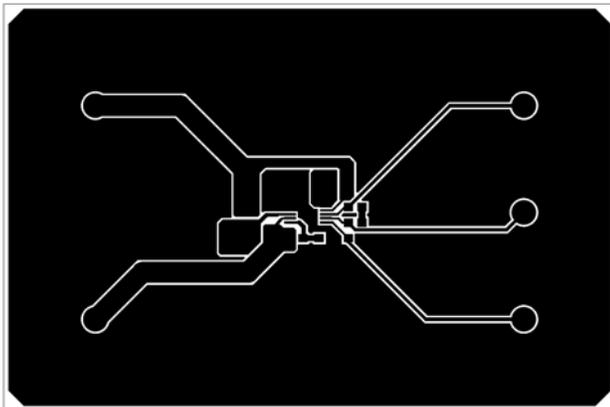


FIGURE 3. TOP LAYER

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Unit 1601-1611, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong  
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**Renesas Electronics Taiwan Co., Ltd.**  
13F, No. 363, Fu Shing North Road, Taipei 10543, Taiwan  
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Tel: +65-6213-0200, Fax: +65-6213-0300

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Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

**Renesas Electronics India Pvt. Ltd.**  
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**Renesas Electronics Korea Co., Ltd.**  
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