



LITIX™ Power

TLD5190-1QV System Demoboard V1

LITIX_V1
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ATV BP LI

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Board description

- › Credit card sized LED driver in high efficient H-Bridge topology
- › 1A LED driver in current control mode
- › Supply voltage range: 8V – 40V
- › Short circuit detection treshold: 21.6V
- › Output overvoltage protection threshold: 55V

Jumper Settings

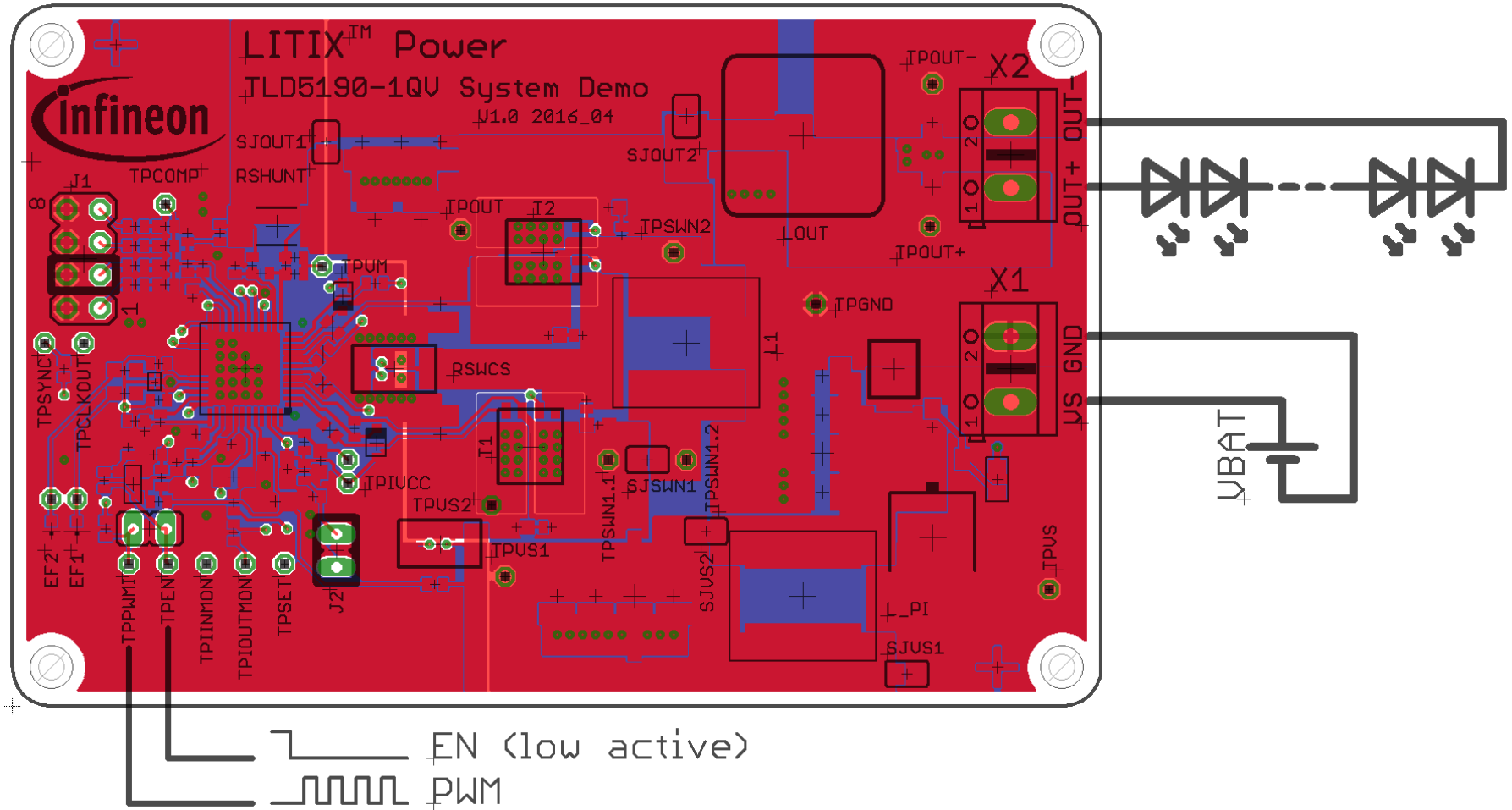
- › Jumper J1: Compensation network
 - 1-2 closed: $C_{comp} = 6.8\text{nF}$
 - 3-4 closed: $C_{comp} = 10\text{nF}$ (default setting)
 - 5-6 closed: $C_{comp} = 22\text{nF}$
 - 7-8 closed: $C_{comp} = \text{not mounted}$

- › Jumper J2: Set Pin configuration
 - Closed: Set pin connected to fixed voltage
 - Open: Output current can be set externally over TPSET

Quick Start

- › Connect battery to VS and GND (8V – 40V)
- › Connect LED load (e.g. 10 white LEDs) to OUT+ and OUT-
 - LED forward voltage has to be within short circuit and output overvoltage protection values.
- › Select compensation network (default 10nF J1 position 3-4 closed)
- › Close JP2
- › Connect TPEN (low active) and TPPWMI to digital supply (e.g. 5V)
- › Switch ON supply

Quick Start cont'd



LED current dimming

The LED current can be dimmed analog or digital:

- › Analog: Open JP2 and force external reference voltage to TPSET (optional: Close JP2 + change of resistor RSET1 and RSET2)
- › Digital: Apply a PWM signal (e.g. 200Hz 25%DC) to TPPWMI

Please refer to TLD5190-1QV DS for detailed information

Short circuit and overvoltage protection

Short circuit and overvoltage protection thresholds are set to

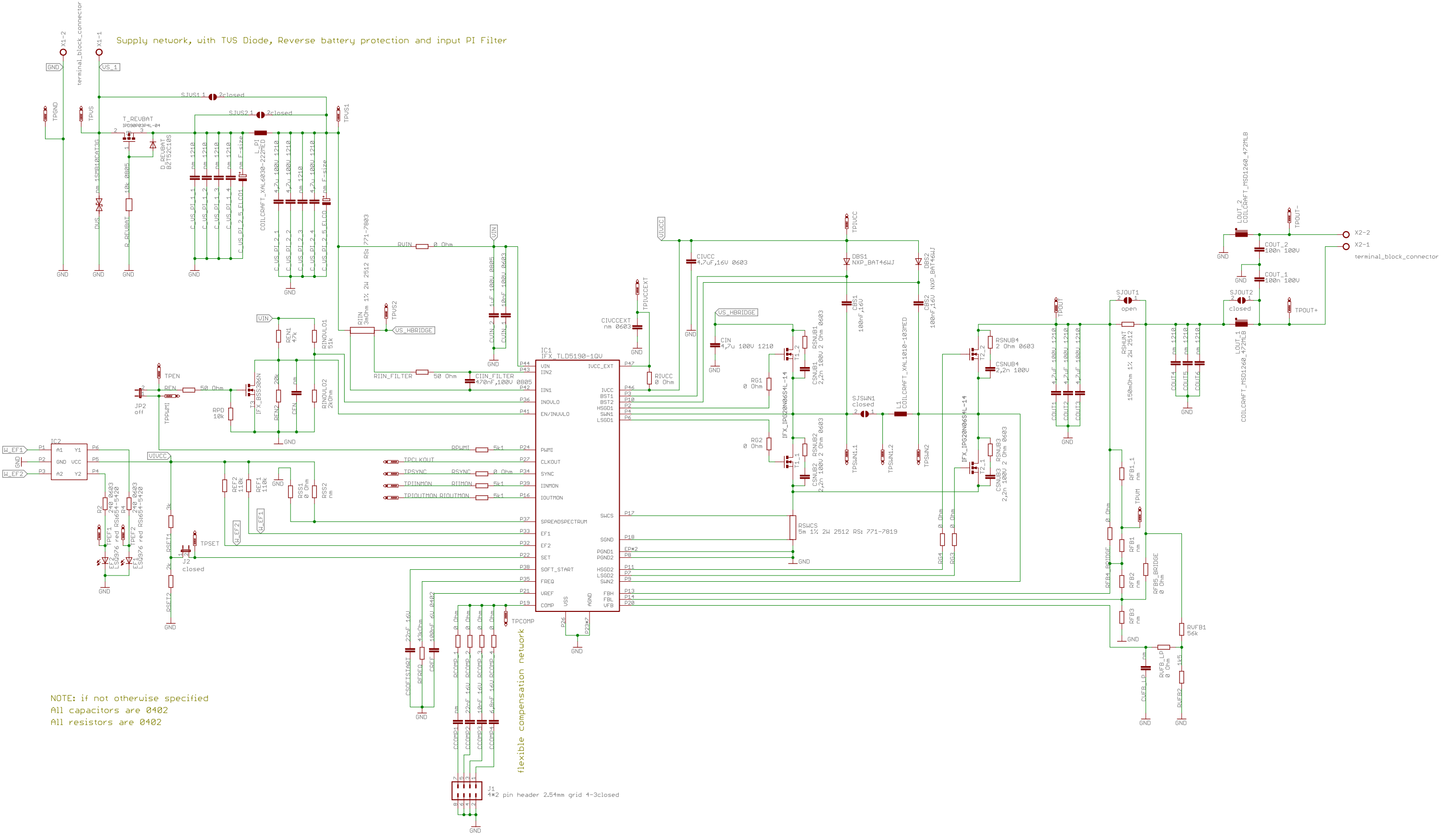
$$\text{> } V_{OUT_OV_protected} = V_{FB,OVTH} \frac{R_{VFB1} + R_{VFB2}}{R_{VFB2}} = 55V$$

$$\text{> } V_{OUT_SC_protected} = V_{FB,SCTH} \frac{R_{VFB1} + R_{VFB2}}{R_{VFB2}} = 21.6V$$

using the external circuitry of the IC. The thresholds can be changed by adapting resistor R_{VFB1} and R_{VFB2} . Please refer to the datasheet for detailed information of the component selection

Schematic and board layout

- › The schematic and layout designs are shown on the following two pages.
- › The visible content (copper layers, names,...) can be activated or deactivated using the PDF reader layer settings.



Supply network, with TUS Diode, Reverse battery protection and input PI Filter

flexible compensation network

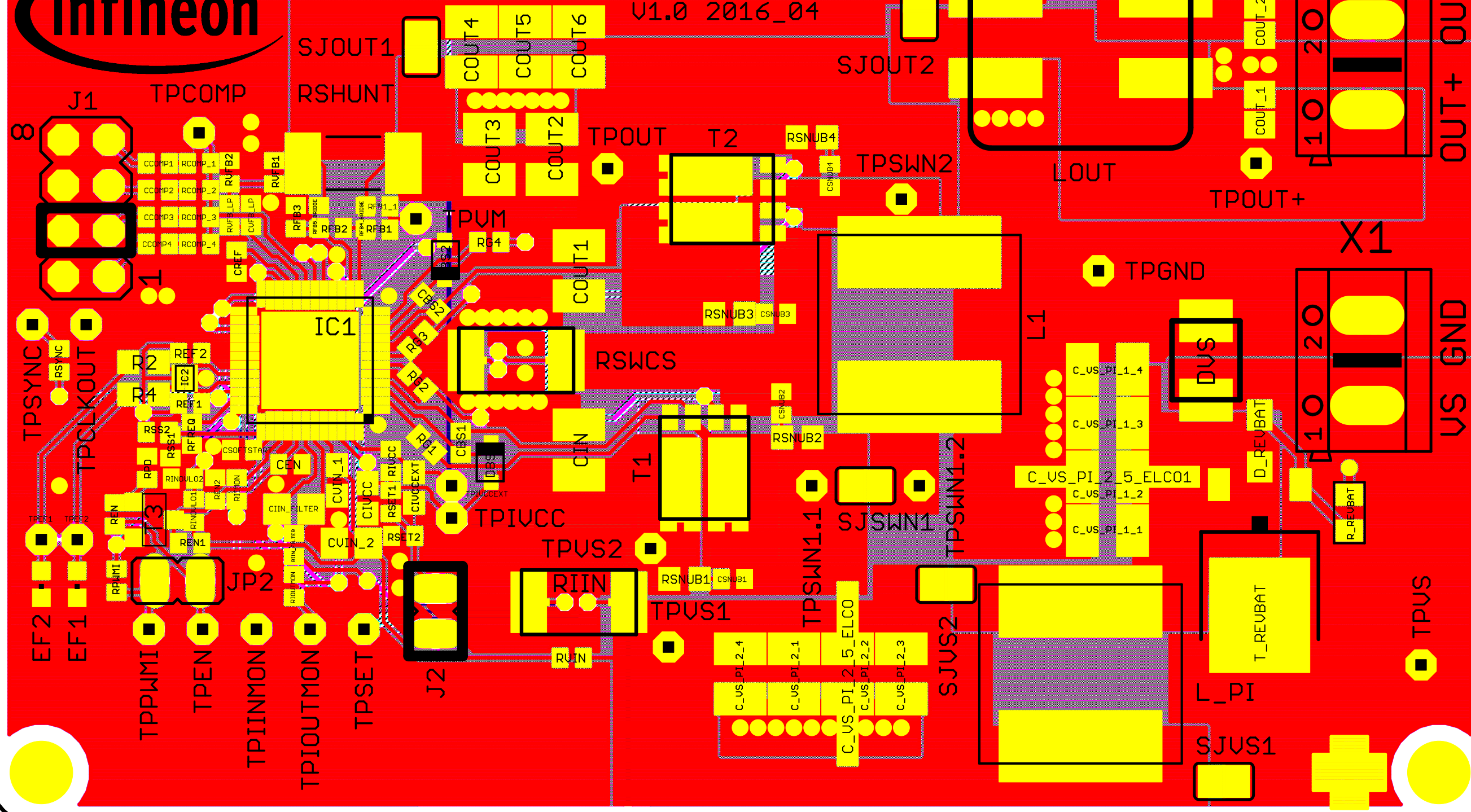
NOTE: if not otherwise specified
 All capacitors are 0402
 All resistors are 0402



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V1.0 2016_04



Thank you very much for your attention

For more information, please visit:

<http://www.infineon.com/LITIX>

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