TLF50281EL

2.2 MHz Step-Down Regulator 500 mA
low quiescent current

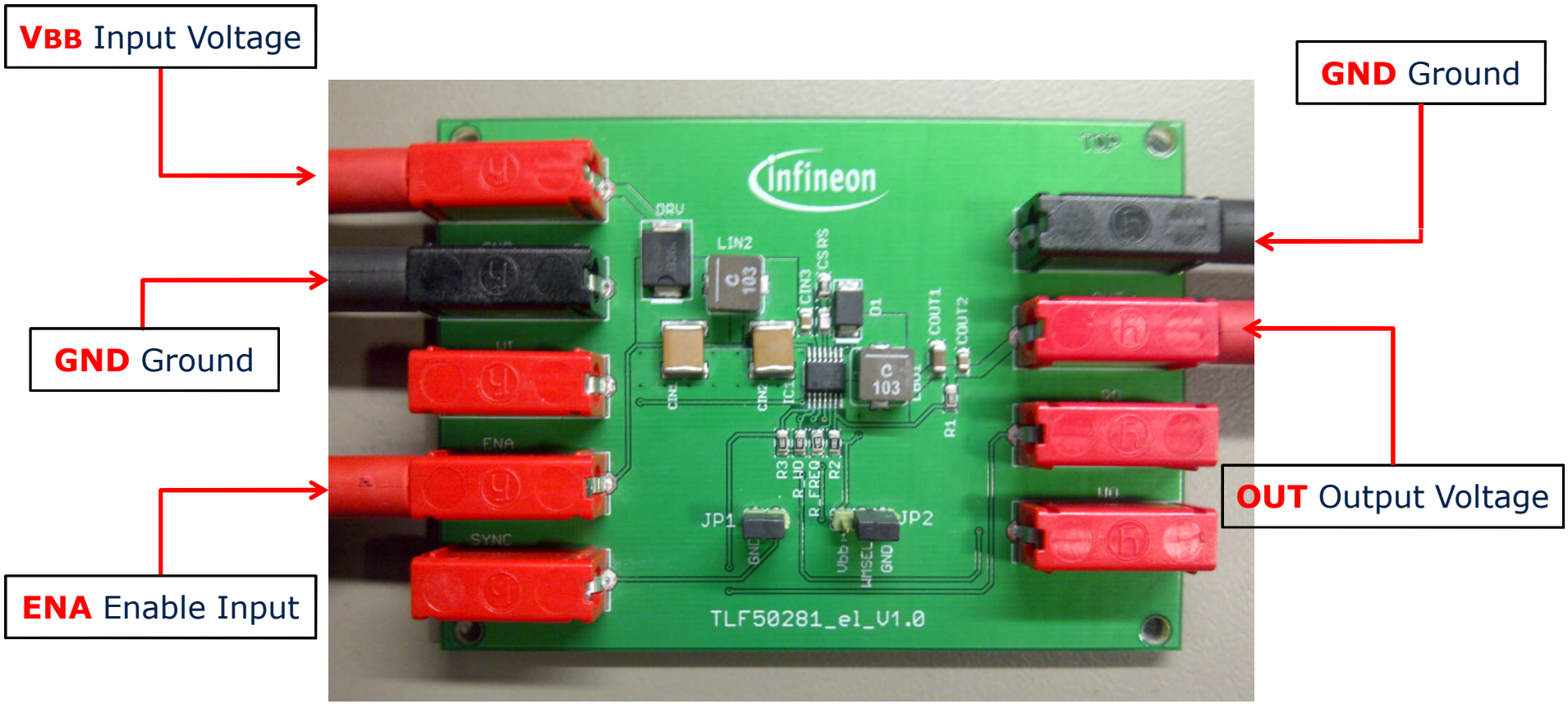
Application Board

TLF50281EL Application Board Introduction

- This application board shall enable testing of the TLF50281EL
- 2.2 MHz Step-Down Regulator 500 mA, low quiescent current
- Fixed output voltage (5 V)
- The board offers the possibility to modify the circuit
- (please refer to datasheet for TLF50281EL details)

TLF50281EL Application Board
How to start

- Connect the Application Board as shown below for a basic Test:



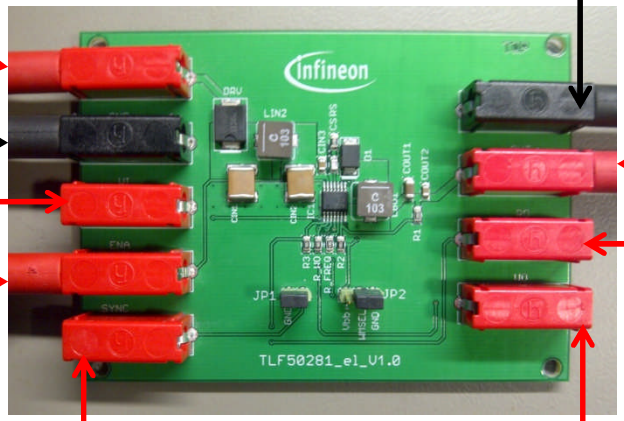
TLF50281EL Application Board Connections: details (Refer to Datasheet)

VBB Connected to the supply Voltage

GND Connected to ground

GND Connected to ground

OUT 5V output to load



WI Connected to watchdog. Apply a watchdog trigger signal

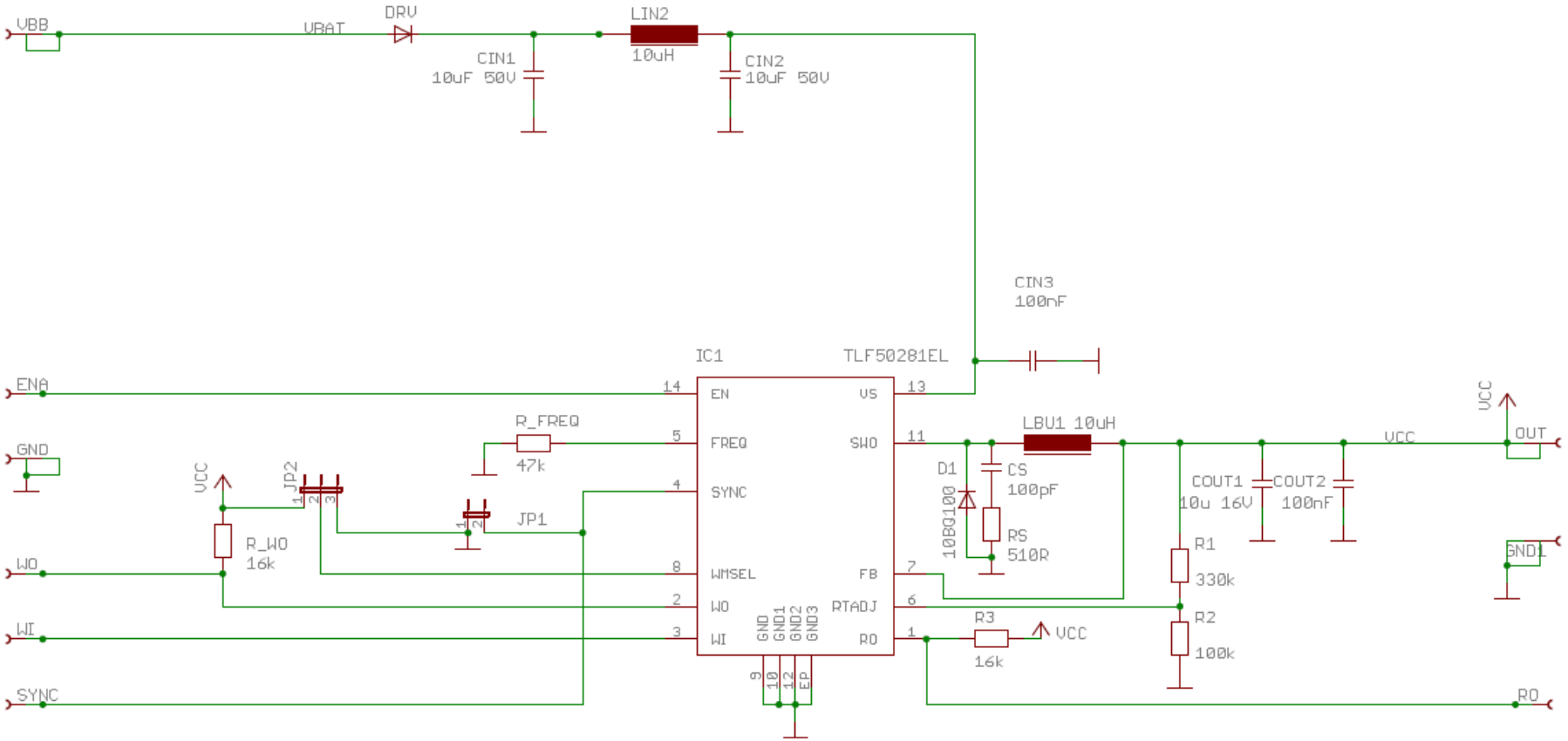
RO Open collector output, with pull-up resistor on board connected to **OUT**

ENA Connected to **VBB** to enable **OUT**

WO Open collector output, with pull-up resistor on board connected to **OUT**

SYNC Connected to synchronize the TLF50281EL to an external frequency source

TLF50281EL Application Board Schematic



TLF50281EL Application Board
Bill Of Material

Reference Designator	Characteristics
	TLF50281EL
R_1	330 kΩ
R_2	100 kΩ
R_3	16 kΩ
R_{WO}	16 kΩ
R_{FREQ}	47 kΩ
R_S	510 Ω
C_{IN1}	10 µF / 50 V
C_{IN2}	10 µF / 50 V
C_{IN3}	100 nF / 50 V
C_{OUT1}	10 µF / 16 V
C_{OUT2}	100 nF / 16 V
L_{IN2}	XAL6060-103 10 µH
L_{BU1}	XAL6060-103 10 µH
DRV	MURS360 3A / 600V

TLF50281EL Application Board
Bill Of Material

Reference Designator	Characteristics
D_1	10BQ100 1A / 100V
C_S	100 pF
JP_1	2 pins
JP_2	3 pins
V_{BB}	Banana Jack red
GND	2 x Banana Jack black
WI	Banana Jack red
ENA	Banana Jack red
SYNC	Banana Jack red
OUT	Banana Jack red
RO	Banana Jack red
WO	Banana Jack red

TLF50281EL Application Board
Reset adjustment

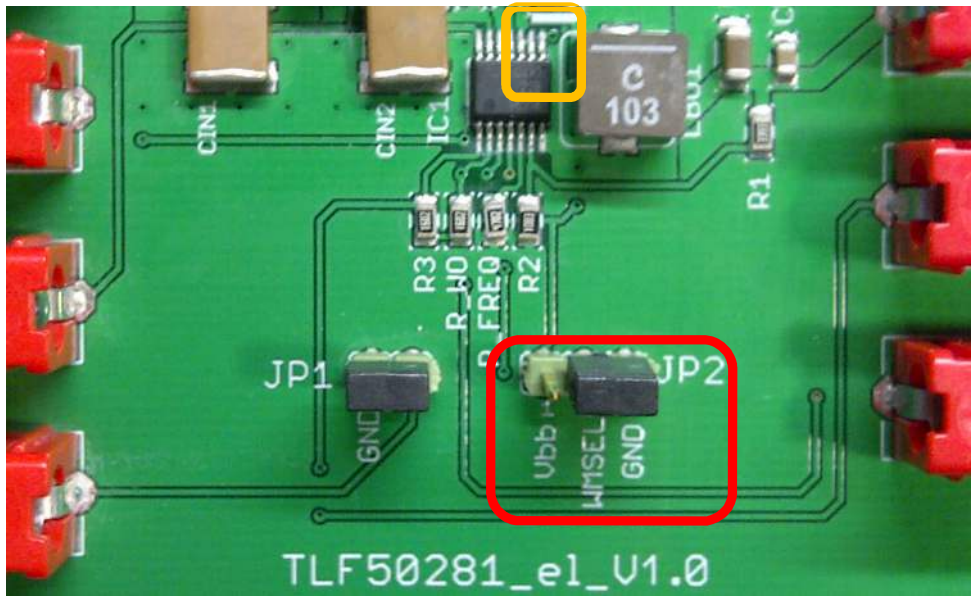
- The reset generator consists of an internal comparator with a reset threshold $V_{RO,T}$. By adding an external resistor divider between the output voltage V_{CC} and ground (GND) and connecting the point between the upper (R1) and lower (R2) resistor to pin RTADJ the desired reset threshold VRT (where the reset generator indicates an under voltage) might be adjusted. If reset function is not used please connect pin RTADJ to V_{CC}.

$$\text{Desired reset threshold} = V_{RO,\,T}\left(\frac{R1 + R2}{R2}\right) = V_{RT}$$

TLF50281EL Application Board
Watchdog mode selection

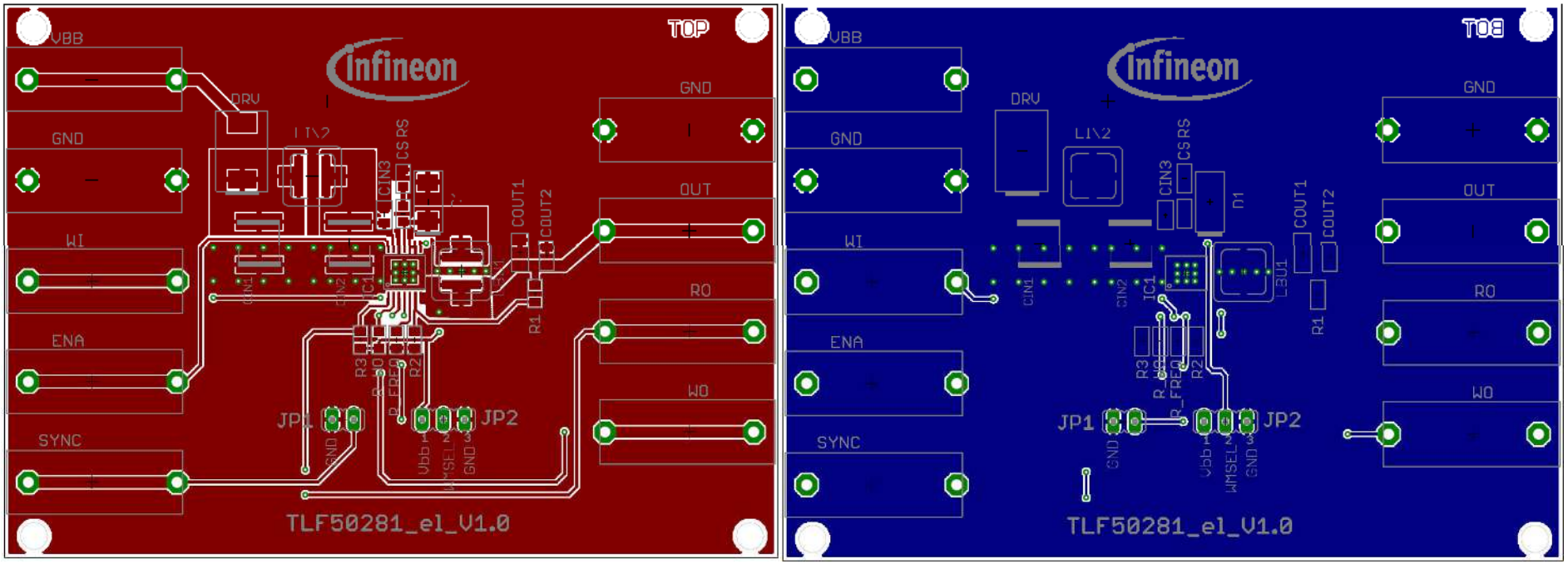
- The watchdog offers two operation modes:
  - Slow watchdog timing
  - Fast watchdog timing.

For slow watchdog timing please connect pin **WMSEL** to V_{CC} (output voltage) using **JP2**. For fast watchdog timing please connect WMSEL to ground (GND) using **JP2**.



- Pin 1 of JP2 is connected to OUT. V_{CC} is called V_{bb} at JP2. Please consider V_{bb} as V_{CC}, as described and listed in the datasheet.

TLF50281EL Application Board
PCB Layout



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