

TPS61099EVM-023 Evaluation Module

This user's guide describes the schematic, layout, bill of materials (BOM), and setup of the evaluation module (EVM) for the TPS610995, which outputs a fixed 3.6 V in a WSON package. The input voltage of the EVM is from 0.7 V to 5.5 V. The output current mainly depends on the input voltage, because the inductor peak current is limited at typical 1 A. The EVM supports typical 450 mA from a 2.4-V input voltage.

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1 Schematic

Figure 1 shows the schematic of the TPS61099EVM-023. The FB pin of the TPS610995 is connected to ground, to get a fixed 3.6 V. There are two 0603-package output capacitors that can be reduced at a small-output current condition. The tantalum capacitor, C7, is used to stabilize the input voltage for the TPS610995, in case the cable between the power supply and the EVM is too long. In real application, the tantalum capacitor is unnecessary. The definition of the connectors is explained as following:

- PIN 1 and PIN 2 of J1 are used for the ground of the input power supply.
- PIN 5 and PIN 6 of J1 are used for the positive input of the power supply.
- PIN 3 and PIN 4 of J1 are used to sense the input voltage closed to the IC (see the PCB).
- PIN 1 and PIN 2 of J2 are used for the positive input of the load.
- PIN 5 and PIN 6 of J2 are used for the negative input of the load.
- PIN 3 and PIN 4 of J2 are used to measure the output voltage closed to the IC (see the PCB).
- JP1 is used to enable or disable the IC through the EN pin.

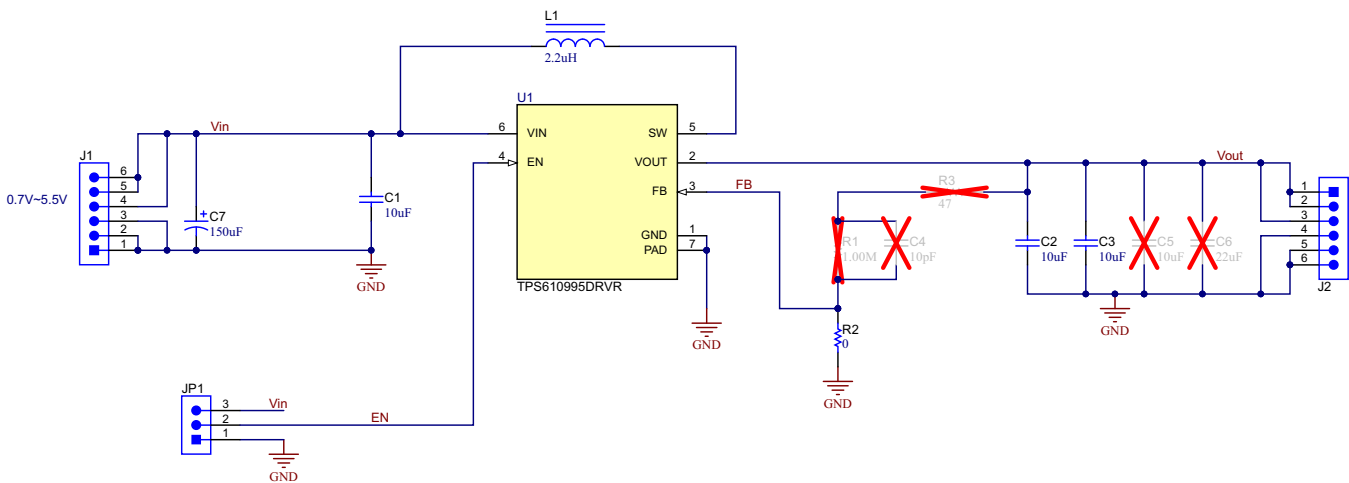


Figure 1. TPS61099EVM-023 Schematic

2 Bill of Materials

Table 1 lists the TPS61099EVM-023 BOM.

Table 1. Bill of Materials

Designator	QTY	Value	Description	Package Reference	Part Number	Manufacturer
!PCB	1		Printed circuit board	—	BMC023	Any
C1, C2, C3	3	10 μ F	Capacitor, ceramic, 10 μ F, 25 V, \pm 20%, X5R, 0603	0603	GRM188R61E106MA73D	MuRata
C7	1	150 μ F	Capacitor, Tantalum Polymer, 150 μ F, 16 V, \pm 20%, 0.05 ohm, 7343-31 SMD	7343-31	16TQC150MYF	Panasonic
J1, J2	2	—	Header, 100 mil, 6 \times 1, Gold, TH	6 \times 1 Header	TSW-106-07-G-S	Samtec
JP1	1	—	Header, 100 mil, 3 \times 1, Tin, TH	Header, 3 pin, 100 mil, Tin	PEC03SAAN	Sullins Connector Solutions
L1	1	2.2 μ H	Inductor, Shielded, 2.2 μ H, 2.6 A, 0.07 Ω , SMD	1008	DFE252012P-2R2M=P2	MuRata Toko
R2	1	0	Resistor, 0, 5%, 0.1 W, AEC-Q200 Grade 0, 0603	0603	CRCW06030000Z0EA	Vishay-Dale
SH-JP1	1	—	Shunt, 2.54 mm, Gold, Black	Shunt, 2.54 mm, Black	60900213421	Würth Elektronik
U1	1	—	Synchronous Boost Converter with 800-nA, Ultra-Low Quiescent Current, DRV0006A (WSON-6)	DRV0006A	TPS610995DRVR	Texas Instruments

3 Board Layout

The TPS61099EVM-023 is built with a two-layer PCB. The thickness of each layout is 1 oz. All the components are placed in the top layer, as shown in Figure 2.

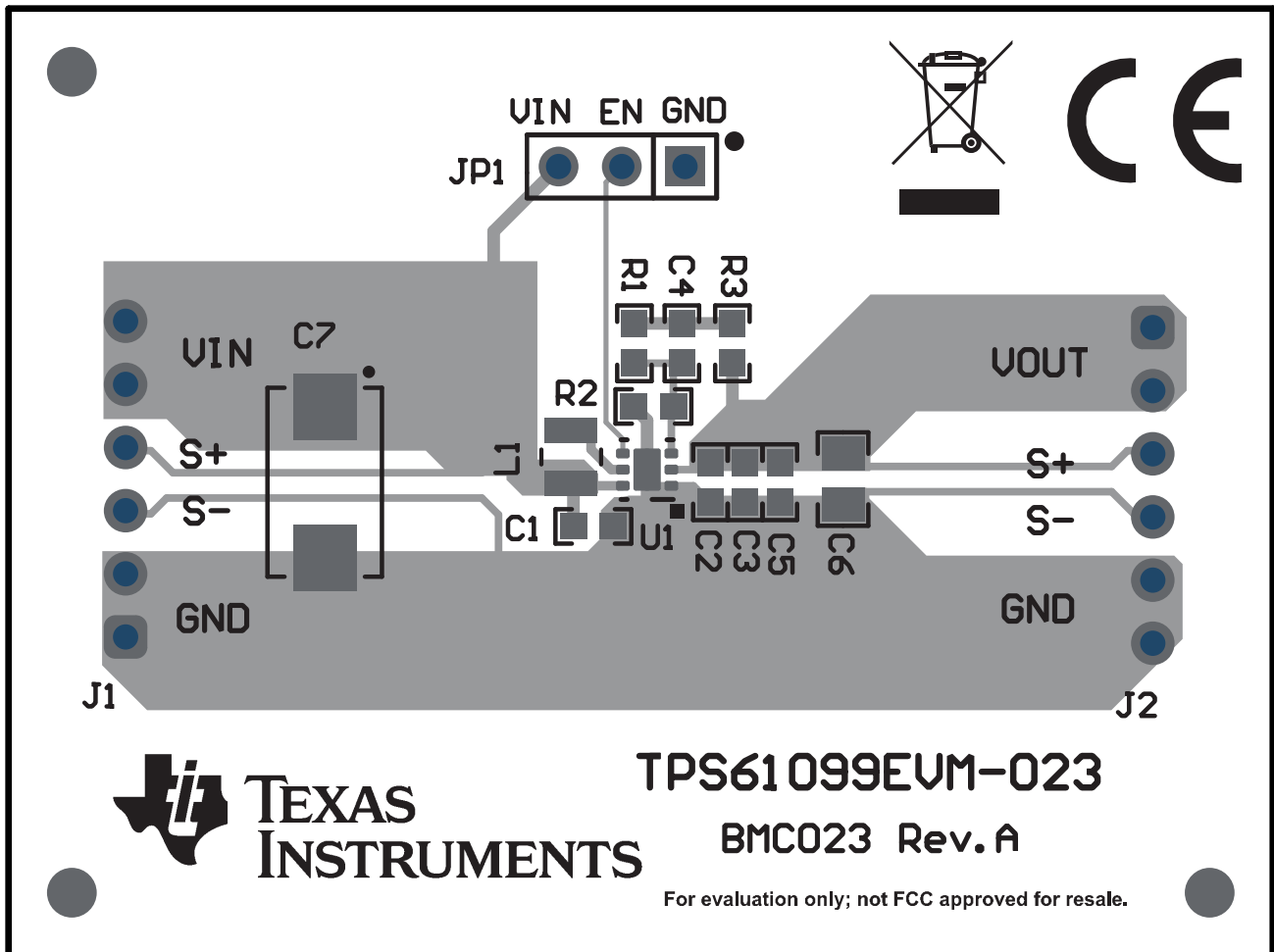


Figure 2. Top Layer of TPS61099EVM-023

The bottom layout is the ground panel, shown in [Figure 3](#).

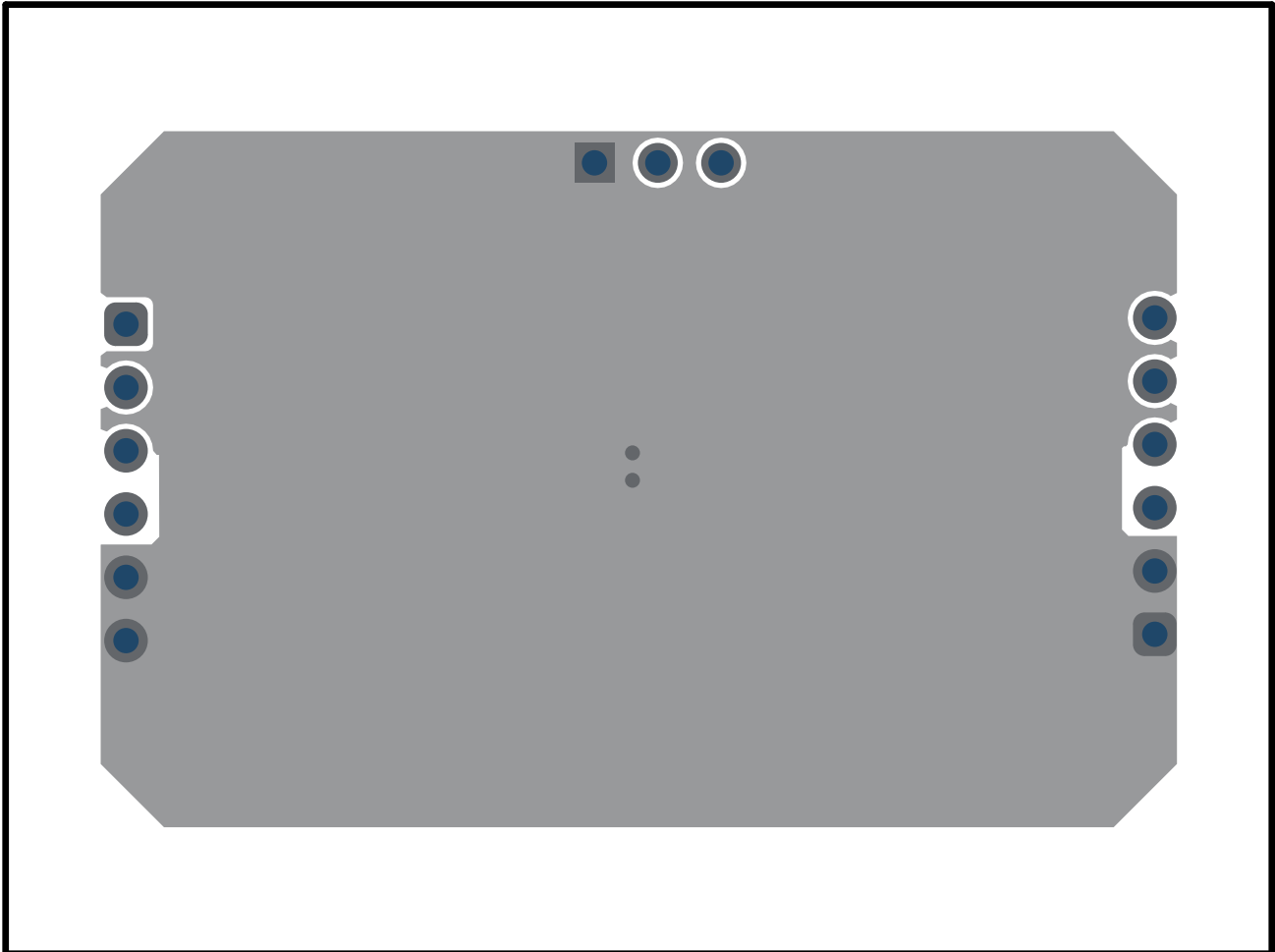


Figure 3. Bottom Layer of TPS61099EVM-023

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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2. Use EVMs only after User obtains the license of Test Radio Station as provided in Radio Law of Japan with respect to EVMs, or
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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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