Current Sense Amplifier

BD14210G-EVK-001

BD14210G-EVK-001 is an evaluation board for BD14210G-LA, which is ROHM's current sense amplifier. This user's guide explains BD14210G-EVK-001.

About BD14210G-LA

BD14210G-LA is a current sense amplifier. This is the product guarantees long time support in Industrial market. This device operates from a single 2.7V to 5.5V power supply. It has wide common mode voltage range from -0.2V to +26V, outputs analog voltage. The gain is 20 V/V. The matched gain resistor minimizes gain error and realizes low offset voltage. The input bias current is 1 μA (Typ) at typical condition. There is no need to adjust the gain error.

- Long Time Support Product for Industrial Applications
- Wide Common Mode Voltage Range
- High Accuracy
- Low Offset Voltage
- Low Input Bias Current

For more detailed information about the BD14210G-LA, refer to the datasheet.

About BD14210G-EVK-001

1． Board Information

- Size：90mm x 80mm x 1.6mm
- Number of Layers： 2
- Material：FR-4 (~125°C)
- Copper Thickness：2oz (70μm)

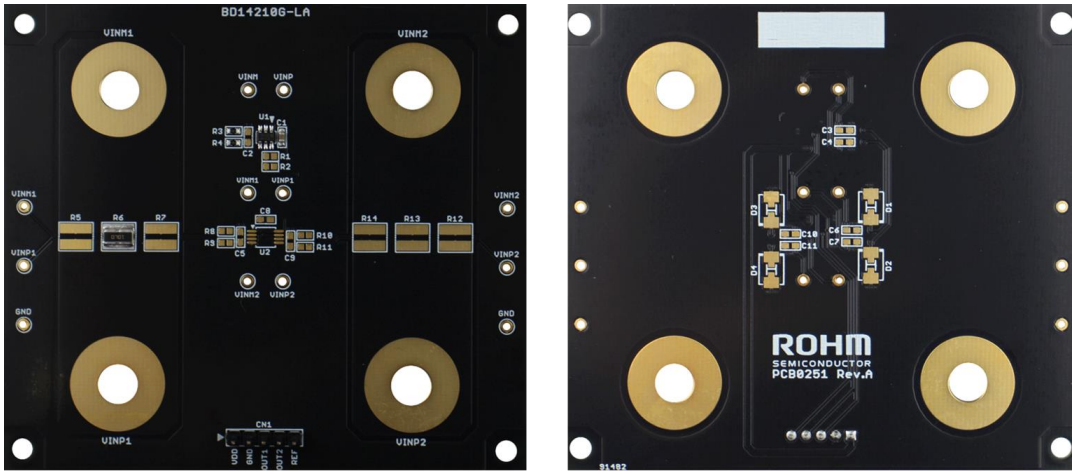

Figure 1. Pictures of BD14210G-EVK-001

2．Schematic Diagram

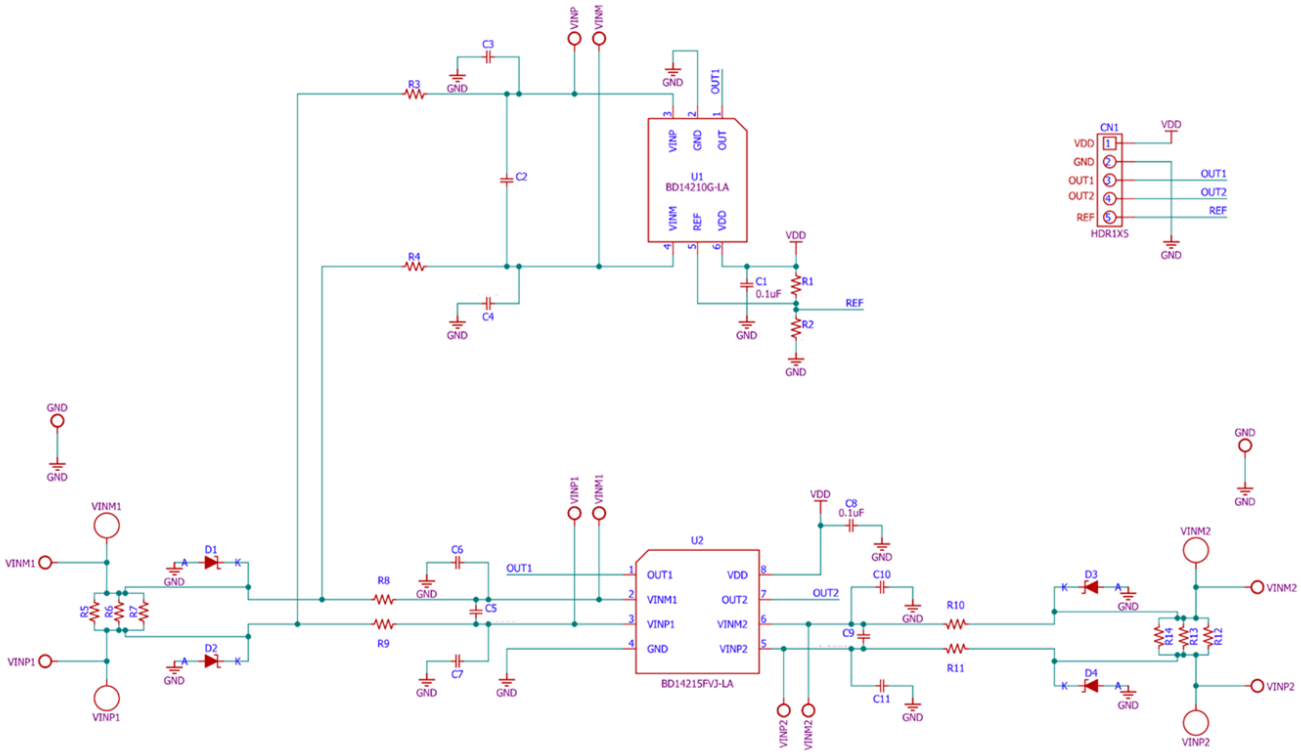

Figure 2. Schematic Diagram of BD14210G-EVK-001

3．Bill of Materials

Table 1. Bill of Materials of BD14210G-EVK-001

Part	Part Type	Manufacturer	Value	Size/Package	Description
U1	BD14210G-LA	ROHM Co., Ltd.	-	SSOP6	Current Sense Amplifier
C1	GRM188B31H104KA92D	Murata Manufacturing Co., Ltd.	0.1uF	1608(0603)	Capacitor
C2, C3, C4	N.M.	-	-	1608(0603)	Capacitor
R1, R2	N.M.	-	-	1608(0603)	Resistor
R3, R4	MCR03EZPJ000	ROHM Co., Ltd.	0Ω	1608(0603)	Resistor
R5, R7	N.M.	-	-	5025(2010)	Shunt Resistor
R6	LTR50UZPFU10L0	ROHM Co., Ltd.	10mΩ	5025(2010)	Shunt Resistor
D1, D2	N.M.	-	-	DO-214AA (SMB) /SOD-323FL	Zener Diode
CN1	PH-1x5SG	Useconn Electronics Ltd.	-	1x5 pin	Connector

Note: Only the materials used in BD14210G-EVK-001 are listed.

N.M. = Not Mounted

4．Layout（Top View）

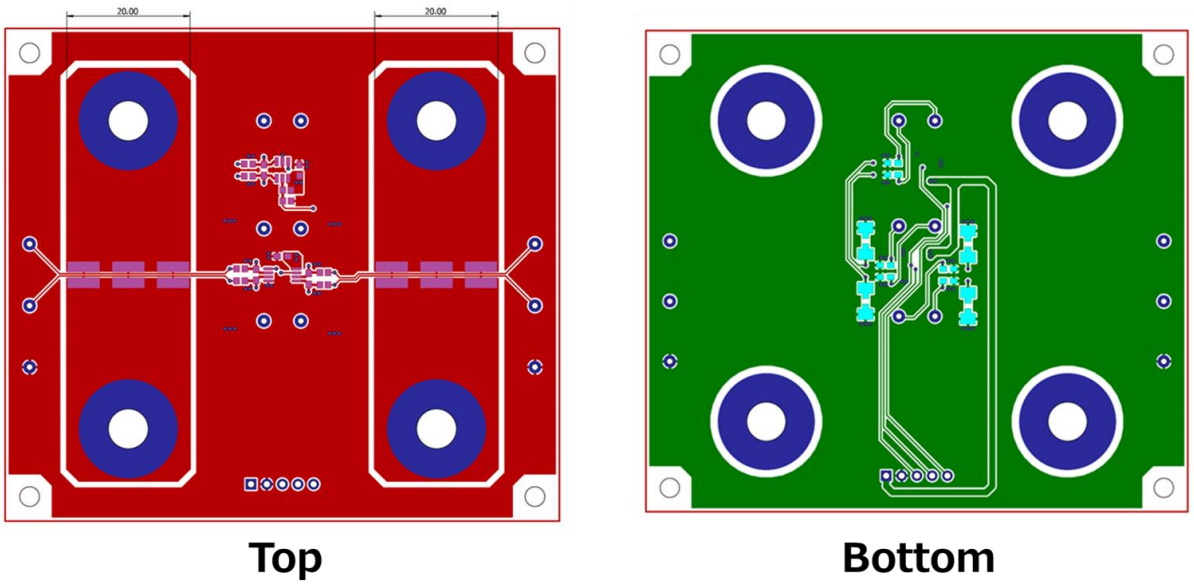

Figure 3. Layouts of BD14210G-EVK-001

5．Reference Application Data

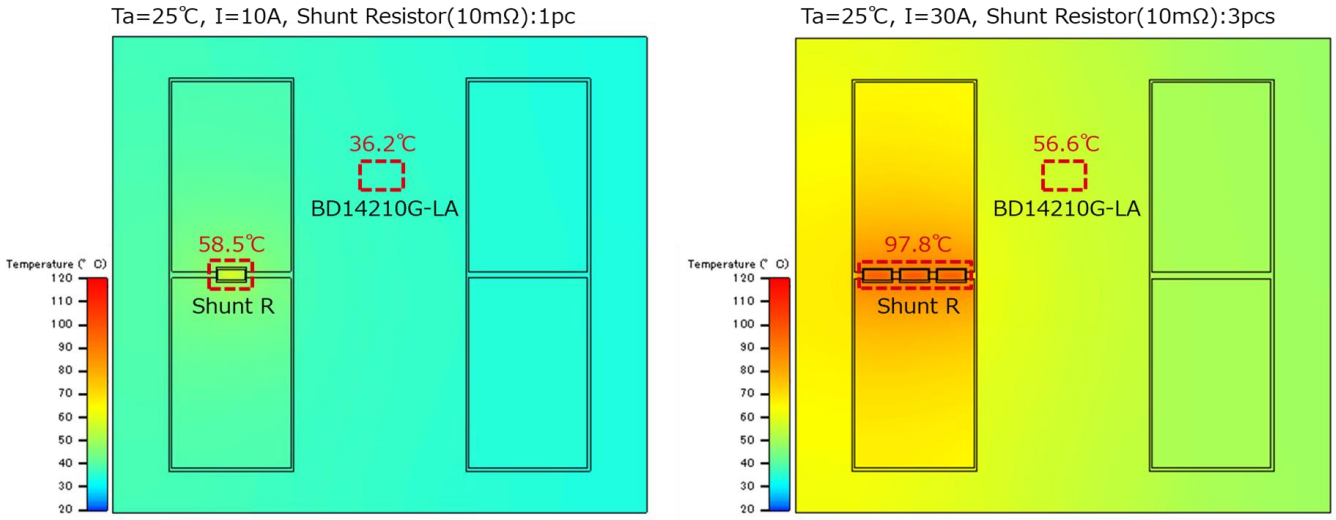

Figure 4. Thermal simulation result

Note: These data are reference using a thermal simulation tool. Please note that the temperature will change depending on the actual usage environment.

Please use this board under the condition that the heat generated by the shunt resistor does not exceed the usable temperature of the board, 125°C.

The current values listed are reference, so when changing the current value, please use this board within the rated power of the shunt resistor.