General Description

The MAX14626 evaluation kit (EV kit) is a fully assembled and tested circuit board that demonstrates the MAX14626 high-voltage 4–20mA current-loop protector.

Benefits and Features

- Evaluates Current-Limit Protection
- Proven PCB Layout
- Fully Assembled and Tested

***Ordering Information* appears at end of data sheet.**

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C2	2	1µF ±10%, 50V X5R ceramic capacitors (0805) Taiyo Yuden UMK212BJ105KG-T
JU1–JU8	8	2-pin single-row headers
R1	1	200Ω ±1%, 0.5W resistor (1210)
R2	1	499Ω ±1%, 0.5W resistor (1210)
R3	1	1kΩ ±1%, 0.5W resistor (1210)
R4	1	2kΩ ±1%, 0.5W resistor (1210)
R5	1	5kΩ 1W potentiometer Bourns 3290W-1-502
R6, R7	2	499Ω ±0.1% resistors (0805)

DESIGNATION	QTY	DESCRIPTION
TB1, TB2	2	Terminal blocks Molex 39357-0002
TP1, TP3, TP5	3	Red test points
TP2, TP4, TP6	3	Black test points
U1	1	4–20mA current-loop protector (6 TDFN-EP*) Maxim MAX14626ETT+ (Top Mark: AVF)
—	8	Shunts
—	1	PCB: MAX14626 EVKIT

**EP = Exposed pad.*

Component Suppliers

SUPPLIER	PHONE	WEBSITE
Bourns, Inc.	408-496-0706	www.bourns.com
Molex	800-786-6539	www.molex.com
Taiyo Yuden	800-348-2496	www.t-yuden.com

***Note:** Indicate that you are using the MAX14626 when contacting these component suppliers.*

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Quick Start

Required Equipment

- MAX14626 EV kit
- 25V DC power supply
- Ammeter

Procedure

The EV kit is fully assembled and tested. Follow the steps below to verify board operation:

1) Verify that all jumpers are in their default positions, as shown in Table 1.
2) Install shunts on jumpers JU7 and JU8.
3) Connect one side of the ammeter to 25V power supply and the other side to TP1 to measure the current going through the device and load.
4) Connect the ground of the power supply to TP2.
5) Install a shunt on jumper JU2.
6) Turn on the 25V power supply. Verify that the ammeter reading is approximately 30mA.
7) Turn off the power supply.
8) Remove the shunt on JU2. Install a shunt on jumper JU3.
9) Turn on the 25V power supply. Verify that the ammeter reading is approximately 30mA.
10) Turn off the power supply.
11) Remove the shunt on JU3. Install a shunt on jumper JU4.
12) Turn on the 25V power supply. Verify that the ammeter reading is approximately 19.6mA.
13) Turn off the power supply.
14) Remove the shunt on JU4. Install a shunt on jumper JU5.
15) Turn on the 25V power supply. Verify that the ammeter reading is approximately 10.9mA.
16) Turn off the power supply.

Detailed Description of Hardware

The MAX14626 EV kit is a fully assembled and tested circuit board demonstrating the MAX14626 high-voltage 4–20mA current-loop protector IC in a 6-pin surface-mount TDFN package with an exposed pad.

Using all the jumpers, the EV kit circuit can be configured to evaluate the current-limit capability of the device. For example, with shunts on JU7 and JU8, the load is 249Ω. With shunt on JU2, the added resistance is 200Ω. The on-resistance of the device is approximately 25Ω. With 25V input, the current going through the device can be calculated as 25V/(249Ω + 25Ω + 200Ω) = 52.7mA, but the actual current going through is limited by the device to be approximately 30mA.

Table 1. Jumper Settings (JU1–JU8)

JUMPER	SHUNT POSITION	DESCRIPTION
JU1	Installed	TP1 connected directly to IN
	Not installed*	TP1 not connected to IN
JU2	Installed	TP1 connected to 200Ω to IN
	Not installed*	TP1 not connected to IN
JU3	Installed	TP1 connected to 500I IN
	Not installed*	TP1 not connected to IN
JU4	Installed	TP1 connected to 1kI to IN
	Not installed*	TP1 not connected to IN
JU5	Installed	TP1 connected to 2kΩ to IN
	Not installed*	TP1 not connected to IN
JU6	Installed	TP1 connected to variable resistor to IN
	Not installed*	TP1 not connected to IN
JU7	Installed	OUT connected 499Ω to ground
	Not installed*	OUT not connected 499Ω to ground
JU8	Installed	OUT connected 499Ω to ground
	Not installed*	OUT not connected 499Ω to ground

**Default position.*

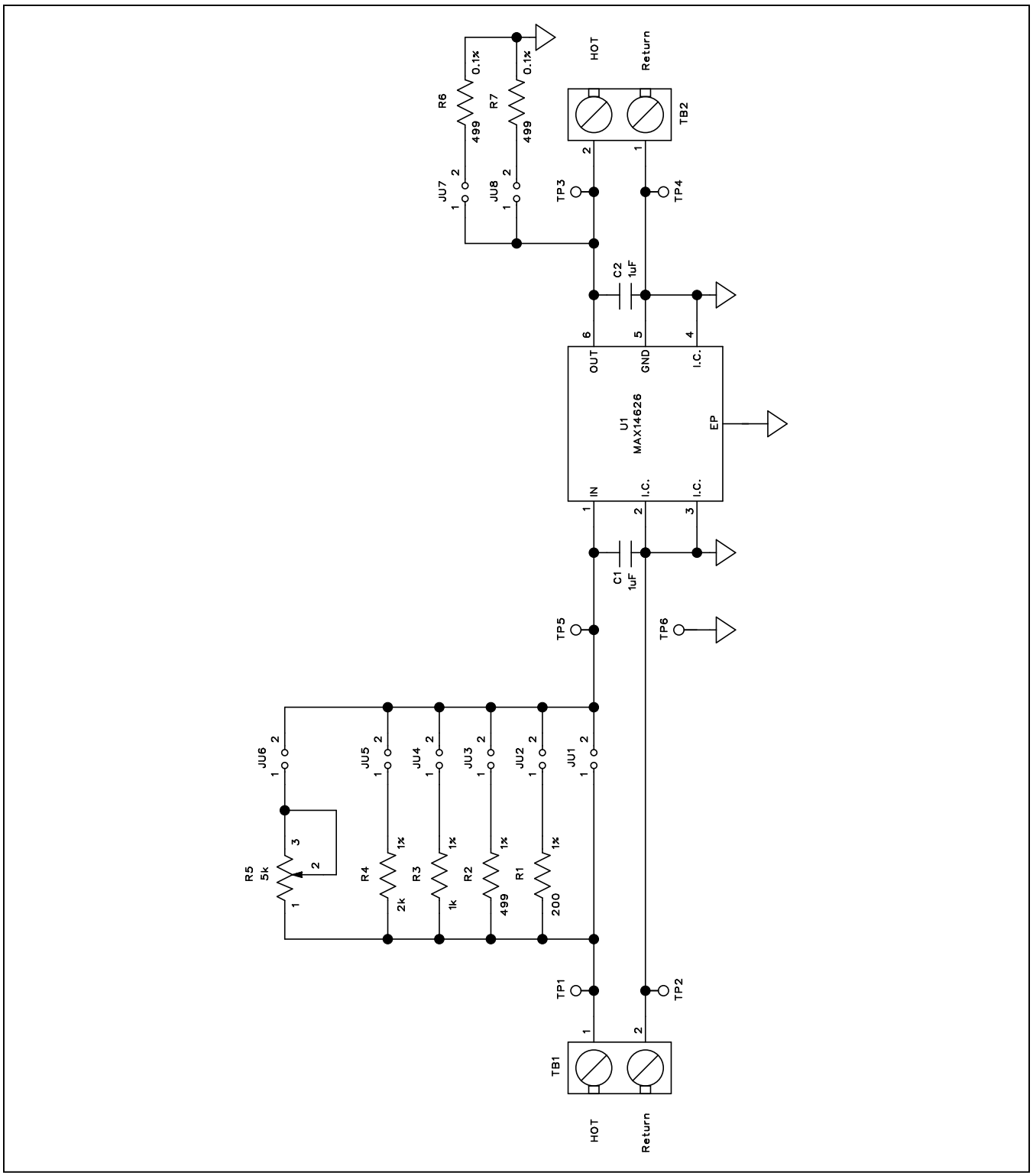

Figure 1. MAX14626 EV Kit Schematic

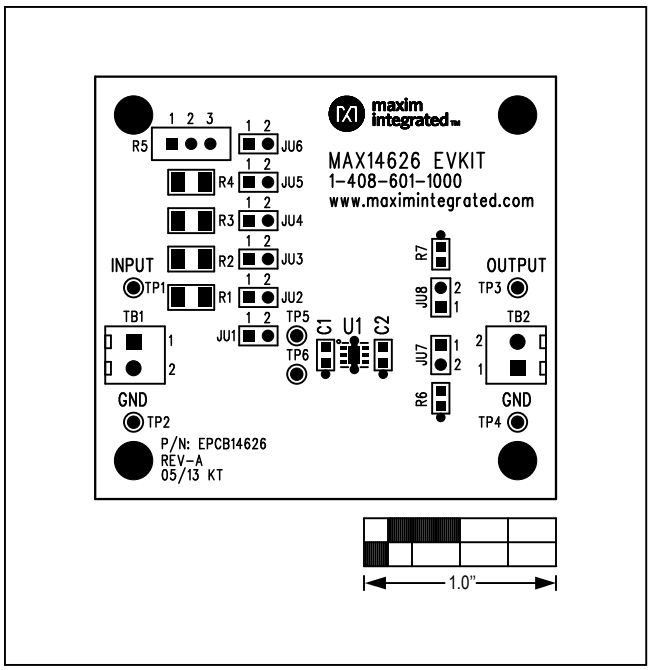

Figure 2. MAX14626 EV Kit Component Placement Guide—Component Side

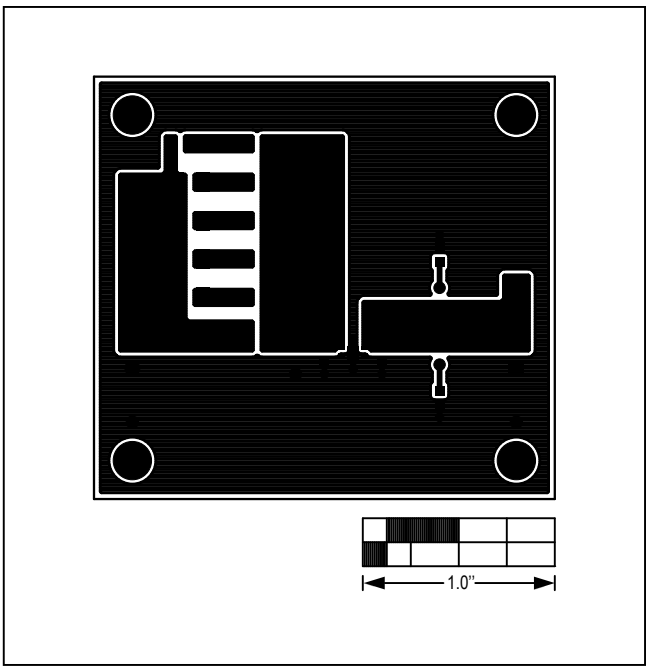

Figure 3. MAX14626 EV Kit PCB Layout—Component Side

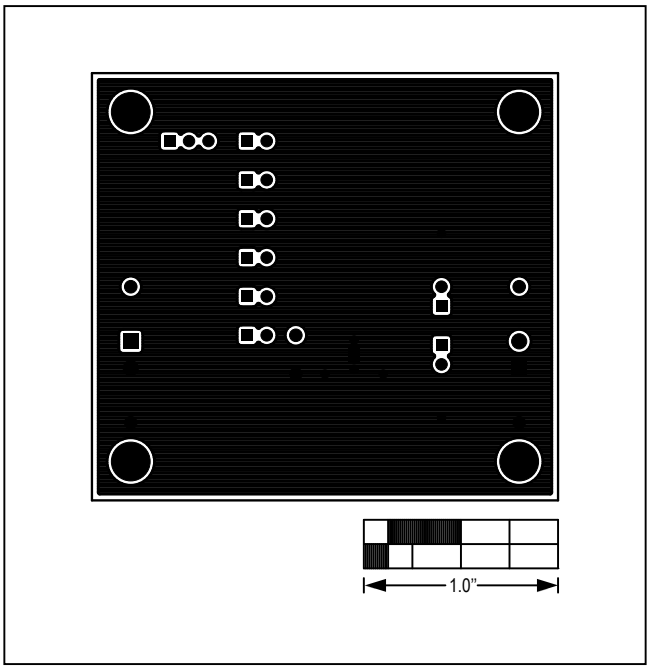

Figure 4. MAX14626 EV Kit PCB Layout—Solder Side

Ordering Information

PART	TYPE
MAX14626EVKIT#	EV Kit

#Denotes RoHS compliant.

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	9/13	Initial release	—

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