Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

✕MAXI✕

MAX1493 Evaluation Kit

General Description

The MAX1493 is a low-power, 4.5-digit analog-to-digital converter (ADC) with integrated liquid-crystal display (LCD) drivers.

The MAX1493 evaluation kit (EV kit) provides a proven printed-circuit board (PCB) layout to facilitate evaluation of the MAX1493 IC. Connect the 4V to 28V DC and ground return to terminal block TB1 (see Figure 1).

The EV kit is not a complete digital voltmeter (DVM); additional input scaling and protection circuitry might be required.

This EV kit can also evaluate the MAX1495CCJ+. Contact the factory for free samples. See the *Evaluating the MAX1495* section for additional information.

Features

♦ **Reference Design**

♦ **Proven PCB Layout**

♦ **Complete Evaluation System**

♦ **Convenient On-Board Test Points**

♦ **Fully Assembled and Tested**

Ordering Information

PART	TYPE
MAX1493EVKIT+	EV Kit

+Denotes lead-free and RoHS-compliant.

Component List

DESIGNATION	QTY	DESCRIPTION
C1, C2	2	10µF ±20%, 10V X5R ceramic capacitors (1210) TDK C3225X7R1C106M
C3–C6	4	0.47µF ±10%, 16V X7R ceramic capacitors (0805) TDK C2012X7R1C474K
C7, C8, C9	3	0.1µF ±10%, 16V X7R ceramic capacitors (0603) TDK C1608X7R1C104K
FB1	1	Ferrite bead (0805) Murata BLM21AH102SN1
JU1–JU4, JU7, JU8, JU10, JU11	8	3-pin headers
JU5, JU6, JU9	3	2-pin headers
LCD1	1	Triplexed LCD, MAX1494 type DCI Inc. 04-0925-00

DESIGNATION	QTY	DESCRIPTION
LCD1 (2 rows)	2	15-pin socket headers
R1	1	133kΩ ±1% resistor (1206)
R2	1	100kΩ ±1% resistor (1206)
TB1	1	0.200in, 2-circuit screw terminal block
TP1–TP4	4	8-pin headers
U1	1	Maxim 4.5-digit ADC MAX1493CCJ+ (32-pin TQFP, 7mm x 7mm)
U2	1	Maxim LDO linear regulator MAX1615EUK+ (5-pin SOT23) (Top Mark: ABZD)
U5	1	Maxim voltage reference MAX6062AEUR+ (3-pin SOT23) (Top Mark: FZFY)
—	12	Shunts
—	1	PCB: MAX1493 Evaluation Kit+

Component Suppliers

SUPPLIER	PHONE	WEBSITE
Murata Mfg. Co., Ltd.	770-436-1300	www.murata.com
TDK Corp.	847-803-6100	www.component.tdk.com

Note: *Indicate that you are using the MAX1493 or MAX1495 when contacting these component suppliers.*

✕MAXI✕

_____ *Maxim Integrated Products* 1

MAX1493 Evaluation Kit

_____Quick Start

Required Equipment
Before beginning, the following equipment is needed:

- MAX1493 EV kit
- DC power supply, 4V to 28V DC @ 1mA

Procedure
The MAX1493 EV kit is fully assembled and tested. Follow the steps below to verify board operation. **Caution: Do not turn on the power until all connections are made.**

1) Ensure that all jumpers are set to their factory-default position (see Table 1 for jumper settings).

2) Turn on the power supply.

3) Apply an input signal in the range of -2V to +2V between AIN+ and AIN-. Observe the readout on the LCD display.

4) To configure the display for the +0.2V to -0.2V input range, move jumper JU3 to pins 2-3 and move jumper JU8 to pins 1-2.

__Detailed Description of Hardware

The MAX1493 device under test (U1) is a low-power, 4.5-digit analog-to-digital converter (ADC) with integrat-ed liquid-crystal display (LCD) drivers. The optional MAX6062 (U5) provides an improved-accuracy external reference voltage of 2.048V. See Figure 1 and refer to the MAX1491–MAX1495 IC data sheet.

The EV kit includes a MAX1615 3V/5V linear regulator (U2).

The EV kit is not a complete digital voltmeter (DVM); additional input scaling and protection circuitry might be required.

Evaluating the MAX1495
The MAX1495 is similar to the MAX1493, but with the ability to enable offset calibration on demand. Refer to the MAX1491–MAX1495 IC data sheet. Request a free sample of MAX1495CCJ+ and follow the steps below to verify board operation. **Caution: Do not turn on the power until all connections are made.**

1) With power disconnected, replace U1 with the MAX1495.

2) Ensure that jumper JU1 selects 3V or 5V logic level, as desired.

3) Connect the DC power supply at terminal block TB1.

4) Turn on the power supply. The LCD display should begin indicating measurement data.

MAXIM

Table 1. Jumper Functions

JUMPER	SIGNAL	SHUNT POSITION	EV KIT FUNCTION
JU1	DVDD	1-2*	DVDD = 5V
		2-3	DVDD = 3V
JU2	DPON	1-2*	DPON = DVDD: Enable decimal point
		2-3	DPON = GND: Disable decimal point
JU3	DPSET1	1-2*	DPSET1 = DVDD. Controls the decimal point of the LCD**
		2-3	DPSET1 = GND. Controls the decimal point of the LCD**
JU4	DPSET2	1-2*	DPSET2 = DVDD. Controls the decimal point of the LCD**
		2-3	DPSET2 = GND. Controls the decimal point of the LCD**
JU5	REF-	1-2*	REF- = GND
		Open	REF- must be provided by user
JU6	REF+	1-2*	REF+ = 2.048V from U5 (MAX6062)
		Open	REF+ must be provided by user
JU7	INTREF	1-2*	INTREF = DVDD: Internal reference enabled
		2-3	INTREF = GND: External reference must be provided by user
JU8	RANGE	1-2	RANGE = DVDD: ±200mV input range
		2-3*	RANGE = GND: ±2V input range
JU9	LOWBATT	1-2*	LOWBATT input divider connected to EV kit power supply
		Open	LOWBATT input is independent of EV kit power supply
JU10	HOLD	1-2	HOLD = DVDD: Hold the current ADC value on the LCD
		2-3*	HOLD = GND: Normal operation
JU11	PEAK	1-2	PEAK = DVDD: Display the highest ADC value on the LCD
		2-3*	PEAK = GND: Normal operation

*Default position.

**Refer to the Decimal Point Control section in the MAX1491–MAX1495 IC data sheet.

Table 2. Decimal Point Control

DECIMAL POINT LOCATION	JU2 (DPON)	JU3 (DPSET1)	JU4 (DPSET2)	JU8 (RANGE)	RECOMMENDED INPUT SCALING
18888	2-3	—	—	—	—
1888.8	1-2	2-3	2-3	—	—
188.88	1-2	2-3	1-2	1-2	1:1, input range ±0.2V
18.888	1-2	1-2	2-3	2-3	10:1, input range ±20V
1.8888	1-2	1-2	1-2	2-3	1:1, input range ±2V

Evaluates: MAX1493/MAX1495
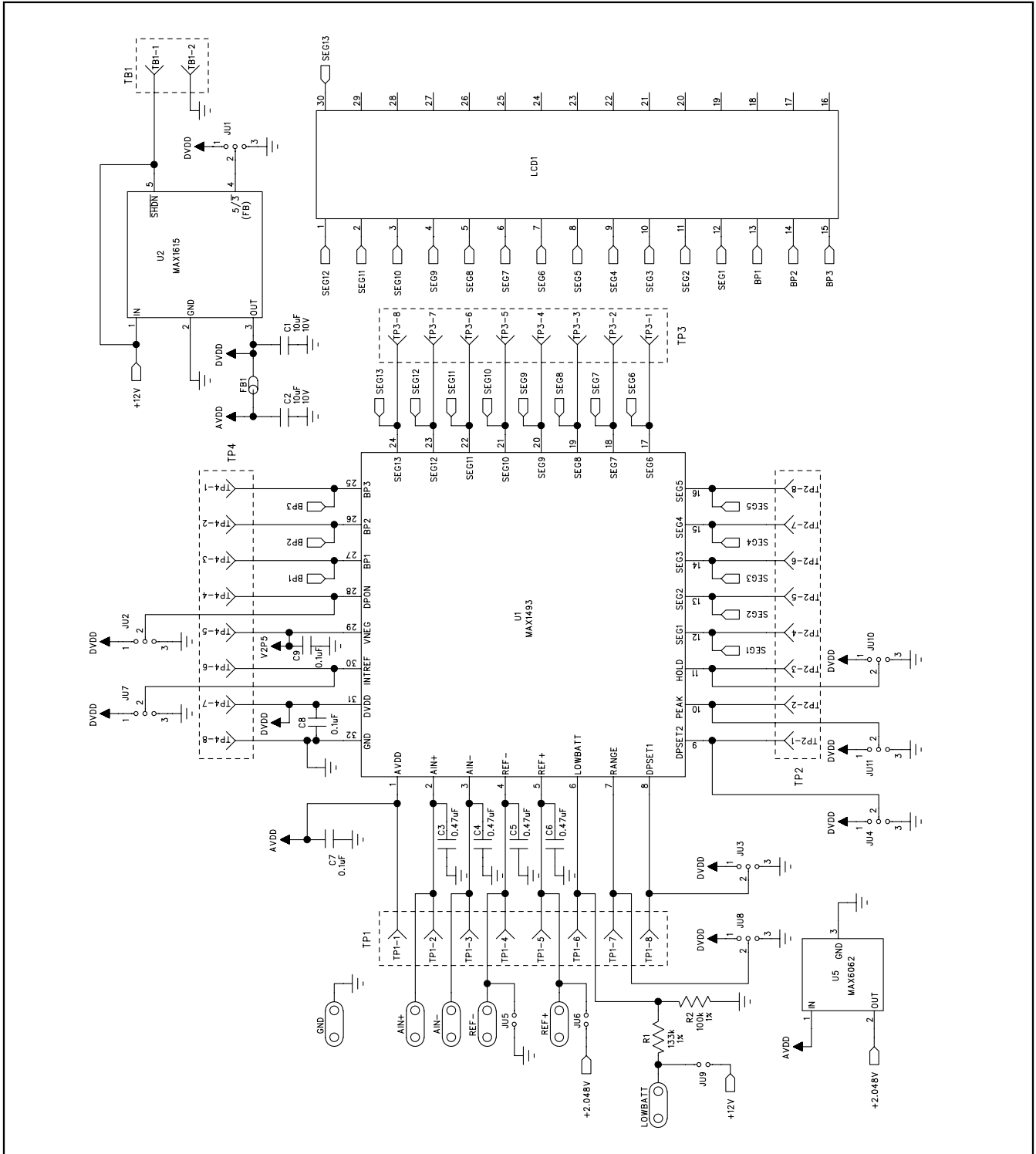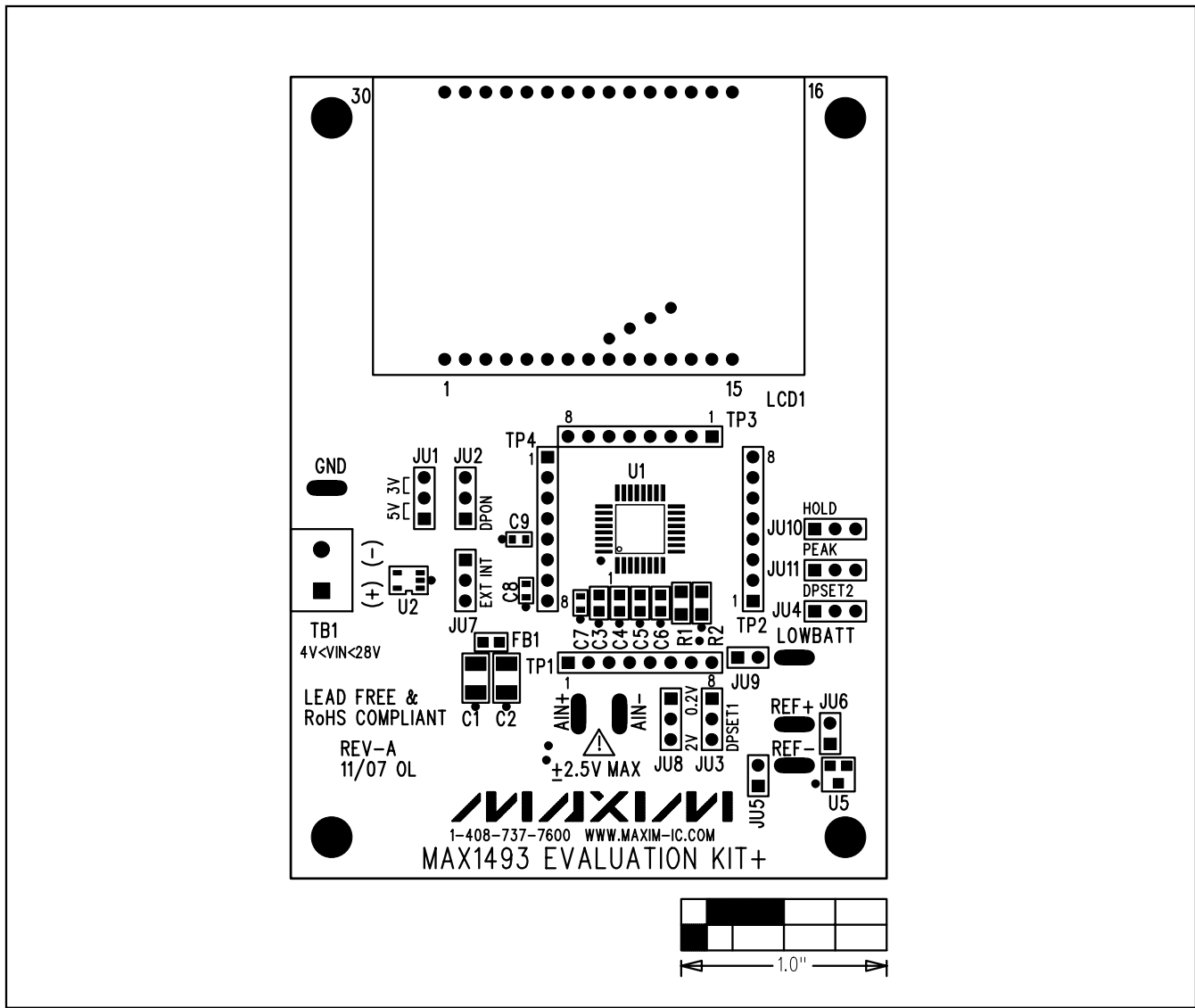

Figure 1. MAX1493 EV Kit Schematic

MAXIM

Figure 2. MAX1493 EV Kit Component Placement Guide—Component Side

Evaluates: MAX1493/MAX1495
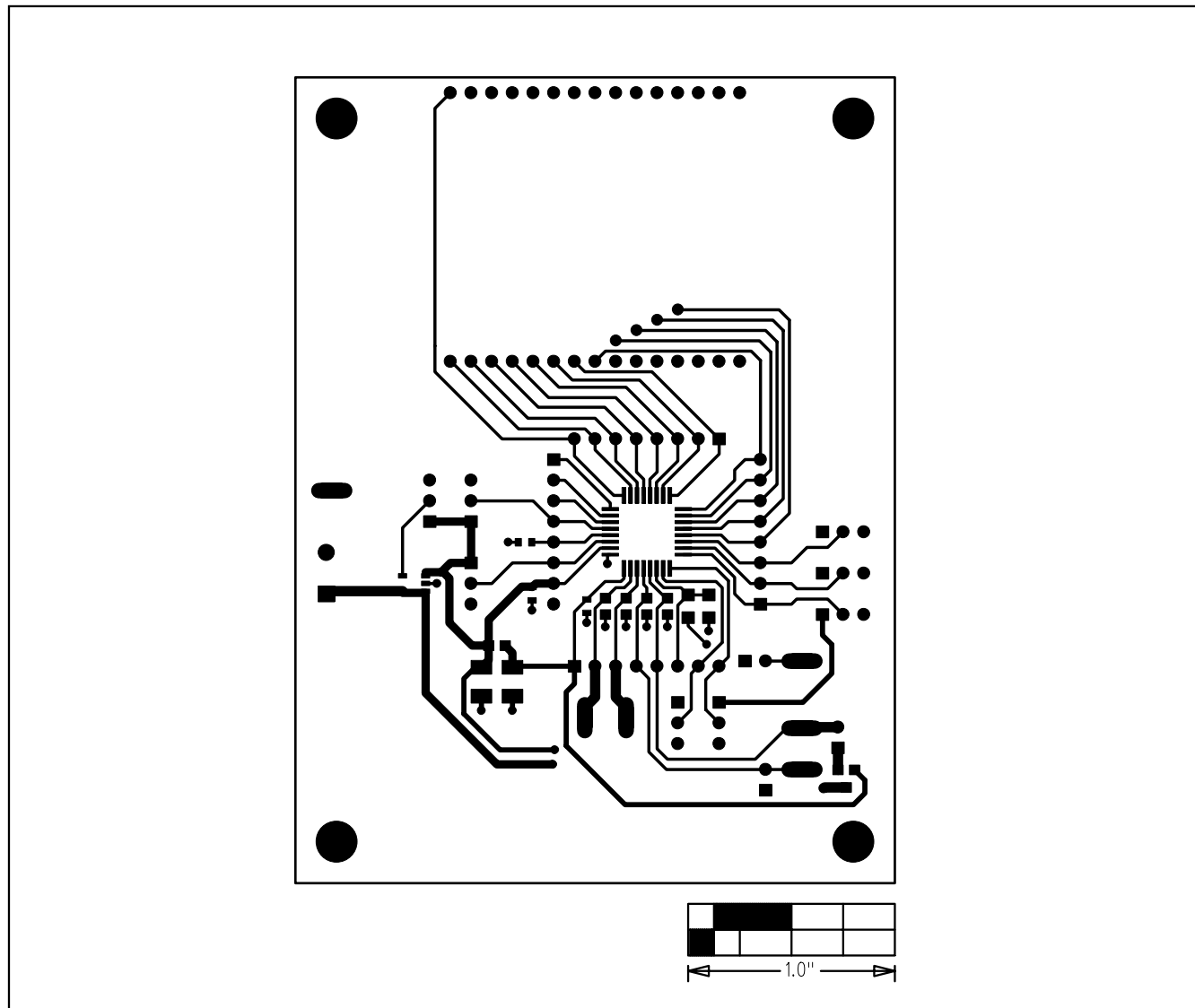
Figure 3. MAX1493 EV Kit PCB Layout—Component Side

MAXIM
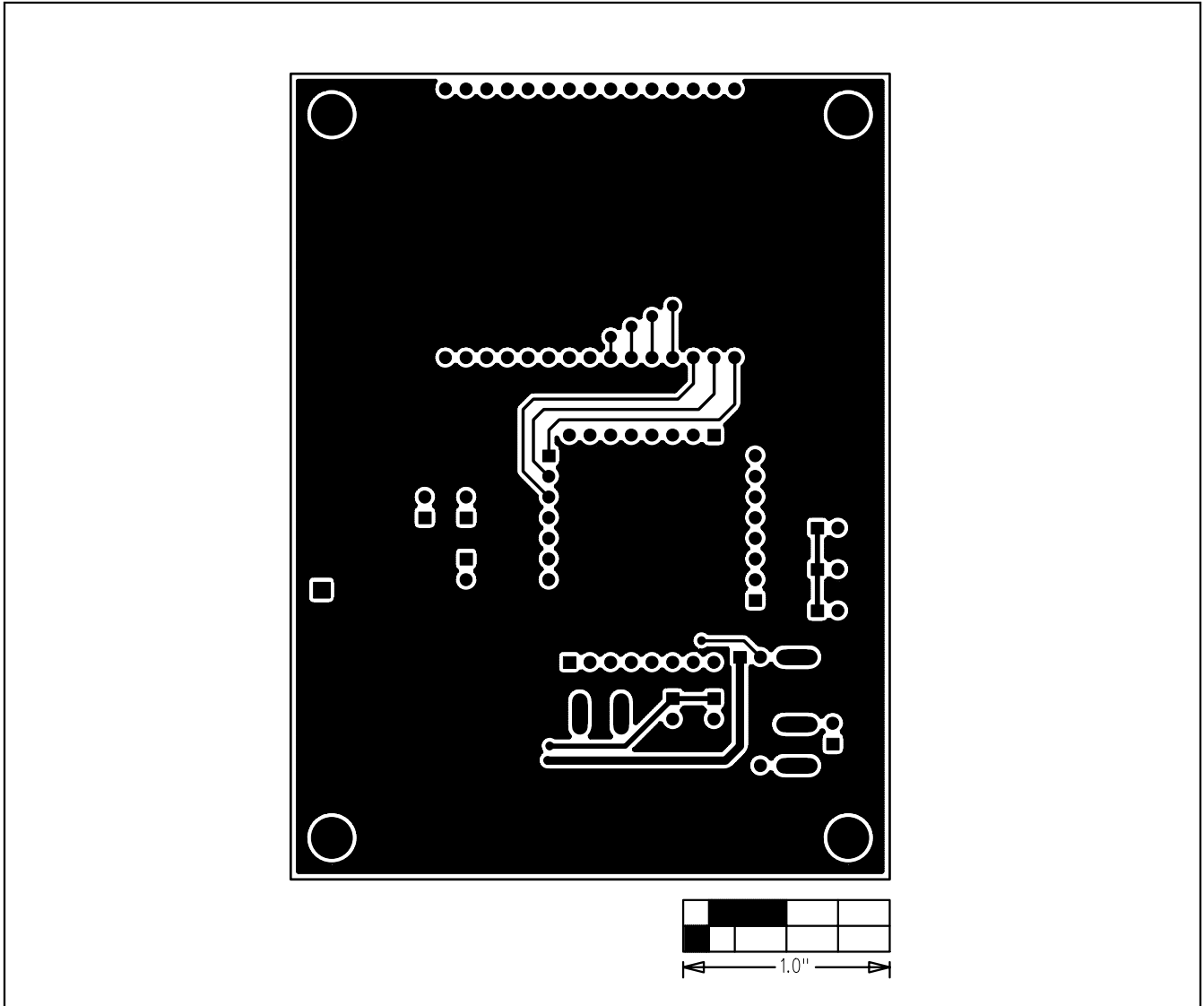
Figure 4. MAX1493 EV Kit PCB Layout—Solder Side