19-1732; Rev 0; 5/00

MAX3640 Evaluation Kit

Evaluates: MAX3640

General Description

The MAX3640 evaluation kit (EV kit) is an assembled surface-mount demonstration board that provides easy evaluation of the MAX3640 622Mbps low-voltage differential signal (LVDS), dual 4:2 asynchronous crosspoint switch. The board includes an extra transmission line for characterization purposes.

The MAX3640 EV kit operates from a single +3.3V power supply and includes all external components necessary to interface with the LVDS inputs and outputs.

The LVDS inputs (DIA1–DIA4 and DIB1–DIB4) are internally terminated with 100Ω differential input resistance and therefore require no external termination. Ensure that LVDS devices driving these inputs are not redundantly terminated. The LVDS outputs (DOA1–DOA4 and DOB1–DOB4) require a differential termination of 100Ω between the complementary outputs.

Connecting LVDS Outputs to 50Ω Oscilloscope Inputs

To monitor LVDS signals with 50Ω oscilloscope inputs, leave the coupling capacitors in series with the outputs and remove the differential load resistors (see R1–R8 in the *Component List*). If you are observing only one output with a 50Ω probe, balance the other output with a 50Ω terminator to ground.

Connecting LVDS Outputs to High-Impedance Oscilloscope Inputs

To monitor LVDS signals with high-impedance oscilloscope inputs, be sure the 100Ω differential load resistors between the differential outputs are installed (see R1–R8 in the *Component List)*.

Layout Consideration

All relative input and output data lines have equal lengths to minimize channel-to-channel skew. The transmission lines all have 100Ω differential characteristic impedance between the complementary signal lines.

Jumpers

Jumpers JU1–JU4 allow the SEL1–SEL4 pins to be attached to V_{CC} or GND. These pins set up the allocation of the input channels to the output channels. Jumpers JU6, JU7, and JU8 allow IN_SEL, ENA, and ENB to be attached to V_{CC} or GND. Refer to Table 1 in the MAX3640 data sheet for more information on these pins.

Features

- **+3.3V Single Supply**
- **Includes Transmission Line for Characterization**
- **Fully Assembled and Tested Surface-Mount Board**

Ordering Information

PART	TEMP. RANGE	IC PACKAGE
MAX3640EVKIT	0°C to +85°C	48 TQFP

Component Suppliers

SUPPLIER	PHONE	FAX
AVX	803-946-0690	803-626-3123
Digi-Key	218-681-6674	218-681-3380
Murata	814-237-1431	814-238-0490

Note: *Please indicate that you are using the MAX3640 when contacting these component suppliers.*

Component List

DESIGNATION	QTY	DESCRIPTION
C1–C20	20	0.01µF ±10%, 16V min X7R type ceramic capacitors
C21, C22	2	10µF ±10%, 16V min tantalum capacitors
J1–J4, J9–J24	—	Not installed
J5–J8, J25–J32	12	SMA connectors, PC mount Digi-Key J500-ND
J33, J34	2	Test points Digi-Key 5000K-ND
JU1–JU4, JU6, JU7, JU8	7	1×3 headers (0.1in centers) Digi-Key S1012-36-ND
R1–R8	8	100Ω ±1% resistors (0603)
R9–R15	7	1kΩ ±5% resistors (0603)
U1	1	MAX3640UCM (48-pin TQFP)
None	1	MAX3640 data sheet
None	1	MAX3640 EV kit data sheet
None	1	MAX3640 PC board (Rev B)

MAX3640 Evaluation Kit

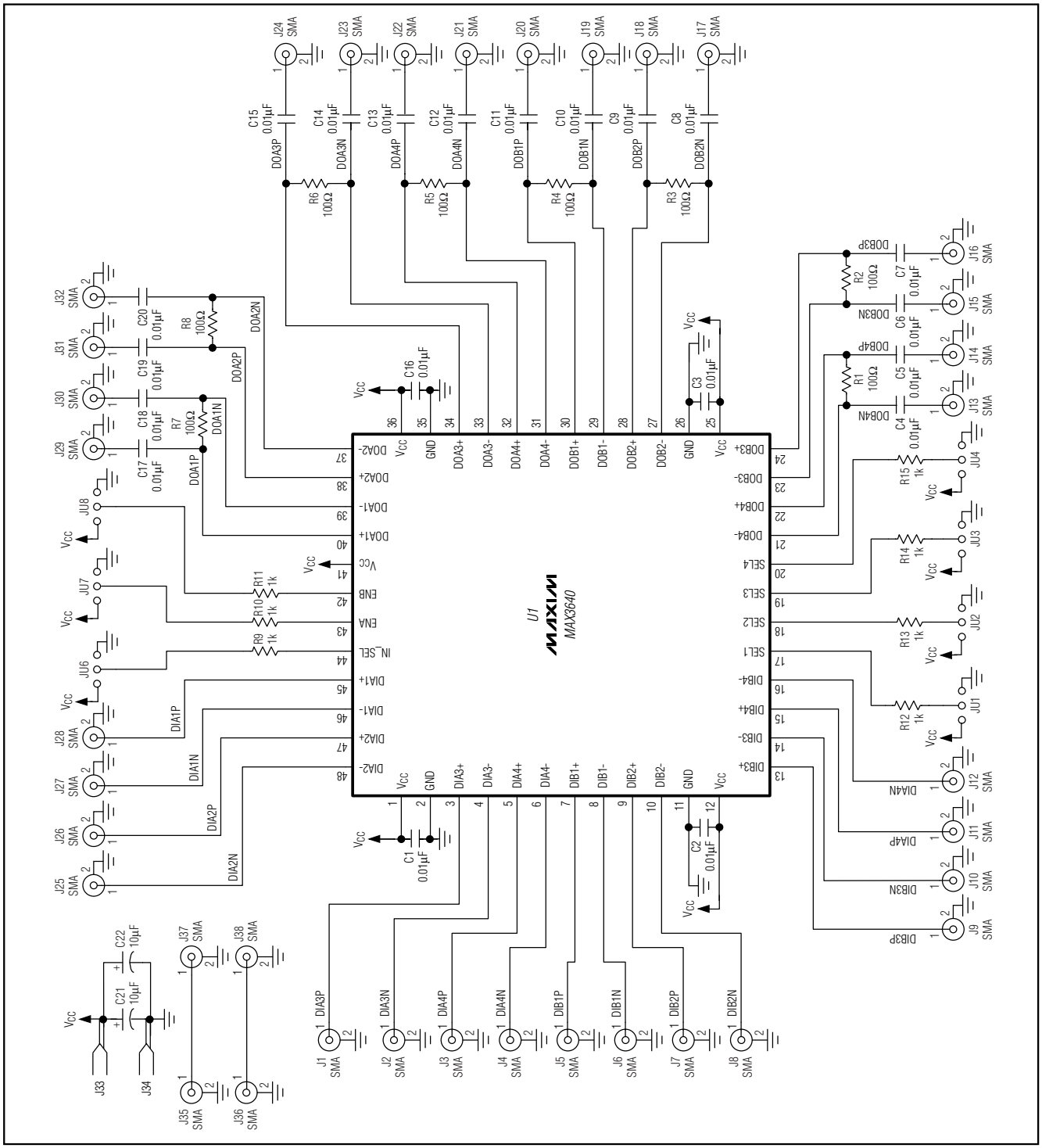

Figure 1. MAX3640 EV Kit Schematic

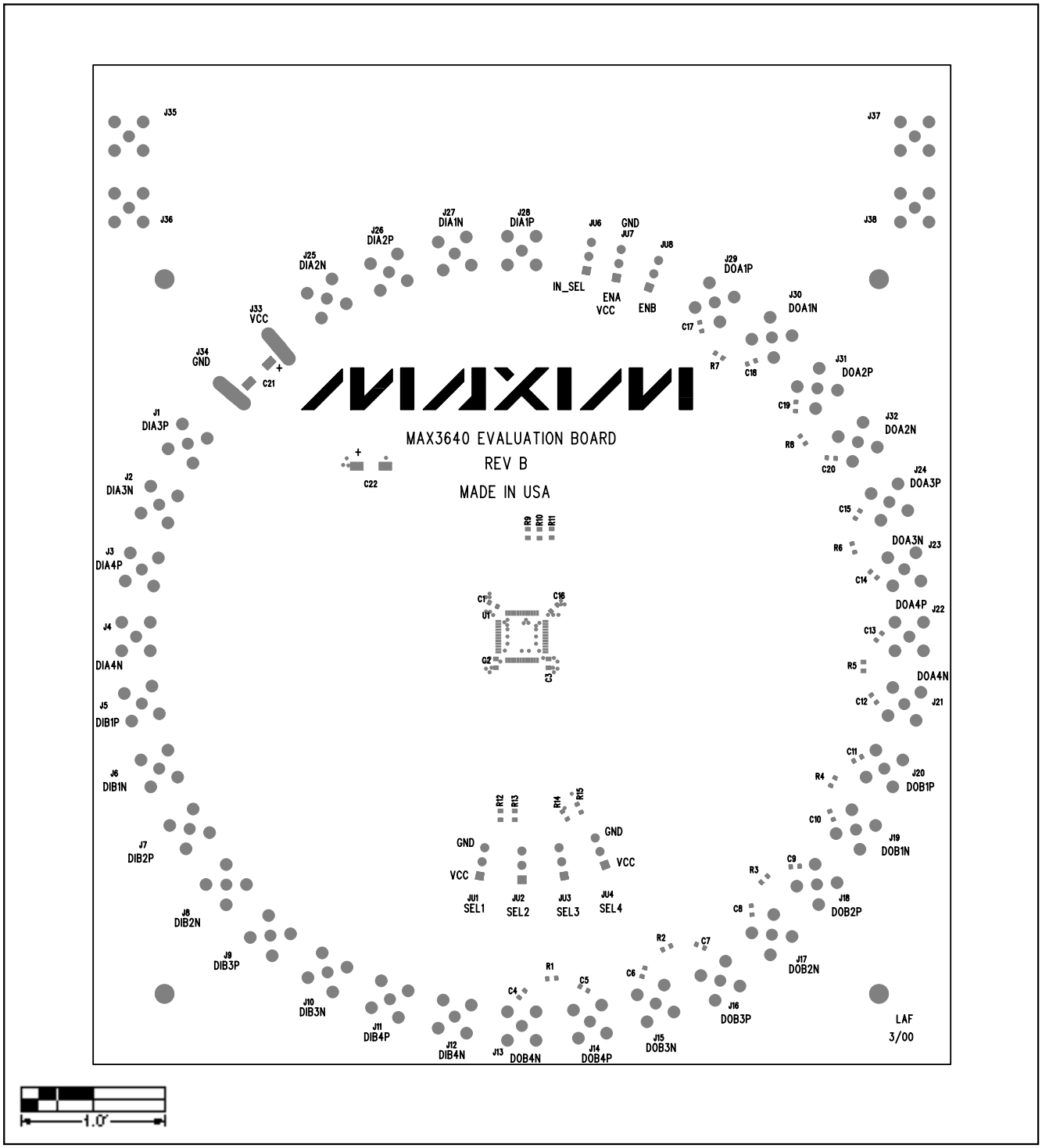

Figure 2. MAX3640 EV Kit Component Placement Guide—Top Silkscreen

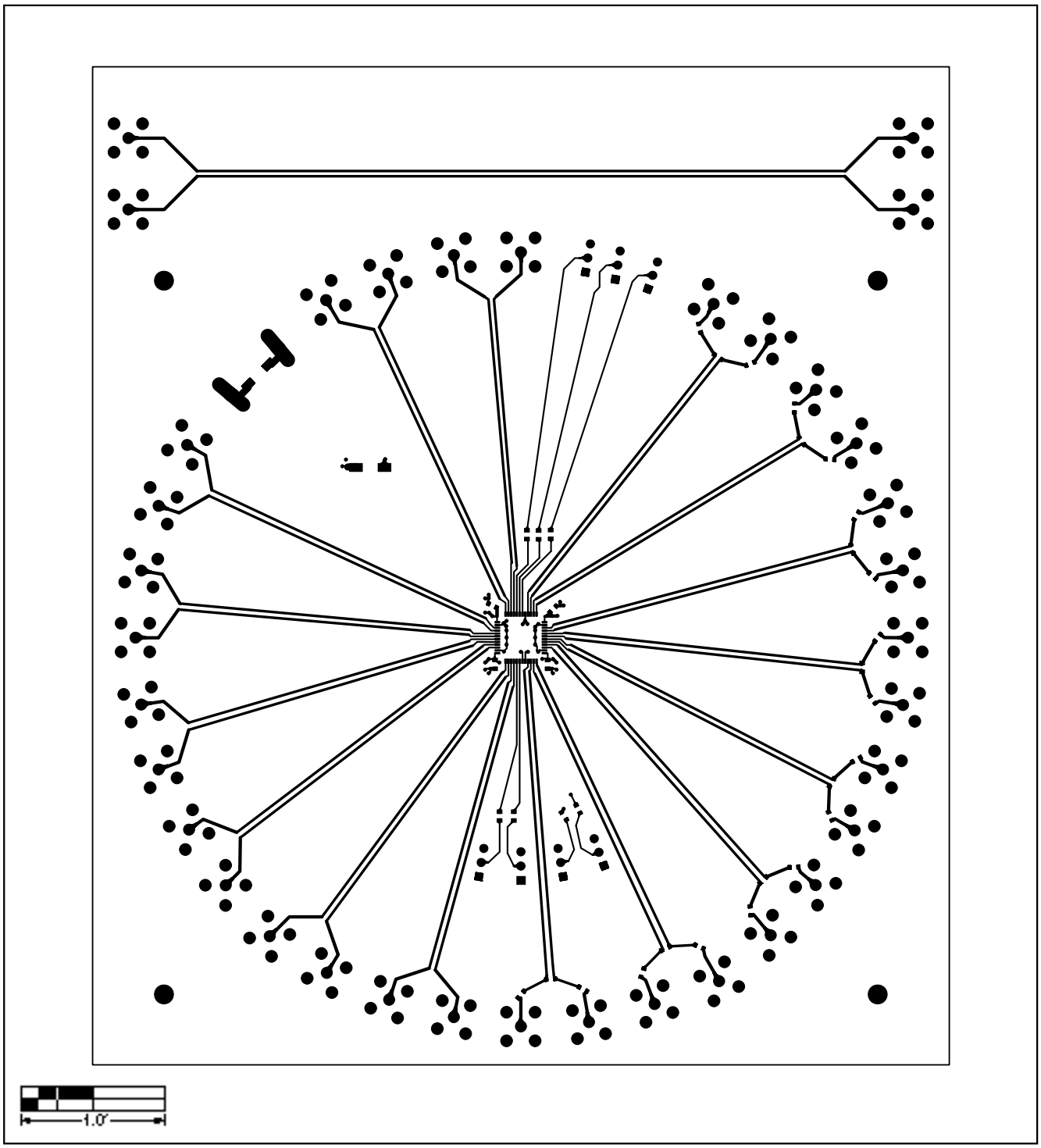

Figure 3. MAX3640 EV Kit PC Board Layout—Component Side

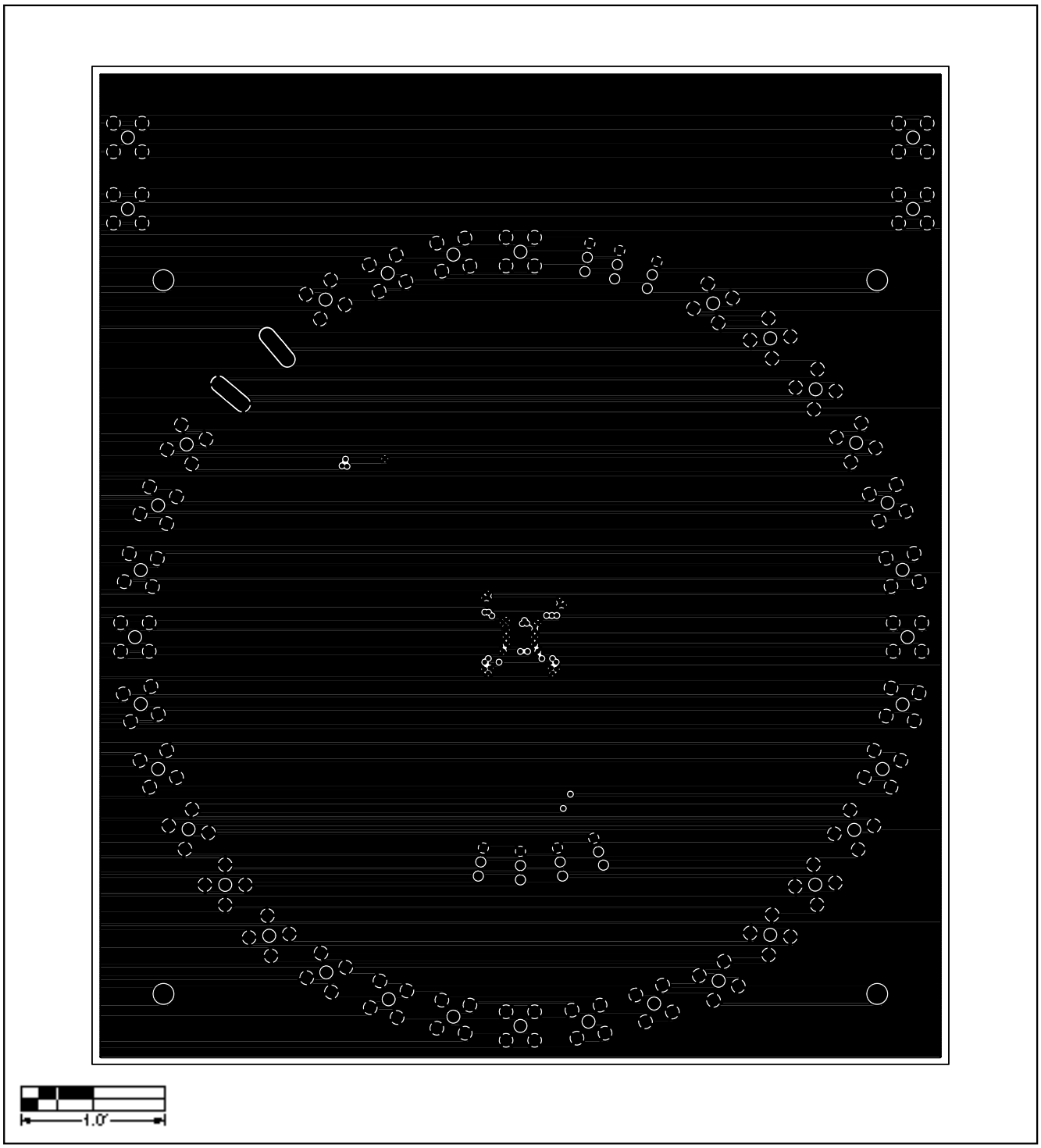

Figure 4. MAX3640 EV Kit PC Board Layout—Ground Plane

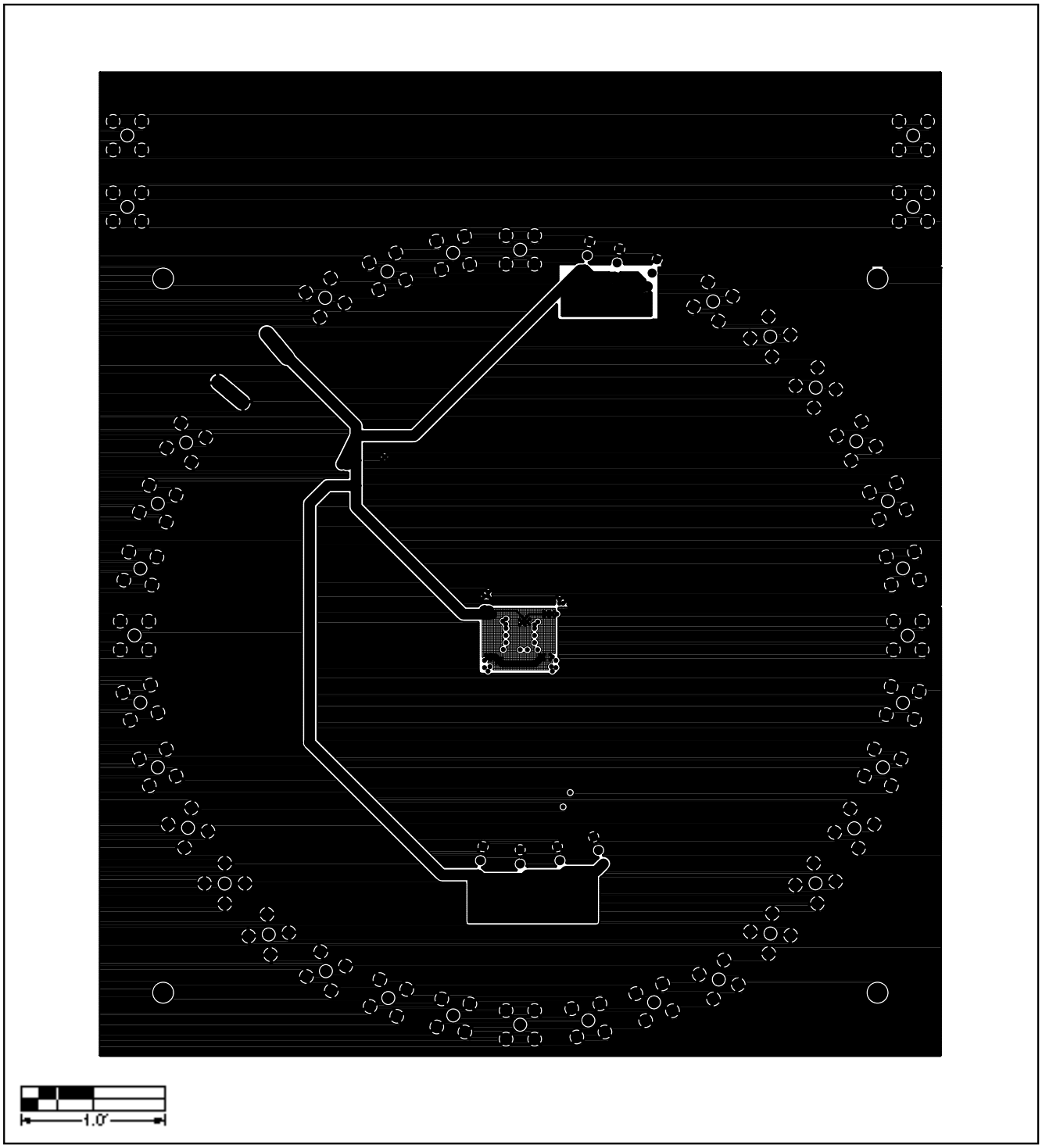

Figure 5. MAX3640 EV Kit PC Board Layout—Power Plane

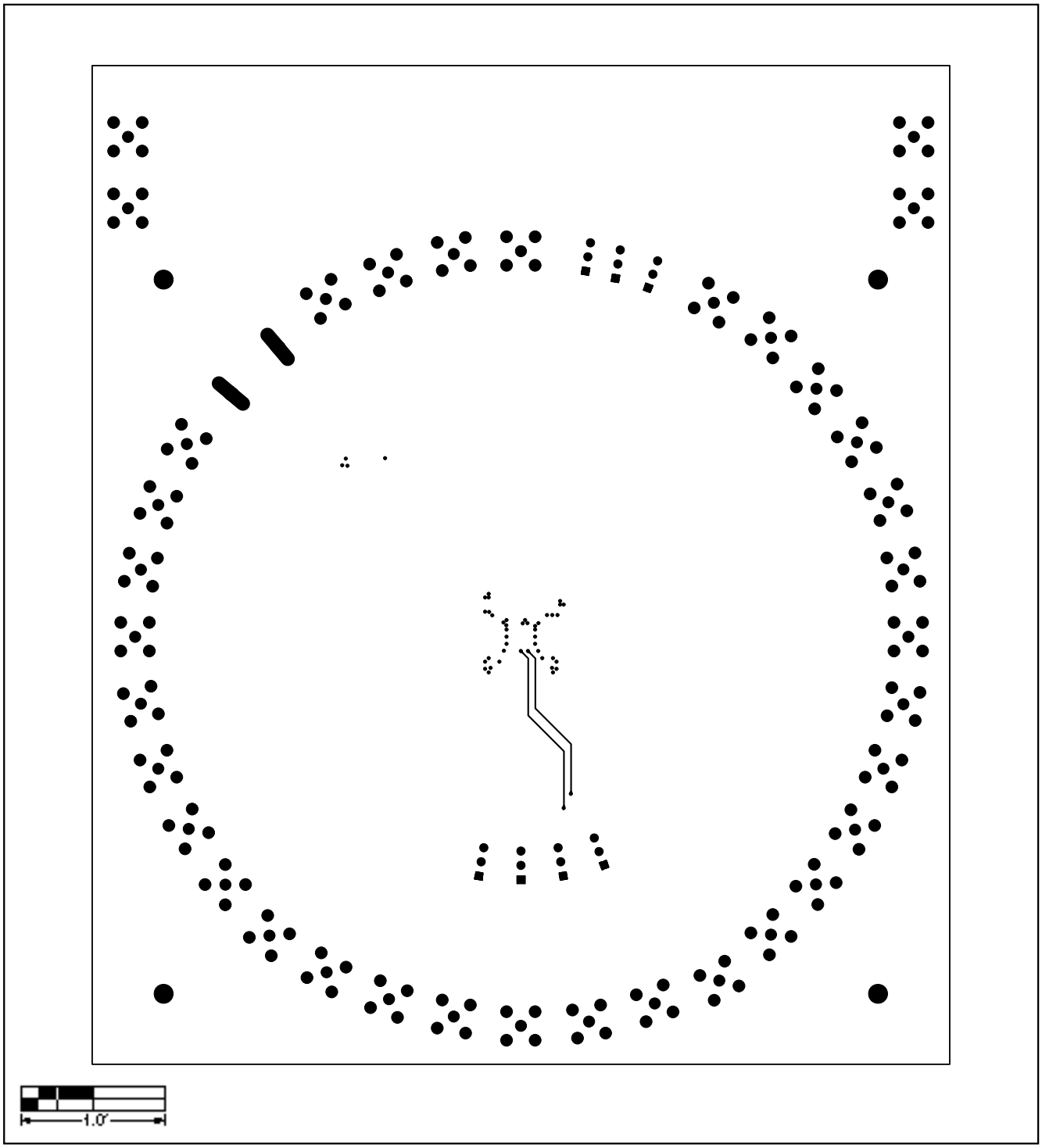

Figure 6. MAX3640 EV Kit PC Board Layout—Solder Side

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